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Partial Stock Acquisitions by New Institutional Investors in Public Corporations and their Valuation Consequences: An Empirical Study on Corporate Governance in Germany

von

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1 INTRODUCTION

"Incentives are the essence of economics" (Lazear, 1987, p.744)

The corporate governance problem in modern business organizations is not a new economic phenomenon, going back at least to Adam Smith's (1776, Vol.2, p.265) legendary warning about "negligence and profusion" in joint-stock company. Though it is not a new economic phenomenon, it "moved from the margins to the mainstream of economic activity" only recently (Clarke, 2004, p.2). Since its evolution from being a relatively minor phenomenon to taking the stage as a central actor in modern business organization, the corporate governance problem not only has grown rapidly as a topic of interest in academic literature but also has received much attention from regulators, policy makers, and the media.

The public corporation[1] is generally accepted to be one of the main drivers of economic progress, wealth creation (Chandler, 1990, Chapter 2), and some even claim that it "is the foundation of modern capitalism" (Joshi, 2003, p.6). Regardless of the praise offered to the public corporation, many criticize the organization's inherent corporate governance problem (Jensen, 1989): the wave of corporate scandals in the beginning of the twenty-first century (such as Enron and WorldCom to name just a couple of the more extreme cases), that ultimately led to the Sarbanes-Oxley legislation in 2002, were an unpleasant reminder that agency costs are very real (Jensen, 2000) and can destroy value and wealth around the world. Five additional forces pushed corporate governance even further into the limelight: large numbers of privatizations in recent decades, reforms of the pension fund sector, the large number of takeovers in the 1980s (particularly in the US), integration of capital markets (especially the European Union), worldwide deregulation, and, lastly, the crises in East Asia, Russia, and Brazil (Becht et al., 2005, pp.4-7).

While the importance of corporate governance has long been recognized, there is still a discrepancy (even in well-developed countries) between the workings of existing governance mechanisms (Shleifer and Vishny, 1997, p.737).[2] The purpose of this dissertation is to contribute to the understanding of the German corporate governance system by examining partial stock acquisitions by new institutional investors as a corporate governance mechanism.

The separation of ownership and control in the public corporation leads to a severe conflict of interest between managers and owners arising from asymmetric information. This conflict fits well

[1] Two business forms exist in Germany that can issue shares and that are Aktiengesellschaft (AG, stock corporation) and Kommanditgesellschaft auf Aktien (KGaA, partnership partly limited by shares). I focus on stock exchange listed companies and I use diverse terms to describe these two forms of business and that is to say publicly traded companies, listed companies, public limited companies, or public corporations (Edwards and Nibler, 2000).

[2] Indeed, gaining further insights into the workings and functioning of the corporate governance system and in how far corporate governance can create value for shareholders are some of the most compelling and intriguing topics for contemporary researchers of applied financial economics. For instance, searching corporate governance on Social Science Research Network (SSRN) yields nearly 7,800 items today. Random walk hypothesis, market efficiency, option pricing theory, equilibrium trade-off between risk and expected return are each considered cornerstones of modern financial analysis (Lo, 2000). Searching these topics on SSRN yields the following number of hits: 680 for random walk, 2,260 for efficient markets, 2,100 for option pricing, and 1,060 for risk and expected return. Hence, comparing these search results with the results for the term corporate governance underlines the ubiquity of corporate governance and the great interest in this research field.

into the principal-agent paradigm. Nevertheless, how do agency problems relate to corporate governance? Hart (1995) explains that *two conditions* are absolutely necessary: *first*, agency problems are inherently present in the principal-agent relationship of a corporation; and, *second*, the writing and enforcement of contracts entails costs. Thus, agency problems are not resolvable by writing complete contracts because it is often unfeasible to do so. Incomplete contracts ultimately imply that there are ”residual rights of control” (Hart, 1995, p.680) because not all eventualities could be specified by means of contracts. It remains important who holds the control rights: given that principal and agent have at least partially conflicting interests, the effort to perform the task on the principal's behalf is costly, and the agent maximizes his own utility. The governance structure is then in place to allocate the residual rights of control over the firm's nonhuman assets (Hart, 1995). Corporate governance structure is then "a mechanism for making decisions that have not been specified in the initial contract" (Hart, 1995, p.680).[3] The corporate governance system is deeply integrated within the legal, cultural, political, and financial systems of the respective country or firm. Moreover, this is a complex and intertwined system of various mechanisms (Kim and Nofsinger, 2007, Chapter 1). Because corporate governance encompasses "de facto control of corporations" (Farrar, 2005, p.4), it can be difficult to grasp conceptually because of the various different provisions at work. Hence, I have to establish a perspective on corporate governance to define the scope of my analysis. In fact, there is no definitive corporate governance system academics agree upon as a result of the multiple variables relevant to the respective corporate governance system (e.g., country, type of firm, ownership structure, business form, and set of mechanisms). From a financial economist (i.e., agency theory) standpoint, however, one can conceptualize this system by analyzing three mitigating factors of the corporate governance problem, namely the bonding solution, monitoring solution, and incentive solution (Denis, 2001, p.196). Based on these approaches one can derive various internal and external corporate governance mechanisms that provide checks and balances on managerial behavior, which are different coherent approaches to monitor and control management (e.g., legal protection, monetary incentives, product market competition, and control by large shareholders or creditors).

Having defined the corporate governance system as being a set of internal and external mechanisms that monitor and control managers, it is still questionable what determines the effectiveness of this system. While theorizing is helpful in structuring this problem, theory alone is unlikely to provide a comprehensive answer. In addition to theorizing, it appears necessary to use empirical evidence to help answer the question of whether partial stock acquisitions will indeed enhance the firm's corporate governance system and create value for the firm. From an analytical perspective several variables will influence the efficiency of the firm's respective corporate governance system, such as the region where the firm conducts its business, the corporate governance mechanisms of the respective firm, and the type and concentration of ownership in the firm. Awareness of the wide range of important variables is important since corporate governance systems are closely linked to the financial system,

[3] Another much wider but prominent definition of corporate governance is that it is related to "the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer and Vishny, 1997, p.737).

(equity) capital markets, regulations, and the business form. Thus, the corporate governance system that a company is subject to is largely dependent on the way the company decides to raise its capital (Wruck, 2008), the country in which it is listed, and the regulatory system that applies.

In order to shed light onto the corporate governance problem, this dissertation conducts an empirical investigation on German corporate governance systems in public corporations and examines whether partial stock acquisitions by new institutional investors create value for shareholders by enhancing this system. This research question is important for at least three themes associated with corporate governance: the specifics of the German corporate governance system as institutional background, partial stock acquisitions as the main mechanism, and new institutional investors as the main actors.

The German corporate governance system has some distinct features compared to other corporate governance systems around the world, namely weak minority shareholder protection, a less developed capital market, and a large ownership concentration. Additionally, this system has experienced regulatory alterations in recent years, which may have presented a structural break and may have impacted it significantly. Lastly, because of the economic importance of Germany—the largest economy in Europe and the fourth largest in the world—characterizing its specifics helps to understand corporate governance at large and thus contributes to the extant literature on the subject.

Germany is traditionally characterized as a bank-based financial system associated usually with an insider corporate governance system with a weak equity capital market, large controlling shareholders, and a comparatively weak market for corporate control (Franks and Mayer, 1995). In contrast, the market-based financial system, usually ascribed to the US or UK, is referred to as an outsider corporate governance system with dispersed ownership, strong equity capital markets, and a large market for corporate control (Franks and Mayer, 1995). One of the most fascinating questions in corporate law is whether corporate governance systems around the world will ultimately converge toward a single model in consideration of growing globalization of capital markets and whether this definitive system will be the Anglo-American model of corporate governance (Gordon, 2000). This question is intimately linked to the efficiency question of financial systems. It is too early, however, to make a final judgment on the convergent debates of financial and corporate governance systems. Goergen et al. (2008, p.37), for instance, discuss that while convergence of the German corporate governance system has not substantially changed the institutional structure of the German system, that is, the form of the system, there have been significant adjustments in the importance of various corporate governance mechanisms, that is, in the hierarchy of the various corporate governance mechanisms. Consequently, it becomes increasingly important and interesting to study the functioning of the German corporate governance system as it may reveal new insights against the background of recent alterations in the system, particularly the regulatory alterations since the beginning of the 1990, that have promoted the capital market, and thus may have increased the importance of the capital market as corporate governance mechanism.

Partial stock acquisitions, defined as acquisitions between 3% and 30%, may be an effective corporate governance mechanism in Germany, which could have large potential to enhance the efficiency of this system. This mechanism can be understood as a synthesis of two corporate governance mechanisms—large shareholders and the market for (partial) corporate control, each of which help monitor and control the acquisitions (Brav et al., 2008, pp.1773-1774). Theoretical studies explain that large shareholders can indeed be effective monitors and may help alleviate the corporate governance problem (Shleifer and Vishny, 1997) as is the case with the capital market (Tirole, 2006, Chapter 1). Shareholder activism, however, is costly, and can lead to the free-rider problem (Grossman and Hart, 1980). Although monitoring and control are costly (e.g., monitoring costs, illiquidity, loss of diversification), the benefits spread to all shareholders equally (Shleifer and Vishny, 1986), which reduces the incentive to engage in costly shareholder activism. Nonetheless, traditionally, the German insider corporate governance system is characterized by a weak equity capital market and a weak market for corporate control as opposed to the Anglo-American outsider based system (Franks and Mayer, 1995). Hence, one may expect that partial stock acquisitions play a minor role in Germany. In contrast, Franks and Mayer (2001) point out that even though there has been virtually no market for corporate control in Germany after the World War II period, there is an active market for partial control. The importance of this mechanism may even have increased in recent years because of decisive alterations in the financial system as well as developments in the corporate governance system in Germany, as discussed above. Still, whether shareholder activism creates value for the firm by enhancing the corporate governance system is unclear. Thus, the question about the effectiveness of this provision must be addressed empirically.

New institutional investors, defined as private equity firms and hedge funds that acquire minority blocks in public corporations, may be excellent shareholder activists who address the corporate governance problem (Wruck, 2008) with their unique business model and organizational structure, which differentiates them from traditional institutional investors or other type of investors (Achleitner et al., 2010b). While theory indeed suggests that shareholder activism is an important provision to the corporate governance problem, there is little evidence that large shareholders are successful activists. One reason for this finding is that the ability of a shareholder to be a successful activist largely depends on the type of ownership, but models of large shareholders usually assume that large shareholders are homogeneous rather than heterogeneous (Cronqvist and Fahlenbrach, 2007). Private equity firms and hedge funds, however, entered the corporate governance scene as players only recently (Gillan and Starks, 2007, p.55). While from an economic perspective these investors have great potential to create shareholder value, critics question their ability to do so effectively. Some argue that these investors exploit superior information and take advantage of tax breaks without actually creating operational value (Kaplan and Stromberg, 2009); others accuse hedge funds to be only short-term orientated and thus more interested in short-term (trading) profits rather than long-term shareholder value enhancements.

The debate regarding the ability of new institutional investors as activists has recently received much media and academic attention (Achleitner et al., 2010b). Nevertheless, even though these types of activists are widely discussed, their ability to create value by enhancing the corporate governance system remains poorly understood. Additionally, there is a lack of empirical evidence about new institutional investor activism and existing empirical studies are afflicted with various biases. Consequently, fresh empirical investigations are necessary.

So what does modern economic theory convey about corporate governance? The growing importance of corporate governance from organizational, regulatory, public policy, and academic perspectives has taken place only in the last thirty-five years (Denis, 2001). Jensen and Meckling's (1976) treatise on the theory of the firm is often cited as a seminal work on the corporate governance problem. This theory uses a nexus of contracts view of the firm and applies agency theory to the contractual relation between manager and shareholder in the public corporation where widespread asymmetric information exists. This work belongs to a new string of literature, emerging in the twentieth century, that is summarized under the term "new institutional economics" (Williamson, 1975, p.1). Its roots go back to an article by Coase (1937) that explicitly introduce transaction costs into the economic analysis (Coase, 1998), and it is based on the assumption that real resources are required when originating and employing institutions and organizations (e.g., markets, states, organizations). In the neo-classical theory, the firm has a paradoxical existence because there is no real need for a firm. Assuming ideal economic conditions (e.g., no transactions costs, complete information, no market failure) the market itself will efficiently allocate and organize resources and will reach an optimal output level without the need for other forms of organizations (Kim and Mahoney, 2005, p.225). The rise of a large corporation into the mainstream of economic activity motivated scholars to engender new theories that analyze the coordination within a firm—and thus between individuals—rather than only the coordination by the market by considering the importance of transaction costs, economics of information and institutional economics. Indeed, the modern theory of the firm is a theory of organization where the interaction and the interdependences of utility maximizing agents and their constraints are analyzed (Milgrom and Roberts, 1992, Chapter 1). Both the theoretical and practical relevance of these important topics of new institutional economics were acknowledged with three Nobel Prizes in economics in the last 20 years.[4]

This dissertation adopts an empirical approach to study the ability of partial stock acquisitions by new institutional investors to create value by enhancing the target firm's corporate governance system. Therefore, event study and the cross-sectional analysis methodology are used as empirical tools in my analysis. The data for my analysis covers the investigation period running from January 2002 to July 2008. The magnitude of the announcement of partial stock acquisitions is investigated by analyzing whether the stock market response to the announcement of a partial stock acquisition is positive,

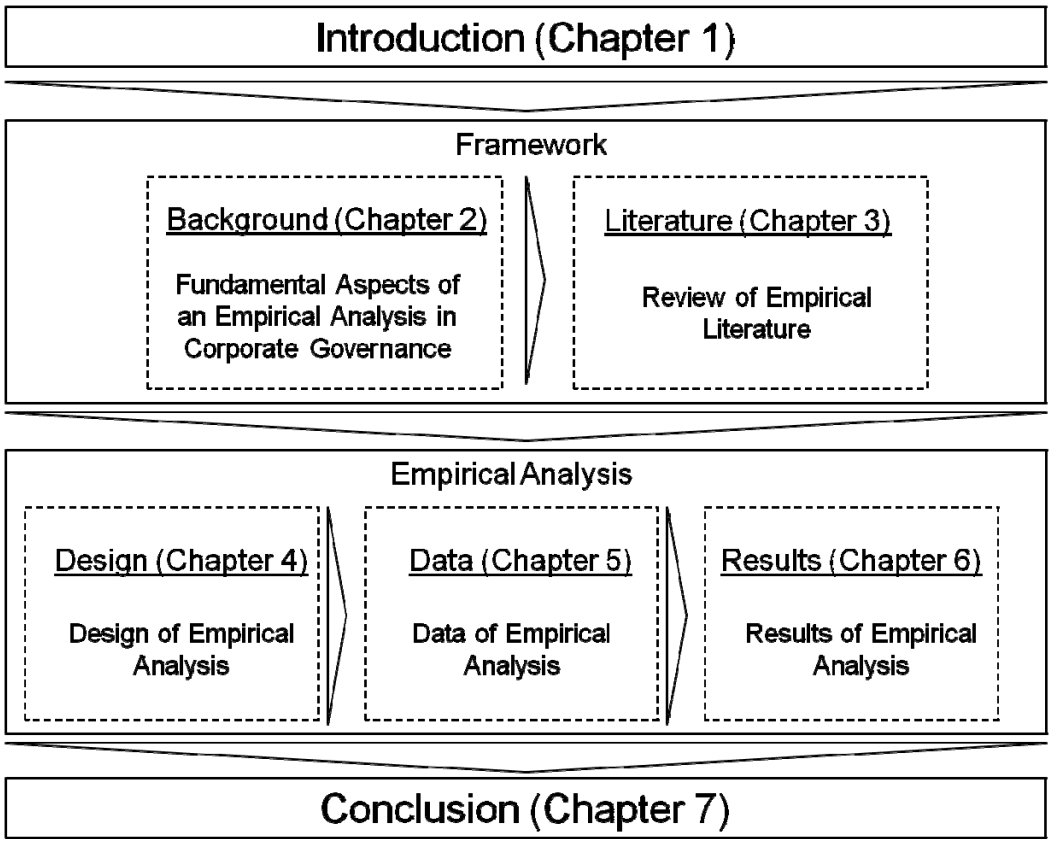
[4] Coase was acknowledged in 1991 for his contributions to the significance of transaction costs and property rights (Coase, 1937). Akerlof, Spence and Stiglitz in 2001 received the Noble Prize in 2001 for their work on market with asymmetric information (Akerlof, 1970; Rothschild and Stiglitz, 1976; Spence, 1973). Last but not least, Williamson was acknowledged in 2009 for his analysis of economic governance, especially the boundaries of the firm (Williamson, 1985).

negative, or neutral. To extend the analysis, the determinants of the announcement effect are examined by testing a framework of various hypotheses derived from three main explanations for the positive market response to partial stock acquisitions, namely corporate governance enhancement effects (CGE), undervaluation signaling effects (UV), and anticipated takeover effects (AT). Based on this framework five types of models are constructed to isolate the various drivers for the announcement effect. While the literature commonly reports a positive announcement effect following the partial stock acquisition announcements, there is no clear answer concerning the nature of the determinants of this positive announcement effect. The usual pitfall in examining the sources of the announcement of partial stock acquisitions is that there are coexisting hypotheses explaining this effect, and these are difficult to disentangle. The literature, especially the German literature, has failed thus far to come up with a convincing idea on how to tackle this problem. My results suggest that partial stock acquisitions by new institutional investors, indeed, create value.

New evidence is presented in various ways. *First,* an innovative, unique, and hand-collected dataset for the investigation period January 2002 to August 2008 is used. A drawback of empirical studies in partial stock acquisitions is that there is no central database for partial stock acquisitions in Germany. The same applies to the explanatory variables in the cross-sectional analysis, which have to be collected independently. With this in mind, I construct a novel and independent database named Corporate Governance Database (CGD) for the purpose of conducting an empirical analysis on corporate governance. *Second,* my analysis focuses on a sample of private equity firms and hedge funds that make minority acquisition between 3% and 30% of voting rights in public corporation listed on German stock exchanges. To the best of my knowledge, this is the first study that analyzes minority block acquisitions by private equity firms and hedge funds in Germany. Although, these types of investors are widely discussed and usually considered to have potential to be important shareholder activists, they remain poorly understood. Hence, my dissertation reveals new and valuable insights on the understanding of new institutional investors as shareholder activists. *Third,* I deploy an innovative tool namely the holding period of the investment and apply an interaction model in my cross-sectional analysis to disentangle the coexisting hypotheses. By doing so, I am able to provide evidence that indeed the corporate governance enhancement effect is a major driver of the stock market response to the announcement of partial stock acquisitions. *Fourth,* I conduct a rigorous empirical analysis by deriving the hypotheses from a theoretical framework based on the three main drivers for the announcement effect (CGE, UV, AT) and various control variables to isolate the announcement effect. Moreover, multiple model specifications are deployed and a sensitivity analysis is conducted to verify the robustness of my results. Overall, the new evidence presented in this dissertation suggests that new institutional investors indeed use their ability and create value by strengthening the target firm's corporate governance system. Consequently, the results presented in this dissertation shed new light onto the relation between partial stock acquisition by new institutional investors and the German corporate governance system.

The dissertation is structured in seven chapters enclosed by the introduction (Chapter 1) and closing (Chapter 7), as illustrated in *Figure 1.1*. Chapter 2 and 3 provide framework for the empirical investigation on corporate governance and lay the groundwork and review the literature necessary to conduct the analysis. The following three chapters lay out the empirical analysis. Therefore, whilst Chapter 4 introduces the design for the analysis, Chapter 5 presents the data gathering procedure to perform that analysis. Subsequently, Chapter 6 shows and interprets the results.

Figure 1.1: Plan of Dissertation



Chapter 2 provides the fundamental aspects necessary to perform my empirical investigation of corporate governance. Three cornerstones are presented, which help to frame the story analyzed in my dissertation from historical, analytical, and methodological aspects. First, historical aspects put the public corporation into the context of my analysis. This section begins by looking at the evolution of corporate governance before sketching the transition from neo-classical economics to new institutional economics associated with the theory of the firm. Then, the role of the financial systems as well as the development of the German corporate governance systems is outlined. This is important for understanding the evolutionary character of the financial system as well as the German corporate governance system, which is crucial for my analysis. Second, analytical aspects lay the background for understanding the principal-agent problems at the heart of the corporate governance problem that is the center of interest in my dissertation. This groundwork consists of describing the agency problems that principals have to mitigate against, the mechanisms that help to alleviate this problem, and an

exposition of how this understanding aids my empirical analysis in studying the investor's use of partial stock acquisitions as a tool of corporate governance. Third, methodological aspects discuss issues associated with conducting an empirical investigation into partial stock acquisitions. Therefore, the methodologies deployed in the literature to examine ownership structure and firm performance are introduced. Particularly, I focus on performance measures, ownership measures, and new institutional investors as shareholder activists.

Chapter 3 reviews the empirical literature relevant to my research question. The empirical literature associated with my research question generally belongs to the vast body of empirical literature on corporate governance —more specifically to the strand of literature on ownership structure and firm performance. At first, the German literature with respect to partial stock acquisition announcements is reviewed. Afterwards, evidence from US literature and the European literature most germane to my research question is presented. In the closing section, the most important results are summarized and implications for further empirical analysis are drawn.

Chapter 4 presents the empirical approach used to address my research question. First, the applied methodology is presented. Thereby, the event study and cross-sectional analysis methodology is outlined. Afterwards, the main hypotheses of my empirical analysis are developed. In doing so, the hypotheses related to the event study are presented before the hypotheses of the cross-sectional analysis are elucidated. Finally, the econometrical models used for my investigation are set up.

Chapter 5 presents the data from the empirical analysis. As previously mentioned, a major challenge in conducting empirical studies in partial stock acquisitions is that there is no central database for this kind of transactions in Germany. The same problem applies to the explanatory variables used for the investigation of the sources of the announcement effect. Hence, the data has to be collected independently. To make the data derivation process as comprehensible as possible the CGD for my empirical investigation is constructed and presented here. Furthermore, the derivation procedure for the sample used for the event study as well as the explanatory variables is carefully outlined.

Chapter 6 presents the results of my investigation. To begin with, the descriptive statistics of the data are presented, followed by the results of the event study analysis. Afterwards, the results of the cross-sectional analysis are outlined based on five pairs of models. Finally, the robustness of my results is checked by conducting a sensitivity analysis.

In concluding Chapter 7, I reflect upon my investigation from various perspectives and discuss how far my empirical evidence helps to shed new light on the question of whether new institutional investors utilize their potential to create value in public corporations by enhancing the respective corporate governance system. Furthermore, I put forward potential limitations and point out some ideas for future research that arose during my study but were not in the scope of my analysis.

2 FUNDAMENTAL ASPECTS OF AN EMPIRICAL ANALYSIS IN CORPORATE GOVERNANCE

The purpose of this chapter is to provide fundamental aspects necessary to conduct my empirical investigation of corporate governance. My research question focuses on one particular business form namely the public corporation, which is important since corporate governance is closely linked to the capital markets and the business form. Thus, the corporate governance system that a company is subject to is in large part dependent on the way the company decides to raise its capital (Wruck, 2008, p.10). One particular corporate governance mechanism is examined, namely partial stock acquisitions by new institutional investors. Thereby, it is investigated how much this provision can help to enhance the system and create value. To test this idea an empirical investigation is conducted in the German stock market. This chapter outlines three cornerstones using historical, theoretical, and methodological aspects.

The plan of this chapter is as follows: *first*, the historical developments of four aspects that have given rise to the current interest in corporate governance are discussed (Section 2.1); *second*, relevant analytical considerations associated with my empirical investigation of corporate governance are investigated (Section 2.2); and, *third*, methodological issues that are relevant to my empirical investigation are elucidated (Section 2.3).

2.1 PUBLIC CORPORATION IN CONTEXT—HISTORICAL ASPECTS

This section discusses the historical aspects of corporate governances. Even though the term corporate governance emanates from the US, today the term has established itself globally. Thus, the perspective will necessarily be of an international nature. Corporate governance is relatively new in mainstream economics: the roots of corporate governance and underlying theories, however, go back much further and are based on theories from a variety of disciplines encompassing accounting, economics, finance, law, management, and organizational behavior (Mallin, 2007, Chapter 2).

Through a historical study, one shall understand the evolution of corporate governance and why it is worth one's attention. Therefore, this section elucidates four important aspects relevant to my research question and discusses them from a historical perspective: *first*, the evolution of corporate governance; *second*, the changes in theory of the firm; *third*, importance of financial systems; and *fourth*, development in German corporate governance.

2.1.1 Evolution of Corporate Governance

In the nineteenth century, the single unit enterprise (where owner and entrepreneur were the same person) was still the most dominating and widespread business form. Its supremacy lay in market co-

ordination, which at the time was more profitable than internalized coordination and administration within large scale and multiunit business enterprises because of relatively small economic activity, low capital needs, and limited technological borders. Initiated by the industrial revolution mainly through new transportation and communication systems, the end of the nineteenth century and the beginning of the twentieth century witnessed a dramatic expansion of economic activity (Chandler, 1977, Chapters 3 to 6; Chandler, 1990, Chapter 2).[5] Simultaneously, the increase in capital needs moved the public corporation with limited liabilities and transferability of interests "from the margins to the mainstream of economic activity" (Clarke, 2004, p.2).

The rise of the public corporation started with railroad and telegraph companies that were the first large-scale modern enterprises.[6] The capital, administration, and coordination needs of these companies were neither financeable nor manageable by a single entrepreneur, family, or group of investors. Thus, a new type of enterprise was needed. In the course of this development, the size of the firms increased substantially. The new means of transportation, communication, and improved production capabilities allowed large enterprises to enjoy substantial cost reduction through economies of scale and scope. To do so, the enterprises had to invest in modern mass production and distribution facilities to exploit these cost advantages. Additionally, an armada of professional managers was needed to coordinate and administer the new complex and numerous day-to-day operations.[7] Hence, the increased demand for professional managers led to the "managerial revolution" (Chandler, 1977, p.11), which in turn led to an increase in the separation of ownership and control (decision-making process). These separations brought about the new enterprise, or the modern corporation, to be owned by thousands of shareholders and to be led by specialized and professional salaried managers (Chandler, 1977, Conclusion; Chandler, 1990, Chapter 1; Williamson, 1985).

The modern corporation with dispersed ownership as described by Adolf Berle and Gardiner Means in their book The Modern Corporation and Private Property (1932) mainly characterizes the US situation. It was written during the great depression, was strongly influenced by the legal and economic theory of its time, and was sensitive to concurrent U.S. legislation including the creation of the SEC that intended to protect shareholders from managers (Clarke, 2004, p.3; Holderness, 2003, p.51). Berle and Means discuss in a critical way the development of US business enterprises and the splitting of the "atom of property" (Berle and Means, 1932, p.9), which they attribute to the increasing dispersion of ownership and the separation of ownership and control (Berle and Means, 1932, Chapter 1). They voice concern over the fact that owners are virtually unable to exercise control over the decision-making process conducted by the managers. Thus, the practice of checks and balances, which should

[5] Chandler (1990) compares and contrasts the development of the largest companies in three of the most important economies namely U.S., Britain, and Germany over the period 1880s through the 1940s. Thereby, he compares the different developments and is looking for common characteristics of successful corporations.

[6] However, the foundation of the Dutch East Indian Company in 1602 in the Netherlands pioneered key aspects of the joint-stock company (Adams, 1996).

[7] General Motors is known to form the first multiunit business enterprise in the 1920s and to react to the growing complexity and challenges of its business environment (Milgrom and Roberts, 1992, Chapter 1).

control management, appeared to be endangered leading Berle and Means (1932, pp.8-9) to conclude that crucial control problems may emerge.[8]

The dispersed ownership pattern, which is associated often with the modern corporation, might be representative of the United States but it is not for ownership characteristic outside of the US (La Porta et al., 1999).[9] Nevertheless, the importance of the managerial revolution (Chandler, 1990)[10] and the implication it has for corporate governance apply to other countries around the world similarly because the separation of ownership (residual risk-taking) and control (decision-making) is a universal characteristic of public corporations. As a result of the separation between the two functions (i.e., risk-taking and decision-making) in the public corporation, the role of information distribution between managers and owners gained importance and introduced severe governance problems. Indeed, the resulting problems emerging from the separation of ownership and control have been well-known since Adam Smith's (1776) Wealth of Nations. Smith states that separation of ownership and management must lead to "negligence and profusion."[11] This warning, however, was made prior to the industrial and managerial revolution—the importance of large business enterprises has increased significantly since then (Holderness, 2003). During the eighteenth century, the economic consequences of problems emerging from separation of ownership and decision-making were still rather small. Nevertheless, it is crucial to understand that corporate governance problems and failures are "as old as the corporation" itself (Tirole, 2006, p.20) and that structural changes such as increased dispersion of ownership just weaken one important corporate governance mechanism, which had long been in place to alleviate managerial misbehavior.

The public corporation as an alternative form of organization gained importance thanks to its capability to meet the demands of historical changes posed to organizations.[12] On the one hand, one can single out four different characteristics that make this business form so appealing: limited liabilities, tradability of interests, legal personality, and centralized management (Monks and Minow,

[8] The new corporate landscape witnessed "the dissolution of the old atom of ownership into its component parts, control and beneficial ownership" (Berle and Means, 1932, p.8). Berle and Means (1932) warned that the observed separation of ownership and control introduced governance problems because the interests of the manager and owners may diverge. The modern corporation is characterized by separation of the decision-making function and residual-risk bearing usually imprecisely described by separation of ownership and control (Fama and Jensen, 1983a). Moreover, the decision-making process is separated in decision management and decision control (Fama and Jensen, 1983b).

[9] Holderness (2009) reports that even though it is typically assumed that the U.S. public corporation has dispersed ownership, the evidence is to the contrary.

[10] Chandler (1990, Chapter 10) discusses the foundations of managerial capitalism in German industry.

[11] Adam Smith (1776) argues "…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 partner in a private copartnery frequently watch over their own" (Smith, 1776, Vol.2, p.264).

[12] The acceptance of widespread private property across different social classes was also important for this development. Traditionally, private property was allocated in the hands of a few institutions or groups of people such as churches, states or groups of or single wealthy individuals. The change and acceptance of widespread private property was a modern development that helped to establish the corporation as one important business form but at the same time increased the dispersion of ownership (Monks and Minow, 2008, pp.10-11).

2008, p.10);[13] on the other, the publicly traded company as a business form imposes also at least three problems: double taxation, increased costs of running the business (e.g., hiring accounts, legal costs, public relation), and governance problems (Kim and Nofsinger, 2007, p.3). The need for effective corporate governance is perhaps the most severe downside of the corporation. Interestingly, this drawback is a side effect of its key characteristics. Shareholders put their money into a legal entity run by a centralized management. Shareholders enjoy limited liabilities and almost free transferability of their interest, which allows optimal risk sharing and specialization. Indeed, the publicly traded company can be seen as an "ingenious risk management device" (Wruck, 2008, p.11) because it allows shareholders to specialize in residual risk-bearing without being in charge of running the business, while managers can specialize in managing the firm without bearing too much residual-risk and providing capital for the company. Yet, at the same time, this places the decision-making process into the hands of a few managers, typically without any particular wealth at risk. In these organizations the decision management is usually separated from the decision control to mitigate potential agency problems that occur because of the different interests of managers and shareholders (Fama and Jensen, 1983a).

In Germany, one can generally distinguish five major types of company organizations decomposed into partnerships and limited corporations. Three types of partnerships and two types of limited companies exist, namely the GbR (civil law association), the OHG (General Partnership) and the KG (Limited Partnership), and the GmbH (Private Limited Company) and AG (Public Limited Company) (Jürgens and Rupp, 2002), respectively.

While today only 0.25% of the companies in Germany are public limited companies (Aktiengesellschaften), this organizational form generates 19.17% of the total turnover of all German companies (Statistisches Bundesamt, 2008). Hence, whereas public limited companies are few in numbers, they play an important economic role in Germany (Jürgens and Rupp, 2002). Furthermore, looking at all limited companies (i.e., public limited companies and private limited partnership), is even more striking: in 2008, 14.86% of the company forms in Germany were limited companies and this business form generated 55.15% of total sales (Statistisches Bundesamt, 2008). Accordingly, large corporations (limited companies), where the separation of ownership and control is more severe than in small companies (partnership), are significant in Germany. Thus, public limited companies are an important engine of the market economy and their activities are crucial to the economic health of Germany.

[13] Limited liability is a concept where the investor's financial liabilities are limited to the invested amount of capital, e.g., the value of the shares acquired. Hence, if the company went bankrupt the shareholder can only lose at most the value of money equivalent to the value of subscribed shares. The tradability of the shares means that company's shares can be transferred to other parties at any time as long as the demand meets the supply. The corporation is a legal entity, that is, it behaves as if it is a legal person and can be sued and can sue in its own name. This legal fiction should not me misunderstood in the way that corporations are human beings; it is rather a legal necessity that allows the corporation to act as a person for a certain purpose (e.g., making contracts, owning property, making lawsuits). Centralized management means that the control of the firm is delegated into the hands of the managing directors with the board of directors as most powerful authority (Monks and Minow, 2008, Chapter 1).

Even though the problems emerging from separation of ownership and control have been known at least since Adam Smith (1776) and Berle and Means (1932), the term corporate governance is relatively new in mainstream economics and business (Denis, 2001). According to Farrar (2005, Chapter 1) it was probably first used by Eells (1962) who discusses the term in his book The Study of Corporate Governance.[14] Becht et al. (2005, pp.4-7) state six reasons for this rather late development and extraordinary rise of the term only recently and attribute the following to this phenomenon: the privatization wave that occurred during the last twenty years worldwide; the reforms in the pension fund sector and an increase in savings of private households which have increased the power and importance of these types of investors; the public-to-private transaction and takeover waves in the 1980s and 1990s (in both the US and Europe, respectively) and the recent merger wave at the turn of the century; the integration of capital markets especially the European Union and deregulation worldwide; the crisis in East Asia, Russia and Brazil which has put focus on the weak corporate governance practices in these countries; and, the corporate scandals and failures of corporations in the USA—particularly in the beginning of the twenty-first century—which brought corporate governance issues in the spotlight. Thus, today, corporate governance is definitely in the mainstream of daily business activity.

Nevertheless, because of the fast rise of the term corporate governance, it is important to distinguish between the meaning that is consistent with the term and the meaning attributed to it over the course of its rise, as it has been known to be used differently and different boundaries have been set to the subject (Keasey et al., 1997, p.2). The implication of the unambiguous use of the term corporate governance has had also an implication for the academic research on possible solutions for the governance problems and thus produced several partly competing but also complementary approaches (Clarke, 2004, Introduction). I apply the agency theory as a conceptual framework in my empirical investigation (see Section 2.2).

From a historical perspective, various important themes have had a major impact on the evolution of corporate governance (Farrar, 2005, Chapter 2). Van den Berghe and De Ridder (1999, Chapter 4) classify six themes namely entrepreneurial capitalism, banking capitalism, managerial capitalism, institutional capitalism, reference shareholdings, and the evolving democratic corporate model. The importance of various themes in the evolution of corporate governance shows that there is an evolutionary process and that different actors or themes dominate the corporate governance scene depending on the period or the country. While the rise of the modern corporation can be associated with managerial capitalism, institutional capitalism can be related to the increased importance of institutional investors especially after World War II (Farrar, 2005, Chapter 2). The importance of each phase is likely to depend on the country and period. According to many academics, at least one new potential theme or actor in the corporate governance scene exists (not mentioned above) namely new institutional investors (i.e., private equity firms and hedge funds). These types of investors might be a

[14] Already in his first chapter, Eells (1962) highlights the importance of the study of corporate governance and the need to establish it as a new discipline (Eells, 1962, pp.3-4).

"new breed of shareholder activists" (Klein and Zur, 2009, p.226) that may have a major impact on the corporate governance system of the public corporation.

2.1.2 Changes in the Theory of the Firm

As organizational forms changed, so did the academic theories to analyze them. The neo-classical economic theory examines the firm by assuming among others no transaction costs and complete information among market participants that leads virtually to neutrality of institutions. Although this analysis allows useful insights into the efficient allocation of resources, and thus has given scholars the opportunity to examine economic efficiency under an ideal type of conditions, it comes at the cost of a highly abstract analysis of resource allocation (Richter and Furubotn, 1996, pp.1-2). In the neo-classical theory, the firm is considered as a production function with the commitment to maximize its profits. According to this theory, the firm is a "black box" (Jensen and Meckling, 1976, p.306) and the market is the driving force on what went on in the firm. Hence, the neo-classical theory of a firm is a theory of the market rather than a theory of an organization (Jensen and Meckling, 1976, pp.306-307). Accordingly, in the neo-classical theory the firm has a paradoxical existence because there is no real need for a firm. Assuming ideal economic conditions (e.g., no transactions costs, complete information, no market failure) the market itself will efficiently allocate and organize resources and will reach an optimal output level without the need of other forms of organizations (Kim and Mahoney, 2005, p.225). The rise of the large corporation into the mainstream of economic activity motivated scholars to engender new theories that analyze the coordination within a firm—and thus between individuals—rather than only the coordination by the market.

A new string of literature, that is summarized under the term "new institutional economics" (Williamson, 1975, p.1), emerged during the twentieth century. It has tried to explore the theory of the firm in more detail by using the analytical apparatus of the neo-classical theory as well as new procedures to scrutinize the microeconomics and the developments and functioning of institutional organizations at a deeper level (Richter and Furubotn, 1996, Chapter 1). New institutional economics specifically considers transaction costs and is based on the assumption that real resources are required when establishing and employing institutions and organizations (i.e., markets, states, organizations). Hence, the importance of transaction costs in production and allocation decisions emphasize the importance of different types of institutions and forms of organizations that help to produce and allocate resources (Richter and Furubotn, 1996, Chapter 2). The assumption of a frictionless environment and thus absence of transaction costs in economic systems is analogous to neglecting frictions in physical systems. Because of the pervasive existence of friction in almost any complex system, it is necessary to incorporate these frictions when intending to get a truer picture of the functioning of the system (Williamson, 1985, pp.18-19). Accordingly, the explicit introduction of transaction costs into economic analysis contributes to the understanding of functioning in the economic systems by taking into account, as best as possible, real-world conditions (Williamson,

1985). Coase (1937) introduces transaction costs economics to explain the existence of the institution (the firm) as an alternative means of economic organization apart from the market. The line of argument is that firms might be better organized internally by authority, direction, and hierarchy rather than externally by the market because of reduction of transaction costs. This is because the price mechanism arising by the use of the market is costly and any transaction on the market generates transaction costs (costs of search for the prices and costs of negotiating the contracts) (Richter and Furubotn, 1996, Chapter 2). Hence, organizing economic activity internally within the hierarchy of the firm (rather than across the market) may save transactions costs. However, the bounds of the firm are limited at the point where transactions by the market become cheaper than transactions organized internally within the bounds of the firm (Coase, 1937; Jensen and Meckling, 1976). Both the theoretical and practical importance of the three important topics of new institutional economics namely transaction costs, information economics, and institutional economics were acknowledged with three Nobel Prizes in economics in the last 20 years.

Transaction costs, property rights, and contract theory are closely related to one another and are important topics of new institutional economics (Richter and Furubotn, 1996, p.34), which help to delineate it from neo-classical economics. A common distinction between neo-classical and new institutional theory is that neo-classical theory focuses on maximizing profit whereas new institutional economics concentrates on minimizing transaction costs (Learmount, 2002). Moreover, in new institutional economics, property rights are important because they specify bundles of property right assignment (right to use, right to change, and right to transfer) over goods and thus they affect economic behavior and economic outcomes (Richter and Furubotn, 1996, Chapter 3). Furthermore, contract theory deals with the incentive problems of asymmetric information in contracts and their impact on behavior of contract parties (Bolton and Dewatripont, 2005, Chapter 1).

Although Coase (1937) has contributed to economic theory by characterizing the bounds of the firm he virtually did not deal with the definition of the firm and failed to operationalize transaction costs, which are important in understanding the workings of the firm (Jensen and Meckling, 1976, pp.10-11; Williamson, 1985, p.4). Indeed, Coase (1937) neglects the problems emerging after contracts are signed which refer to costs in association with monitoring, control, and enforcement of the terms agreed upon (Richter and Furubotn, 1996, Chapter 2).

The theoretical work on corporate governance is often said to start in the late seventies and early eighties of the twentieth century (Denis, 2001). Particularly two papers authored by Alchian and Demsetz (1972) and Jensen and Meckling (1976) are considered seminal in shaping the economic approach to corporate governance and thus agency theory. These authors introduced the notion that a firm is a nexus of contracts of individual factors of production. The firm is characterized as a legal entity that acts as a nexus for a complex set of contracts (explicit and implicit) among individuals (Jensen and Meckling, 1976, p.310). This view makes clearer that the firm should not be confused with a person because it rather provides a framework for a complex contractual system between

opportunistic and maximizing agents with various and partially conflicting interests. Accordingly, the behavior of a firm can be compared to the equilibrium behavior of the market because the firm serves as the framework of contractual relations among individuals (nexus of contracts) that are brought into equilibrium within the firm (Jensen and Meckling, 1976).[15] The theory of the firm analyzes the firm by considering the firms as constantly re-negotiating contracts between individual factors of production with the objective to maximize their own utility (Learmount, 2002).

2.1.3 Importance of Financial Systems

The financial system is intimately linked to the corporate governance system. While the financial system provides the framework for resource allocation on a macro level among different sectors (e.g., households, firms, government), the corporate governance system refers to the framework on the firm-level that facilitates that investors transfer funds to the firm by providing market, legal, as well organizational control mechanisms. In the neo-classical world of no transaction costs, complete information, and complete markets, there is no need for institutions because everything is organized by means of the markets (Coase, 1937). As soon as frictions are introduced into the economic system the analysis changes and economic theory suggests that these frictions (e.g., information and transaction costs) create the need for other institutions besides the (product) markets to mitigate these costs arising by bargaining with one another (Levine, 1997). Financial systems can be defined as systems that "facilitate the allocation of resources, across space and time, in an uncertain environment" (Merton and Bodie, 1995, p.12). In more detail, the functions of financial systems can be partitioned principally into five functions: mobilizing savings, allocate resources, exert corporate control, facilitate risk management, and ease in trading of goods, services and contracts (Levine, 1997, p.691). By carrying out these functions, the financial system may contribute to economic growth. The relative importance of financial systems on economic growth, however, is a controversial topic among economists (Levine, 1997).

The comparative studies of different financial systems focus on analyzing and describing the distinct characteristics of the various financial systems. These studies find significantly different financial systems in countries around the world (Goergen et al., 2008). Countries vary for instance in the importance of their stock market, internal and external finance, and the intermediaries across their different economies (Allen and Gale, 2000a, Chapter 1). Different economies have different ways of allocating resources among others because of different frictions and means of allocating resources, which are determined among others by history, culture, and state of development. Important at this stage is that a country's financial system will have implications for a corporate governance system and hence the awareness of different systems is crucial.

[15] The proponents of the contractual view of the firm highlight that the firm should not be confused with a person who may have social responsibility (Friedman, 1970; Jensen and Meckling, 1976).

For instance, Allen and Gale (2000a, p.4) classify different countries' financial systems between the polar extremes United States and Germany. According to their classification, the UK is closer to the US and France is closer to Germany and Japan in the middle. They choose three criteria for this classification, namely the development of the financial markets, the competition in the banking sector, and external corporate governance mechanism of the respective financial system.[16] The conventional distinction in literature on comparative analysis of financial systems, however, is the classification in two distinct systems, the market-based system and the bank-based system (Goergen et al., 2008). On the one hand, the market-based system is typical of the US and the UK where the capital markets are highly developed, the ownership structures are highly dispersed among a large number of small shareholders, and the markets for corporate control are active. In these systems, the capital market typically provides financing and monitoring. The bank-based system, on the other hand, typical of Japan and Germany, is characterized by the important role of banks in financing as well as in corporate governance, a less developed capital market, and many firms with large controlling shareholders (Goergen et al., 2008).

Considering the diversity of financial systems, the crucial question arises about the efficiency of different financial systems. Shleifer and Vishny (1997, p.769) state that the diversity of financial systems leads to the legitimate question which of the financial systems "is the best". Thereby, a great number of discussions center on the comparison between the bank-based and market-based model in terms of efficiency. Although there is no definitive answer to this question, in the eighties and nineties, the common view of academics was that the bank-based system would be better for facilitating economic growth (Hölzl, 2006; Porter, 1992). In recent years the market-based system is regarded as more efficient (Holmström and Kaplan, 2001). Whereas the proponents of the bank-based system highlight the positive functions of banks,[17] the proponents of the market-based system highlight the importance of well-functioning markets.[18] One school of thought in literature is that the question on which system is best depends on the stability of the environment. According to this view, the bank-

[16] Allen and Gale (2000a, pp.21-22) highlight that the crux of analyzing financial systems is an understanding of the major trade-offs of the respective system. They distinguish between five trade-offs namely financial markets and intermediaries, competition and insurance, efficiency and stability, public information but free-riding and private information and no free riding, and external control and autonomy.

[17] Levine (2002, p.2), for instance, discusses *three points* in favor of the bank-based system: *first*, banks' ability to contribute to corporate governance and capital allocation by monitoring firms activity (Diamond, 1984); s*econd*, banks potential to improve efficiency of investments and economic growth of the economy by supporting firms' risk management (cross-sectional, intertemporal, liquidity) (Allen and Gale, 1999); and, *third*, banks supporting function in helping firms to use economies of scale by mobilizing capital (Sirri and Tufano, 1995). Accordingly, Porter (1992) underlines the ability of the bank-based system to provide stability and a long-term growth perspective. At the same time, the bank-based system is sometimes criticized to ultimately cause underperformance by exerting excess protection and thus contributing to management entrenchment and misallocation of resources (Goergen et al., 2008; Hellwig, 2000).

[18] Levine (2002, pp.2-3) states three characteristics that underline the strength of the market-based system. *First*, the profit opportunities by trading in liquid markets enhance the incentives of research firms to monitor firms (Holmstrom and Tirole, 1993). *Second*, the well-functioning markets enhance corporate governance by strengthening the market for corporate control and thus discipline management. Additionally, well-functioning markets help to align interests of managers and shareholders by using stock prices to connect manager remuneration to firm performance (Jensen and Murphy, 1990; Levine, 2002). Third, markets also give firms the opportunity to hedge and managing risk over the market and thus enhancing risk management (Levine, 1997; Obstfeld, 1994). As one of the major shortcomings of the market-based system is the literature usually state that it induce managers to focus too much on the short-term due to the focus on the stock price (Goergen et al., 2008). At the same time, liquid markets and myopic investor behavior can reduce the effectiveness of corporate governance by decreasing the incentives to exert corporate control (Levine, 2002).

based system is better for a static environment with steady and incremental advance in technology and thus innovation due to the trust-based interaction between firms and intermediaries, whereas the market-based system is better for an unstable environment characterized by a fast change in market environment and technology thanks to its flexibility and better capability to finance high-risk projects compared to banks (Hölzl, 2006, p.80).

In recent decades, the environment of finance has changed. Different forces such as globalization and technological changes on the national, as well as on the international scale, have had a great impact on their respective financial systems. This has prompted a debate about the most efficient financial system and a possible convergence of financial systems. Thereby, tendencies have been identified that the two systems seem to adjust to each other (Hölzl, 2006). The line of argument is that if a specific national financial system influences corporate efficiency, then market forces will eventually lead to a convergence of the different systems (Goergen et al., 2008). This convergence view is closely related to the "survival of the fittest" view, which in this sense assumes that in the end, the financial system that survives is the one that can fulfill the major functions at the minimum costs (Hölzl, 2006, p.79). In Germany, a number of deregulations, hostile takeovers (e.g., Mannesmann by Vodafone), and the increasing importance of the markets have heated up the convergence debate (Goergen et al., 2008). Deregulation and financial liberalization have moved on in many countries around the world in recent years. The European Community implemented a strong security regulation to increase market transparency and strengthen the security markets. In the US, the traditional separation between brokerage and banking under the Glass-Steagall Act has been abolished. Moreover, the role of large shareholders (monitoring and control) is supported by deregulating control on institutional investors. Moreover, in Japan, the importance of main bank and cross-shareholding seems to be decreasing. Overall, the recent reforms worldwide seem to indicate a slight movement towards the market-based system. Nevertheless, the full convergence has not taken place so far, and the different financial systems seem to maintain their own specific properties (Hölzl, 2006, pp.67-68).

Many papers also discuss in a critical way the conventional distinction between market-based and bank-based system and the converging debate. For example, Edwards and Fischer (1994) try to show that there is little evidence that supports the monitoring and control role of banks, which is often assumed to be one of the key characteristics of the bank-based system (Barca and Becht, 2001). Additionally, La Porta et al. (2000) argue that the conventional distinction in market-based and bank-based is neither clear nor particularly supportive. As a better alternative, they consider the legal system of the respective country and thus the investor rights, which they state are more suitable for explaining differences in financial systems (La Porta et al., 2000, pp.17-19). According to this view, the efficient functioning of the legal system is the crucial ingredient for both the well-functioning of the markets and intermediaries (Levine, 2002, p.4). Moreover, Allen and Gale (2000a, Chapter 1) discuss the point that financial institutions should not be confused as substitutes for markets. Markets need support and sophistication because of informational (and other) barriers in using them effectively; financial institu-

tions are partially complementary to the markets because one of their crucial functions is the supporting role of the markets. Accordingly, the authors argue that eventually markets and intermediaries have to be considered jointly rather than alternatively (markets versus intermediaries).

Overall, the analysis of financial systems around the world reveals that different countries have different financial systems. The dichotomy of market-based and bank-based systems helps to categorize the different systems around the world. Which of the two systems is more efficient is still an open question as both systems have relative advantages and disadvantages. Some proponents of the convergence view see the evolution of financial systems as an economic process based on efficiency considerations assuming that this economic process will lead towards a single model. Much evidence of the recent decades supports the view that the two systems approach each other. Nonetheless, evidence suggests that full convergence is still not in sight. Moreover, the simple dichotomy of financial systems and the debate of convergence have also their critics. Some claim that financial systems are too complex to be summarized in a simple dichotomy. Furthermore, this categorization might be misleading because at the end of the day, markets and intermediaries are likely to be complements than substitutes. Consequently, the crucial question is markets and intermediaries rather than markets or intermediaries. Additionally, the complexity of financial systems and the specific requirement of this system by the respective country make it more likely that there is not a one fits all system but rather different financial systems will survive alongside one another. This has an important implication for the corporate governance system, too. The structure of the respective financial system is intimately linked to the corporate governance systems. As a corollary, the reasoning for corporate governance systems is likely to be the same as for financial systems; that is, there is no one fits all system.

2.1.4 Developments in German Corporate Governance

The corporate governance system is specific to the respective country and firm. Various factors influence the structure of this system including the legal, cultural, political, and financial system that a company or country is subject to. The German bank-based financial system is often associated with an insider corporate governance system with a weak equity capital market, large controlling shareholders, and a comparatively weak market for corporate control (Franks and Mayer, 1995). The market-based financial system is referred to as an outsider corporate governance system with dispersed ownership, large equity capital market, and a strong market for corporate control (Franks and Mayer, 1995). The "law and finance" literature initiated by La Porta et al. (1998) analyzes different governance systems based on the legal protections for minority shareholders and the developments of capital markets. According to this literature, the German corporate governance system is described as having weak minority shareholder protection and a less developed capital market. One of the most fascinating questions in corporate law is whether the corporate governance systems around the world will ultimately converge toward a single model, in consideration of growing globalization of capital markets, and whether this definitive system will be the Anglo-American model of corporate governance (Gordon, 2000).

These questions are intimately linked to the efficiency question of financial systems discussed in the last subsection 2.1.3. Against this background of changes in the functioning of corporate governance systems, my empirical analysis focuses on one specific mechanism, namely partial stock acquisitions by new institutional investors within the context of the existing corporate governance system in the target firm. Hence, I investigate the functioning of the corporate governance mechanisms.

Various developments in the German economy have had profound impacts on the German corporate governance system. Before World War II the German economy was characterized by a strong (equity) capital market that was among the most developed in the world.[19] After World War II, however, the role of banks increased dramatically and he universal banks took over the funding role of the equity capital market.[20] But, beginning with the reunification, a number of forces pushed the traditional German system towards the Anglo-American system (Nowak, 2001). According to Jürgens and Rupp (2002), these forces can be decomposed into state measures to deregulate the capital market, pressures from institutional investors (especially from the US), reactions to product market alterations, and the internationalization of the production (Jürgens and Rupp, 2002). Initiated by these forces, major changes in statutory regulations, the introduction of new codes and the development of stock exchange took place (Goergen et al., 2008), which all had a significant impact on the German corporate governance system (Goergen et al., 2008; Jürgens and Rupp, 2002; Nowak, 2001; Paetzmann, 2008).[21] The laws on promotion of the financial markets (1990, 1994, 1998, 2002) were important legal innovations that decisively enhanced and supported the development of the financial markets (Jürgens and Rupp, 2002). For instance the Security Trading Act of 1994, part of the Second Act on Promotion of the Financial Market (1994), deals with insider trading regulations and with disclosures about the ownership structure of companies (Goergen et al., 2008). Further regulations such as the Prospectus Act from 1990, the introduction of ad-hoc disclosure in 1995, and the Corporation Control and Transparency Act from 1998, helped to support the financial market by increasing transparency and heightening investor protection (Nowak, 2001). Mainly driven by both the critiques on the traditional German corporate governance system and the demand from institutional investors, several private initiatives were started: the Deutscher Corporate Governance Kodex (Deutsche Corporate Governance Kodex, henceforth DCGK) was the established result (Goergen et al., 2008; Jürgens and Rupp, 2002). The DCGK also known as the Cromme Code[22] only works under a comply-or-explain regime, but still tries to structure and therewith help the regulatory amendments

[19] For instance, there were as many as 1,200 listed companies on German stock exchanges as opposed to only 600 stocks in the New York Stock Exchange (Nowak, 2001, p.35).
[20] Nowak (2001, p.35) states that according to the study by Ramseyer (1994), the borrowing-to-equity-raise ratio in Germany was $4 to $1 as opposed to 85 cents to $1 in the US which impressively underlines the importance of debt compared to equity market in Germany.
[21] Paetzmann (2008, p.36) discusses recent developments in German corporate governance and summarizes the main reforms.
[22] Hopt (2004) discusses the DCGK more comprehensively and gives a detailed account of the recommendations.

with respect to transparency, duties of the board of directors, incentive-based remuneration, and formation of committees (Goergen et al., 2008).[23]

Three important milestones in supporting the German capital market were the initial public offering of Deutsche Telekom, the cross-border merger of Daimler Benz and Chrysler Corporation, and the hostile takeover of Mannesmann by Vodafone (Goergen et al., 2008; Nowak, 2001). The Deutsche Telekom initial public offering in 1996 and the opening of the Neuer Markt in 1997 marked the beginning of an actual initial public offering boom in Germany and many have seen this event as a crucial step in promoting the German equity capital market (Nowak, 2001, p.42). The listing of Daimler-Benz AG on the New York Stock Exchange in 1993 injected American-style corporate governance into a German corporation because of the size and importance of this business transaction (Goergen et al., 2008). Gordon (2000) discusses the Deutsche Telekom initial public offering and DaimlerChrysler merger in light of transformation to a shareholder capitalism system and the converging debate of the German corporate governance systems. He highlights that these transactions are two symbolic events against these financial transformations and debates. The hostile takeover by Mannesmann was not only the largest but also the only one in post-World War II Germany (Goergen et al., 2008). This might be seen as an important transaction for the market for corporate control in Germany. Moreover, important regulations with regard to the takeover market were the Takeover Act from 2002 and the Takeover Code from 1995 (Nowak, 2001).

Another important component of the German insider system was the complex cross- shareholdings system. The amendments of the capital gains tax in 2002 constitute a major step towards unraveling the system of cross-shareholdings and large ownership concentration in German firms, which is also referred to as "Deutschland AG" (Jürgens and Rupp, 2002, p.2). The investment of private equity firms and hedge funds in public equity started in the late nineties, which coincides with the unraveling of cross-shareholdings. Though these two events could be coincidental, they may also be triggered by new profit opportunities in German public equity as a result of corporate governance inefficiencies following the demise of the Deutschland AG (Achleitner et al., 2010b, p.3).

Overall, the developments in the financial markets have been the main drivers for amendments in corporate governance system. In the typical German corporate governance system, characterized by the dominant role of banks in supervisory boards and company finance in a complex system of cross-shareholdings, the equity capital market tended to play a relatively minor role with respect to private savings and company financing (Jürgens and Rupp, 2002). While in recent years the corporate governance system was strongly influenced by major regulatory alterations (Jürgens and Rupp, 2002), another important factor in the German system might be shareholder activism by hedge fund and private equity firms. Two prominent cases are the TCI and Deutsche Börse case (Sudarsanam and Broadhurst, 2010) and the minority acquisition of Blackstone in Deutsche Telekom (Kaserer et al.,

[23] One of the members of the DCGK governmental commission was Axel von Werder, Professor at Technische Universität Berlin. He has published some of the main works regarding this topic, e.g., Werder (2001), and is director of the Berlin Center of Corporate Governance. A comprehensive overview about DCGK and about literature can be found on the webpage of Berlin Center of Corporate Governance: http://www.bvvg-tu-berlin.de.

2007). These new institutional investors can be seen as new types of shareholder activists (Gillan and Starks, 2007, p.55) that might have the potential to serve as important engines for the efficiency of the corporate governance system. Especially after the unraveling of the Deutschland AG, German public equity might have been an attractive target for these kinds of investors.

2.2 ATTITUDES TOWARDS CORPORATE GOVERNANCE PROBLEMS—ANALYTICAL ASPECTS

This section aims to describe the important theoretical concepts used in my investigation, which are necessary to establish a vantage point on the research question. To begin with, this section sets up the theoretical framework based on agency theory and explains the scope of my dissertation on the corporate governance problem (Subsection 2.2.1). Thereby, the economic approach to corporate governance is discussed. This approach is the conceptual framework applied in my empirical investigation that examines the agency costs and corporate governance problems of the public corporation.[24] Then, the major mechanisms that help to mitigate the agency problem emerging through the separation of ownership and control are investigated. These mechanisms are categorized into internal (Subsection 2.2.2) and external mechanisms (Subsection 2.2.3). Afterwards, this section focuses on partial stock acquisitions, which build a bridge between internal and external corporate governance mechanisms and is the center of interest in my empirical investigation (Subsection 2.2.4). Finally, this section ends by discussing the importance of the efficient market hypothesis for my examination (Subsection 2.2.5).

2.2.1 Economic Approach to Corporate Governance

The study of the agency conflict in public corporations has been influenced by the economic approach to corporate governance, which is today the most dominant theory in this research field.[25] This conflict fits well into the principal-agent paradigm. Jensen and Meckling's (1976) treatise on the theory of the firm is often cited as the seminal work on this type of corporate governance problem (see Subsection 2.1.2). According to this school of thought, corporate governance deals with agency problems arising from asymmetric information within a public corporation, where the decision-making process is separated from ownership. The remainder of this subsection outlines why corporate governance does matter in public corporations and how I conceptualize corporate governance mechanisms. My dissertation focuses on partial stock acquisitions, which can be understood as a synthesis of two corporate govern-

[24] This view it is the dominant view in economics on corporate governance, even though it might be narrow (Tirole, 2006, p.16). It is often criticized for being too narrow and it is claimed that it solely focuses on internalizing how to ensure managers act in the best interest of the shareholders while neglecting the externalities that their decisions impose on other stakeholders (Tirole, 2006, Chapter 1). Proponents of the agency approach usually do not disagree with the goals of the proponents of the stakeholder approach (e.g., maximize the social welfare) but rather with the ways to achieve these goals (Tirole, 2006, p.57). Hence, the question is on the "how to implement shareholder value than about its legitimacy" (Tirole, 2001, p.2).

[25] See for instance Learmount (2002).

ance mechanisms, namely monitoring and control by large shareholders and by market for (partially) corporate control (Brav et al., 2008, pp.1773-1774).

Indeed, the information asymmetry between managers and shareholders in the public corporation is a source of the problem which is modeled as an principal-agent problem in the agency theory (Milgrom and Roberts, 1992, Chapter 9).[26] The agency relationship describes the contractual relationship between a principal and agent whereby the former one delegates some decision-making authority to the latter one who completes some services on the principal's behalf. The (profit) outcome is stochastic and depends on both the agent's effort dedicated to the performance of the service (which is costly for the agent) as well as the value of a random variable (e.g., demand of customers, general economic conditions, and climate). Both, the agent and principal are assumed to be self-interested and utility maximizing[27] in their behavior and this implies almost inevitably a conflict of interest in any cooperative endeavor, which leads to agency costs (Jensen and Meckling, 1976). These costs arise from the presence of moral hazard and adverse selection problems under asymmetric information and consist of monitoring costs, bonding costs and residual loss (Jensen and Meckling, 1976).[28] While adverse selection (Akerlof, 1970) deals with information problems of contractual parties before the completion of a contract (hidden information),[29] moral hazard deals with information problems after the contract formation (hidden actions).[30] Solutions to the adverse selection problems are for instance signaling and screening whereas solutions to the moral hazard problems include the following: writing incentive-based contracts and/or having efficient monitoring and control structures. There are various ways in which managers do not act in the best interest of the owner—such as insufficient effort, extravagant investments, entrenchment strategies and self-dealing all kinds of moral hazard—all of

[26] One of the main propositions of the proponents of the agency approach is that the characteristic of the residual risk-bearer differentiate various organizations and helps to explain the survival of specific organizational forms in specific business activities. In this sense, the corporation is particular because it has unrestricted residual claims leading to an efficiency of risk bearing by allowing virtually anybody to hold the residual claims (Fama and Jensen, 1983b). Moreover, in the nexus of contracts view of the firm, the shareholder is only one that has residual income whereby all other parties (e.g., workers, suppliers, creditors) have contractual incomes (Learmount, 2002, p.3). Accordingly, the position as residual-risk bearer and not their position as owners of one factor of production (capital) justify the pre-eminent position of the shareholders. Hence, from this point of view, it is important to distinguish between ownership of the firm and thus all factors of production in the firm and ownership of capital. Thereby from the agency perspective the latter one is the only relevant concept (Fama, 1980).

[27] In this context, Jensen (2000, p.5) discusses that the proposition of self-interested and utility maximizing agent is sometimes confused with agents who have no altruistic desire. This is not the case, because it is simply a no-perfect agent proposition that assumes there is a conflict of interest because people will not entirely act in the interest of others, which ultimately leads to conflict of interest in any cooperative behavior.

[28] The monitoring costs by the principal are costs arising from monitoring activity to mitigating the activity that are not in the interest of the principal. The bonding costs are the costs that are borne by the agent to compensate the principal for the agent's harming action or resources expended to guarantee no harming actions. The additional costs besides the monitoring and bonding costs that arise are due to the conflict of interest between agent and principal, and are termed residual loss. The magnitude of the agency costs depends on the specific company and is influenced by different factors such as preference of the manager, costs of monitoring, costs of bonding activities, ease the manager can follow it self-maximizing behavior that is opposed to that of the principal. Furthermore the costs of measuring and evaluating performance of the managers, managing labor market, product market and capital market will influence the agency costs of the specific company (Fama and Jensen, 1983b, pp.328-29).

[29] Hidden information in this context means that even if the behavior is observable, the principal cannot control whether the behavior of the agent is best effort because there is asymmetric information regarding the information input for the agent's decision (Macho-Stadler and Pérez-Castrillo, 1997, Chapter 1).

[30] Hidden action means the principal cannot observe the effort of the agent due to asymmetric information (Macho-Stadler and Pérez-Castrillo, 1997, Chapter 1).

which are detrimental to the firm (Tirole, 2006, pp.16-17).[31] As a result of the agency problem investors will be reluctant to provide funds (Shleifer and Vishny, 1997), which might explain for instance why external financing is typically more costly than internal financing (Myers and Majluf, 1984).

Hart (1995) explains why a corporate governance framework which is based on asymmetric information needs *two* necessary conditions to make the governance structure relevant in an organization: the *first* condition is that there are agency problems inherent in the principal-agent relationship of a corporation; the *second* condition is that the writing and enforcement of contracts entails costs. Thus, agency problems are not resolvable by writing complete contracts because in general it is unfeasible to write complete contracts. Incomplete contracts ultimately imply that there are residual rights of control because not all eventualities are specified by means of contracts. Because principal and agent have (at least partially) conflicting interests and the agent maximizes his own utility, it is important who holds the rights of control. The governance structure is then in place to allocate the residual rights of control over the firm's nonhuman assets (Hart, 1995, p.680).[32] According to Hart (1995, p.680) governance structure is "a mechanism for making decisions that have not been specified in the initial contract". Generally, there are three ways to mitigate the corporate governance problem, namely the bonding solution, monitoring solution and incentive solution (Denis, 2001). These approaches to govern the corporation can be partitioned into the "stick approach" (bonding solution, monitoring solution) and the "carrot approach" (incentive solution) (Denis, 2001, p.196). The stick approach describes the different monitoring and bonding mechanisms, which help to mitigate the conflict of interest and incomplete contract by inducing management to act in the interest of the shareholders. By using the carrot approach one tries to link the salary of the manager's accomplishments and thus tries to give the manager higher incentives to act in the best interest of shareholders. Based on these approaches one can derive various corporate governance mechanisms that provide checks and balances on managerial behavior.

Even though there is no definite corporate governance system academics agree upon, a system of corporate governance mechanisms can be conceptualized into three internal mechanisms (Subsection 2.2.2) and three external mechanisms (Subsection 2.2.3) as depicted in *Figure 2.1*. My classification is a synthesis of prevailing views in the literature, relying fundamentally on the work of Jensen (1993) (1993), Holmstrom and Tirole (1989), Denis (2001), Goergen et al. (2008), and Gillan (2006). Following this distinction, I classify supervisory board, remuneration and capital structure under the internal mechanisms classification; whereas I categorize capital market, competition and regulatory system under the external mechanisms, as illustrated in *Figure 2.1*. The focus in my analysis is on partial stock acquisition (Subsection 2.2.4).

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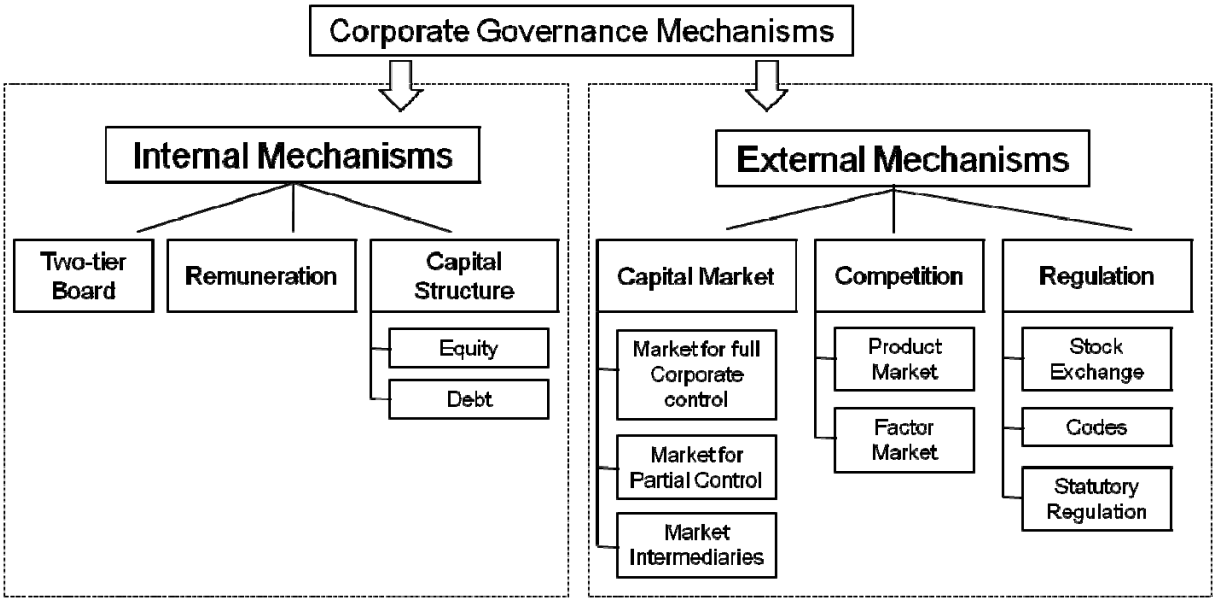
[31] Tirole (2006, pp.16-18) differentiate between *four* different categories of moral hazard. The *first* category is insufficient effort, meaning opportunistic allocation of working hours to various responsibilities. The *second* is extravagant investments, which means that management is doing direct and indirect investments in projects that are detrimental to shareholders. The *third* is entrenchment strategies, referring to investments with the intention of securing and entrenching their leading role. The *fourth* is self-dealing, meaning that management extracts private benefits at the costs of shareholders (e.g., private jet).

[32] The efficient allocation of the residual control rights is treated by the theory of ownership (Shleifer and Vishny, 1997).

Figure 2.1: Taxonomy of Corporate Governance Mechanisms



Source: Following Jensen (1993) (1993), Holmstrom and Tirole (1989), Denis (2001), Goergen et al. (2008), and Gillan (2006).

At this point, I should mention that there is at least one caveat to this concept. The structuring of corporate governance mechanisms as seen in *Figure 2.1* is an analytical tool to capture the corporate governance system, which is in reality is characterized by a complex and intertwining accumulation from different, interconnected provisions (Kim and Nofsinger, 2007, p.7). Corporate governance encompasses not only "legal control but also de facto control of corporations" (Farrar, 2005, p.4) and thus makes it complicated to grasp conceptually because of the various different provisions at work. Moreover, there is no standard classification on how to conceptualize the corporate governance system and hence the presentation of these different mechanisms in *Figure 2.1* is rather subjective and only presents the viewpoint in my dissertation. Moreover, the taxonomy of corporate governance mechanisms in *Figure 2.1*, of course, simplifies the real governance system for instance with respect to the interaction between the various mechanisms. The majority of literature has concentrated on the substitutability rather than complementarity of corporate governance mechanisms, as discussed by Ward et al. (2009). Consistent with this established practice, in my analysis I make the assumption that the various governance mechanisms operate as (imperfect) substitutes (Pound, 1992) rather than complements (Rediker and Seth, 1995).[33]

While this subsection has introduced the conceptual framework for the corporate governance problem and system, the next two subsections will outline the three internal and external mechanisms. By doing so, I aim to give the theoretical reasoning for the respective mechanism and give a brief insight into this mechanism. For a comprehensive literature review of corporate governance see

[33] Substitutability, on the one hand, means that one mechanism can substitute another without effecting the overall effectivity of the corporate governance system (Cremers and Nair, 2005; Ward et al., 2009). Complementarity, on the other hand, implies that the mechanisms are not independent of each other but rather dependent in a way that the functionality of one mechanism is complemented by the effectiveness of another mechanism.

Shleifer and Vishny (1997), Denis (2001), Barca and Becht (2001), Becht et al. (2005), and Gillan (2006). Goergen et al. (2008) provides a good introduction to corporate governance in Germany.

2.2.2 Internal Corporate Governance Mechanisms

This subsection discusses three internal corporate governance mechanisms namely supervisory board, remuneration, and capital structure. The respective mechanisms are framed from the perspective of conducting my empirical analysis in Germany; and, thus at each mechanism I start by outlining the general concept for this mechanism and then elaborate how this specific mechanism plays out in the German corporate governance system. For a comprehensive overview of the respective mechanism, I refer to literature reviews or other germane references.[34]

The *first* internal control mechanism I discuss is the supervisory board. The board of directors is at the top of the publicly traded company's hierarchy and in principle is the first channel to solve the corporate governance problem emerging from separation of ownership and control (Allen and Gale, 2000a, Chapter 4; Kim and Nofsinger, 2007, Chapter 4). Contrary to most of the Western economies, Germany has a two-tier rather than a one-tier board structure (Goergen et al., 2008). Accordingly, the board is composed of a management board (Vorstand) and a supervisory board (Aufsichtsrat) as opposed to a one-tier, one-board system consisting of dependent (executive) and independent (non-executive) directors (Jungmann, 2006). Moreover, the German model of co-determination is a special feature of German corporate governance, which requires half of the supervisory board members to be worker representatives (Hopt and Leyens, 2004). It has a long history and is unique in its form. It was founded at the end of World War II but its origin dates back to 1891 when the law on entrepreneurial activities (Gewerbeordnung) facilitated the establishment of workers' councils on a voluntarily basis. The Co-determination Act (Mitbestimmungsgesetz) of 1976 is currently the most influential legislation and applies generally to all companies in Germany with a workforce of more than 2000 employees (Allen and Gale, 2000b, p.4).

The regulations of the Stock Corporation Act of 1965 (Aktiengesetz, henceforth AktG) constitute most of the responsibilities, which should be conducted by the three organs in the German joint-stock company, namely the management board, the supervisory board, and the annual general meeting. The management is in charge to conduct the firm's business (§71 I AktG) whereby the supervisory board's main task is to supervise the activity of the firm's management (§111 I AktG). The general annual meeting confers shareholders to vote on some affairs of the company according to §119I No.1-8 AktG

[34] My dissertation was submitted in May 2011, and this section was drafted and finished in December 2010. Hence, the discussion initiated in the Green Paper on corporate governance by the European Commission (European Commission, 2011) in April 2011 could not be discussed. See Welge and Eulerich (2012, Chapter 3) for further information on these newest developments, which became complete after I had submitted my dissertation.

such as appointing the shareholder representatives in the supervisory board.[35] The precise role of the supervisory board is less clear compared to the management board, which simply is in charge of running the firm's business (Hopt and Leyens, 2004; Werder, 2008, Chapter 2). Nonetheless, the supervisory board is in charge of appointing, overseeing and setting the compensation of the management board members. The main difference between the one-tier and two-tier systems is that in the two-tier system oversight responsibility is delegated to the supervisory board members whereas in the one-tier system control is an additional task of the board itself (Andreas et al., 2010). German corporations are required by law to have a two-tier board structure independent of the size or listing according to the German Stock Corporation Act (AktG) of 1965 (Hopt and Leyens, 2004). The composition of the supervisory board generally depends on the size of the firm[36] and on whether the company is under the jurisdiction of any industry-specific special regulations (such as would be the case for the steel and coal sector). Additionally, the number of supervisory board members depends on the number of employees (§7 I MitbestG). A shareholder representative usually is the chairman of the supervisory board who has the casting vote in the event of a stalemate. Accordingly, shareholders have eventually the ultimate control (Allen and Gale, 2000b; Goergen et al., 2008).[37]

The question of why boards exist could be easily answered by simply stating that they are required by law (Hermalin and Weisbach, 2003, p.3). However, law requires this organ because it has a crucial function and helps to secure the rights of owners. Thus, a more legitimate and sensible explanation is that the board of directors is crucial for organizations to mitigate inherent governance problems, which are part of any publicly traded company (Hermalin and Weisbach, 2003, pp.3-4). Nevertheless, supervisory board members are only delegated monitors and thus not only enhance but at the same time also introduce further problems in the corporate governance system by creating another agency conflict namely between supervisory board members and shareholders (Jensen, 1993). Even though from a theoretical perspective the board might be effective, the empirical findings with respect to the two-tiered board are mixed (Becht et al., 2005). Adams et al. (2009), Hermalin and Weisbach (2003), and John and Senbet (1998) conduct a comprehensive survey of this literature. Denis (2001) summarizes the three primary questions of this strain of research, namely the relationship between board characteristics and profitability, the link between board characteristics and observable board actions, and drivers of board structure and their evolution over time. In the German two-tier system the effectiveness of the supervisory board (du Plessis et al., 2007) and labor co-determination (Goergen et al., 2008; Hopt and Leyens, 2004) received considerable attention in the literature. While Goergen et al.

[35] The annual general meeting gives the shareholders the rights to vote on specific company's affairs (§119I No.1-8 AktG). Some of the issues the annual general meeting decides about—e.g., change of the charter of corporation, capital increase or decrease, affiliation agreement (control/subordination and profit and loss transfer agreement)—require a 75% majority vote. Accordingly, shareholders with voting rights of 25% have a blocking minority (Sperrminorität) because effectively can block such decisions (Krahnen and Elsas, 2003).

[36] The German co-determination law (Mitbestimmungsgesetz) applies to all corporate enterprises (Kapitalgesellschaften) throughout the German economy employing more than 2,000 workers (Allen and Gale, 2000b). If a corporate enterprise employs less than 2,000 but more than 500 employees the German One-Third Participation Act (Drittelbeteiligungsgesetzes) applies, (Boneberg, 2010).

[37] An exemption to the obligation for having a supervisory board with co-determination are companies "that can appeal to the constitutional freedoms of faith and free press (e.g. publishing company Springer)" (Goergen et al., 2008, p.51) .

(2008) briefly review the literature, Jungmann (2006) and Hopt and Leyens (2004) compare the one-tier and two-tier system.

The second internal mechanism I discuss is board members' remuneration. The compensation and ownership of board members is important to solve the inherent governance problems in publicly traded companies (Hart, 1995). Thus it has the potential to strengthen the corporate governance system if designed properly (Tirole, 2006). The standard manager compensation package is categorized into different types of components namely base salary,[38] bonus,[39] and stock-based incentives[40] (Kim and Nofsinger, 2007, Chapter 2; Tirole, 2006, Chapter 1). As already mentioned previously there is a conflict of interest not only between shareholders and managers but also between shareholders and supervisory board members. Hence, incentive based compensation is useful for both organs of the publicly traded company. In fact the supervision of supervisory board members is probably even more difficult than the monitoring of managers (Andreas et al., 2010). Goergen et al. (2008) discuss that incentive-based compensation for supervisory board members gained importance only recently whereas in the past it was not common to connect compensation of supervisory board members to performance (Schwalbach, 2004). From a theoretical perspective, incentive-based remuneration packages help to alleviate the moral hazard problem in management's contracts. After the contract has been signed the effort of the manager is not observable due to asymmetric information and thus has to be benchmarked by some other measure that measures the manager's effort. Moreover, the performance (e.g., sales) of the firm is a random variable depending on the manager's effort. In this case, at least a partial incentive-based compensation is reasonable in this moral hazard situation because a poor, fixed compensation contract would give managers hardly any motivation to work too hard because effort is costly (Macho-Stadler and Pérez-Castrillo, 1997, Chapter 3). Hence, determining the optimal contract has been a great dilemma in the principal-agent literature (Richter and Furubotn, 1996, Chapter 5). The problem is that the managers are assumed to be risk-averse and thus there is a trade-off between incentive and risk sharing. As a result, sensitive compensation schemes with respect to performance measures (e.g., realized profits) give the manager "high-powered" incentives but at the same time expose mangers to high risks, and vice versa. Hence, optimal contracts must balance both the efficiency of the contract in terms of high-powered incentives and the risk-bearing of managers (Hart, 1995).

[38] The base salary is a specific fix annual salary and is an important part of the manager's remuneration package. The specific amount is usually determined by comparing other comparable manager base salaries. The general pattern of the base salary of managers suggests that it is increasing steadily driven by the claim of managers to get competitive salaries. Additionally, it is noticeable that company's characteristics (e.g., industry and size) rather than characteristics of the manager (e.g., age and experience) drive the level of the base salary (Kim and Nofsinger, 2007, Chapter 2).

[39] The bonus salary is a variable and risky component of the remuneration package and is usually linked to accounting-based benchmark figures (e.g., EBIT, EPS) or hybrid measures as economic value added. It tries to evaluate the manager's performance from an opportunity costs perspective of the deployed capital. While the cash payment increases with measured performance, it is usually capped to a specific maximum bounding the bonus (Kim and Nofsinger, 2007, Chapter 2). Additionally, this part of the compensation package usually can be further divided into bonus plan (short-term, one year) and performance plan (long-term, three to five years) plan whereby the former part is usually much more substantial than the latter one (Tirole, 2006, Chapter 1).

[40] The stock-based incentive component of the remuneration package presents a market-based incentive scheme and offers either company's shares or stock options. The idea behind the market-based incentive scheme is that managers have a strong incentive to lead the firm in a way that the share price increases. Hence, this intends to align interests of owners and managers and thus tries to mitigate the agency problem. In practice, however, this remuneration component has caused furor because it often failed and has had adverse effects on managing behavior (Kim and Nofsinger, 2007, Chapter 2).

Diamond and Verrecchia (1982) and Holmstrom and Tirole (1993), for instance, develop models that show that the structuring of compensation can help to align interests of managers and shareholders by creating contingent compensation through linking compensation to capital markets. Stock-based compensation is not the only way to link managerial compensation to performance; in fact, accounting-based remuneration is also frequently used (Allen and Gale, 2000a, Chapter 4). While it is usually agreed that partial incentive based compensation is reasonable, it is also well known that performance measurement is rather imperfect and engenders complications (Tirole, 2006, Chapter 1).[41] Accounting data is prone to manipulation and fraud, whereby stock data is susceptible to exogenous factors (Tirole, 2006, p.22). Thus, these measures give managers adverse incentives and might be systematically biased. Stock-based compensation does not suffer from the same problem because managers cannot influence the price that easily.[42] However, the stock price suffers from volatility caused among others from the dependency of external factors (Tirole, 2006, Chapter 1). Indeed, the design of an efficient and prudent compensation package is difficult. Gibbons and Murphy (1992) scrutinize optimal compensation contracts and thereby consider career concerns of managers. Incentives are generated explicitly through compensation and implicitly through career concerns. When designing the contract the total incentives (explicitly and implicitly) generate the optimal contract.

The research on executive remuneration focuses on the level and the sensitivity of the salary (Denis, 2001). Core et al. (2003), Murphy (1999), and Jensen et al. (2004) review the US literature associated with compensation of executives and Holderness (2003) with regard to insider ownership. In Germany the debate about appropriate executive compensation (§ 87 (I) AktG) also has generated some heat recently (Ernst et al., 2009; Wolff and Rapp, 2008). Research with respect to remuneration in the German two-tier board system is less comprehensive compared to US research (Andreas et al., 2010). Wolff and Rapp (2008) review empirical literature and summarize three main perspectives of literature on executive compensation in Germany, namely the relationship between executive pay and firm characteristics, performance characteristics, and corporate governance characteristics. Empirical studies with respect to German executive pay are for instance conducted by Wolff and Rapp (2008), Andreas et al. (2010), Sabiwalsky (2010), Schmid (1997), and Elston and Goldberg (2003). In recent years, the CEO payment has increased dramatically around the world. In the United States the CEO payment has increased six-fold between 1980 and 2003, as stated by Gabaix and Landier (2008). Schmidt and Schwalbach (2007) examine the dynamics of CEO remuneration of DAX companies

[41] For instance, benchmark figures to link pay to performance are needed because effort is not directly observable, can be defined differently, and is vulnerable to manipulation (Schmidt and Schwalbach, 2007).

[42] Tirole (2006, pp.22-24) discusses three interesting issues regarding designing executive compensation that are worth mentioning. *First*, the bonus and stock option part of compensation are likely to be complements rather than substitutes because they both combined have the potential to balance the short-term (bonus) and long-term perspective (stock option). *Second*, because virtually any performance measure is a random variable depending on the manager's effort but also on exogenous shocks, it is important to account for that issue in the compensation schemes (e.g., through relative performance measures, or indexing compensation partly to the exogenous variables). *Third*, the difference between stock options and shares (i.e., non-linearity versus linearity of the pay as a function of performance) are important for the design of the contract. The disadvantage of straight stock is that the manager is rewarded even if their performance was poor whereby this is not the case with stock options. On the downside, stock options invite for excessive risk taking (e.g., all-or-nothing behavior) and are less credible (e.g., tendency to none or perverse incentives) when options are out-of-the-money.

during the period 1987 and 2005 and reports an average growth of 445% over the whole period and state that this is a similar growth rate as in the US but on an essentially lower level. This trend of higher compensation along with stronger emphasis on performance linkages has led to a controversial debate about executive compensation (Tirole, 2006, pp.24-25) not only in academia but also in the marketplace (as well as among regulators) (Ferrarini et al., 2004).

The *third* internal corporate governance mechanism I discuss is the firm's capital structure. The capital structure of a firm consists of equity and debt and both have the potential to serve as important corporate governance devices (Gillan, 2006). Generally, large investors (shareholders and creditors) have both an interest to get a return on their investment and thus have the incentive to monitor managers (Shleifer and Vishny, 1997). While I discuss the ability of large shareholders to enhance the corporate governance system in Subsection 2.2.4 in more detail, in the following I mainly focus on the ability of creditors as monitors. Large creditors are another potential mechanism to increase the corporate governance system because they also have the incentives and the power (Shleifer and Vishny, 1997). Their controlling power comes partially from the control rights they obtain in case of bankruptcy and violation of credit agreements by the debtors. Moreover, renegotiation power especially in short-term lending relationships gives creditors further power (Shleifer and Vishny, 1997; Tirole, 2006, Chapter 1). Additionally, the steady stream of interest payments for the firm because of their liabilities can serve as a (self-) disciplining device for management because it reduces free cash flow and forces them to fulfill regular credit payments (Grossman and Hart, 1982; Jensen, 1986).

Equity and debt also introduce drawbacks (Shleifer and Vishny, 1997). Large investors (shareholders and creditors) may consume private benefits at the costs of the remaining shareholders (Holderness, 2003; Shleifer and Vishny, 1997). Moreover, shareholders and creditors are likely to have different attitudes towards risky projects (Milgrom and Roberts, 1992, Chapter 15). Additionally, debt exposes firms to costs of liquidity and bankruptcy costs (Tirole, 2006, pp.51-53). Furthermore, the argument that debt is an important corporate governance mechanism is often mitigated by the importance of internal financing in large companies and thus the ability to easily meet the credit payments (Allen and Gale, 2000a). Traditionally the minority shareholder protection and the market for corporate control are weak in the German corporate governance system, whereas the equity ownership is concentrated (La Porta et al., 1999). The first two features suggest that large shareholders may indeed create value by enhancing the existing corporate governance system. The third feature implies that in German publicly traded companies there is not only a conflict of interest between managers and shareholders (Agency Problem I) but also between controlling shareholders and minority shareholders (Agency Problem II) (Villalonga and Amit, 2006). Hence, large shareholders may reduce agency costs stemming from not only separation of ownership and control but also from large controlling shareholders that may extract private benefits at the expense of the remaining shareholders (Achleitner et al., 2010b). Additionally, the German system is usually considered a bank-based financial system because of the relative power of creditors, especially banks (Goergen et al.,

2008). The effectiveness of banks as a corporate governance device is still ambiguous (Edwards and Nibler, 2000; Meyer and Prilmeier, 2006).

Again, under the categorization of Germany as a bank-based financial system, banks hold significant legal rights, which give them substantial power regarding the companies to which they are related (Goergen et al., 2008; Shleifer and Vishny, 1997). This power comes from a bank's special relationship with its lenders, e.g., banks who hold equity in firms are often also the main lenders to these firms (Edwards and Fischer, 1994). Additionally, banks often exercise proxy votes for their customers (for whom their deposit shares), which gives them further control rights without equivalent cash flow rights (Allen and Gale, 2000a; Goergen et al., 2008). Because of this close and often long run lending relationships between banks and firms, this system is also called "Hausbanksystem" (Allen and Gale, 2000a, p.105). Furthermore, the power of banks is often strengthened through their membership in the supervisory board of the firm to which they are lending money (Schmidt, 2003; Shleifer and Vishny, 1997). Membership in the supervisory board gives banks access to important and sensitive information about the company, which leads to additional advantages (Schmidt, 2003). Furthermore, the power of banks in Germany is significant because the legal environment is beneficial to lenders (Shleifer and Vishny, 1997). A review of the literature in association with large creditors is provided by Shleifer and Vishny (1997) and with a focus on German corporate governance by Goergen et al. (2008). The role of banks in corporate governance is reviewed by Degryse et al. (2007) and with a focus on Germany by Edwards and Nibler (2000).

This subsection has outlined three internal corporate governance mechanisms. *First*, I have discussed the supervisory board of German publicly listed corporations, which is distinctively different from one-tier board systems such as those deployed in UK or US corporations. *Second*, I have touched on the remuneration of board members. Compensation schemes are important to solve the inherent moral hazard problem. At the same time, incentive-based compensation is susceptible to adverse effects if designed poorly. *Third*, I have dwelt on the capital structure of a firm, which consists of equity and debt. Both have the potential to serve as important corporate governance devices but also introduce drawbacks.

2.2.3 External Corporate Governance Mechanisms

This subsection focuses on three external mechanisms of corporate governance: capital markets, product and factor market competition, and the regulatory system. My aim is to be selective with respect to my research question under scrutiny. While discussing the respective mechanisms, I apply the same structure as in the previous subsection and thus start at each mechanism by outlining the general concept for this mechanism and then elaborate how this specific mechanism plays out in the German corporate governance system.

The *first* external corporate governance mechanism that I discuss is the capital market. This mechanism comprises monitoring by the market for full control, the market for partial control, and monitor-

ing by capital market intermediaries. One way to understand the capital market as a monitoring device is to follow Tirole's (2006, Chapter 8) conceptualization and distinguish two forms of monitoring in capital market, namely active and speculative monitoring, on the basis of two types of information used for monitoring, namely prospective and retrospective information (Tirole, 2006, Chapter 8). Active monitoring is based on prospective information. It is forward-looking and is about interfering with the management in order to augment the shareholder's value or investor's claims and is intimately associated with control rights. Active monitoring is implemented by incumbent (e.g., board of directors, large shareholders, and creditors) and entrant monitors (e.g., raiders, large block acquirers) execute this type of monitoring (Tirole, 2006, p.338). While incumbent monitors are internal corporate governance mechanisms, entrant monitors are external. Speculative monitoring is based on retrospective information. It is to a degree backward-looking and does not attempt to enhance shareholder's value. In fact, speculative monitors rather try to evaluate the firm at a specific moment in time to give a judgment on the value. Hence, speculative monitoring is not related to the exercise of control rights but rather to continuous monitoring by market participants such as stock market analysts and credit rating agencies. Announcements by these types of speculative monitors can have a substantial impact on the respective firm and thus serve as corporate governance mechanism in several ways. For instance speculative monitoring makes share prices more informative and thus gives management direct incentives to perform well by indirectly revealing and subsequently penalizing poor performance by management. Moreover, speculative monitoring by short-term creditors, rating agencies or investment banks also helps to discipline management by granting poorly performing firms less liquidity. Furthermore, auditing firms help to provide valuable monitoring by certifying the corporations' financial reports (Tirole, 2006, p.28). For this type of monitoring, investors mainly collect speculative information.

The market for corporate control (Manne, 1965) is crucial for the efficiency of the capitalist economy and provides active monitoring according to Tirole's (2006) conceptualization introduced above. The market for corporate control can function in three ways: proxy contests, a friendly merger, and a hostile takeover (Allen and Gale, 2000a, Chapter 4) . Monitoring by the market for corporate control disciplines management in many ways, e.g., through the threat of a hostile takeover and replacing management, proxy contests, and through distribution of bad publicity. Many argue that the pressure that stems from the market for corporate control leads, on average, to an enhancement of the management performance and therewith to an increase of shareholder value (Bethel et al., 1998; Butz, 1994; Morck et al., 1989; Shleifer and Vishny, 1986). A comprehensive overview of the takeover literature is given by Holmstrom and Kaplan (2001) and Shleifer and Vishny (1997). Berglöf et al. (2003) discuss European takeover regulations and the importance of corporate restructuring for ex post and ex ante corporate governance efficiency. While the market for corporate control and hostile takeovers is one of the central external corporate governance control mechanisms in the US and UK (Allen and Gordon, 2000), in Germany little evidence exists of a functioning market for corporate control (Franks

and Mayer, 1998; Goergen et al., 2008; Köke, 2004). Franks and Mayer (2001, p.955) claim that even though there is only weak evidence for an active market for full control in Germany, there is evidence for an active market for partial control. Indeed, Goergen et al. (2008) put forwards that the market for partial control may function as a substitute for the market for (full) control. The literature is divided on this issue, with some academics supporting the view and others not supporting this view (e.g., Franks and Mayer, 2001; Goergen and Renneboog, 2003; Köke, 2002b; Köke, 2004). Jenkinson and Ljungqvist (2001, p.432) conclude in their paper that the market for shares (e.g., market for partial control) is becoming more active partially due to regulatory amendments. I discuss partial stock acquisition and their potential to be a useful corporate governance mechanism in Subsection 2.2.4. Overall, it is important to see that for publicly traded companies the market for full as well as for partial control builds a bridge between external monitoring by potential investors and internal monitoring by incumbent investors and thus helps to discipline managers. As a result, both the market for full control and the market for partial control have potential to serve as an important external corporate governance mechanism.

Monitoring by capital market intermediaries is another capital market mechanism to monitor and control management besides the above mentioned market for full and partial control. This type of monitoring is implemented by investment banks, security analysts, credit rating agencies, and auditing firms and provides speculative monitoring according to Tirole's (2006) conceptualization. Even though these control mechanisms are not conventional for the common corporate governance framework (Kim and Nofsinger, 2007, Chapters 3 and 5), Tirole (2006, pp.27-28) explains why these monitors help to discipline management. Generally, the efficient allocation of resources in the capital market economy is a driving factor for the well-being of the economy. Information and incentive problems, however, hamper this allocation between investors and firms (Healy and Palepu, 2001); that is, because firms usually have better information than investors (asymmetric information), and once the money is in the hand of the firms, the managers (e.g., the agent) typically have an incentive to maximize their own wealth at the expense of the investors (agency problem) (Healy and Palepu, 2001). A firm's financial disclosure and institutions (e.g., auditors, investment banks, financial analysts, credit rating agencies) that verify and monitor the disclosure between firms and investors play an important role in alleviating this so called "lemon problem" (Akerlof, 1970) in the market economy. Other well-known solutions to the lemon problem for instance are optimal contracting and regulation (Healy and Palepu, 2001). Additionally, financial reporting has been useful in facilitating contracting (Watts and Zimmerman, 1990). Thus, verifying and monitoring financial reports and debt contracts have potential also in helping to mitigate the moral hazard problems by facilitating incentive-based remuneration schemes or debt contracts (Watts, 2003).

The *second* external corporate governance mechanism touches upon product and factor market competition. Since Adam Smith's publication of the Wealth of Nations (1776), it has been argued that

competition is the main driver of economic efficiency.[43] Hence, this provision might help to discipline management to use resources (e.g., labour, office space, and other resources) economically and thereby pushes the corporate governance system towards efficiency. Other scholars argue that while a competitive environment is crucial to efficiency, it plays a less important role in corporate governance. They argue that competition alone cannot govern the managers, and if it does, it is all too late because this mechanism is too slow and too blunt to change managers behaviour in a timely fashion (Jensen, 1993). Allen and Gale (2000b) give an overview over competition and its importance for corporate governance. Further theoretical treatment on competition, incentives and director remuneration is provided by Aggarwal and Samwick (1999), Hermalin (1992), and Kedia (1998). Goergen et al. (2008) review German literature with respect to product market competition.

Alchian (1950) and Stigler (1958) point out that product market competition is a powerful device to reduce agency problems between owners and managers (Allen and Gale, 2000a, p.108). Hence, management incentive problems might especially be severe in organizations in less competitive industries. In competitive industries, however, it is argued that forces of competition drive management towards efficiency because otherwise they would not survive (Giroud and Mueller, 2008). Indeed, the quality of management of a firm is certainly not only determined by the governance of the firm but is likely to be heavily influenced also by its competitive environment as well. Hence, product market competition might be an important external governance mechanism (Tirole, 2006, pp.28-29).

Product market competition can influence the managements' effort and quality in several ways. For instance, managers have to perform against a (competitive) benchmark, which makes it more difficult to hide poor performance (e.g., attribute poor performance to bad luck). Moreover, it creates pressure on management and thus reduces the margin for extracting private benefit or shirking (less margin for, e.g., insufficient effort, extravagant investment) due to the risk of losing their job or going bankrupt. At the same time competition may evoke adverse effects such as that market participants start to gamble to beat the market (Tirole, 2006, p.29). Denis (2001, p.207) states that in a competitive environment companies can offer products only at competitive prices if they produce them with a corresponding cost structure including product, factor, and capital costs.[44] Nevertheless, he also states that competitive environment will never be able to substitute an accurate corporate governance structure (Tirole, 2006, pp.28-29). Shleifer and Vishny (1997, p.738) take a similar view and state that competition on the product market is likely to be the most powerful force toward economic efficiency, but is likewise not able to solve the problems emerging from the separation of ownership and control by itself. While competition indeed reduces the margin for corporate malfeasance, it does not stop management from expropriating investors' funds. However, corporate governance on the other side creates mechanisms to prevent investors from being expropriated. Jensen (1993, p.850) also states that com-

[43] Smith (1776, Vol.1, p.165) states, for instance, that "Monopoly […] is a great enemy to good management."

[44] Hence, poor performance of management (e.g., negligence, shirking) might spill over into a poor performance in the product markets of the company because they are not able to offer competitive prices. Simultaneously high costs of capital, e.g., due to inadequate protection of investors, will lead to poor performance in the product markets too. These circumstances can put serious pressure on the company including the risk of financial distress and bankruptcy (Denis, 2001, p.207).

petitive environment (product and factor market) forces management toward efficiency because in a competitive environment companies only survive if they produce efficiently and offer products at competitive prices. He claims, however, that the product and factor market are too slow because they tend to discipline management too late and thus may lead to a waste of resources. Hence, Jensen (1993, p.850) that for a proper use of resources one needs other mechanisms of corporate governance that work efficiently. Gillan (2006, p.391) discusses that competition in the managerial labour market may play an important role in monitoring and control of management. Thereby especially reputation concerns of top executive may have great potential to discipline management. Better performance gives managers better perspectives for the future, which in turn gives managers incentives to perform well. On the other hand, poor performance is likely to be accompanied by a gloomy perspective for the future with regard to getting a position as a CEO or board member at a new firm. Fama (1980) argues that the managerial labour market helps to discipline management and thus can help to mitigate an agency problem.[45] Empirical studies on the executives' labor market focus on the relation between executive turnover, corporate governance, and organizational form—see Gillan (2006) for more on this topic.

Regarding the German market, two recent papers provide evidence on product market competition and corporate governance. Januszewski et al. (2002) scrutinize how far competition in the product market and corporate governance have an impact on productivity growth. They find that product market competition as well as strong ultimate ownership has a positive impact on productivity growth of the respective companies. Additionally, their findings suggest that product market competition and strong ultimate ownership are a complement implying that in the presence of both the effect on productivity growth is intensified. Köke and Renneboog (2005) also analyze product market competition and corporate governance and their impact on total factor productivity growth whereby they focus on German and UK companies. With respect to Germany, their findings suggest that weak product market competition has a negative effect on productivity growth, and that bank debt concentration has a positive impact on productivity growth. Large shareholdings can partially have a positive effect on productivity growth and offset weak competition but only if they are specific blockholders (e.g., banks, insurances, and government).[46]

The *third* external corporate governance mechanism I outline is the regulatory system. The well-functioning of the financial system is impeded by the danger of expropriation of outside investors. The regulatory approach to corporate governance are laws (e.g., business, enterprise and insolvency, security exchange regulations, and criminal law) and their enforcement that help firms to raise funds (La

[45] Gibbons and Murphy (1992) investigate incentive contracts when workers care about their career. Thereby they point out that the right mix of implicit incentives (career concerns) and explicit incentives (remuneration contract) optimize the total incentives.

[46] Giroud and Mueller (2008) examine the relation between performance (e.g., stock return, firm value, operating performance), degree of competition, and corporate governance. They results suggest that corporate governance is particularly important in less competitive industries whereby in competitive industries it is less important. They conclude that it is important that research on corporate governance does not neglect measures of competition because they might help to explain differences in the efficiency of corporate governance structures.

Porta et al., 2000). The regulatory system is perhaps the most basic corporate governance mechanism (Denis, 2001) but at the same time it has an exceptional position because laws and their enforcement provide the framework for the functioning of the capitalist economy. Enforcement, indeed, is crucial and laws themselves are not enough for a well-functioning financial system (Lopez-de-Silanes, 2003). Capitalism is based on private property and free markets to allocate resources. Since market failures are prevailing under asymmetric information a regulatory system is an important precondition for the well-functioning of this economic system (Richter and Furubotn, 1996, Chapter 5). The firm serves as a nexus of contracts between legal entity, the corporation, and the respective stakeholders (Jensen and Meckling, 1976). External financiers provide funds in exchange for certain control rights (Shleifer and Vishny, 1997). The fundamental governance problem is that because of incomplete contracts the managers will end up with residual rights of control, and because of the agency problem between managers and shareholders, managers might expropriate these rights at the expense of shareholders (Hart, 1995). Regulation tries to define laws and requests legislation to enforce them to govern economic reality, and thus tries to solve governance problems. The theory of property rights contends that property rights' structure over resources affect individual incentives and thus influences the way people act in a world of scarcity. Corporate governance, however, is more comprehensive than just regulations and laws because it encompasses not only laws but goes beyond companies' legislation because it depends not only on legal "but also on de facto control" (Farrar, 2005, p.4). Because regulation serves as a framework of capitalism (e.g., enforcement of private property and use of the free-market) it is somehow included (implicitly or explicitly) in any mechanism.

The importance of regulatory systems as a mechanism within the corporate governance framework received relatively little attention from financial economists until recently (Denis, 2001, p.198). Denis and McConnell (2003, pp.4-5) distinguish between two generations of corporate governance research. The first generation generally focuses on a single country's corporate governance system and thereby mainly examines board structure, remuneration, equity ownership, and external control mechanism as important governance mechanisms. However, in this strain of literature regulatory systems as corporate governance mechanism get only very little attention. Jensen (1993, p.850) states even that the legal system is "…far too blunt an instrument…" to deal with corporate governance problems. The second generation of corporate governance research mainly initiated by the paper from La Porta et al. (1998) titled "Law and Finance", claims that the regulatory system is a crucial corporate governance mechanism. Principally, the argument is that the protection and enforcement of investors' rights is the main driving force for the development of corporate governance and corporate finance within a country. This view rests upon the comparative analysis of corporate governance systems around the world including their legal systems. The comparative analysis is crucial because when focusing on one single country subject to one regulatory system all corporations face (more or less) the same legal framework. Accordingly, there is little scope for examining the regulatory systems as a corporate govern-

ance mechanism because it is practically the same across all corporations (Denis and McConnell, 2003; La Porta et al., 1998).[47]

In sum, this subsection has touched upon external corporate governance mechanisms. I have discussed the capital market, which one can decompose into active monitoring by market for partial or full control, and speculative monitoring by capital markets intermediaries such as credit rating agencies, investment banks and auditing firms. Moreover, I have discussed the competition as a second external corporate governance mechanism. Competitive product and factor markets help to discipline management and thus help to force the corporate governance system towards efficiency yet certainly not a sufficient condition for efficiency of the corporate governance system. Finally, I have reviewed regulations as a corporate governance mechanism. This provision, however, has an exceptional position in the corporate governance framework because it provides the framework for promoting the well-functioning of the market economy.

2.2.4 Partial Stock Acquisitions as Governance Mechanism

Partial stock acquisitions build a bridge between the internal (Subsection 2.2.2) and external corporate governance mechanisms (Subsection 2.2.3). While there is no standard definition of partial stock acquisition (Park et al., 2008, p.533), it can be defined as buying a minority block stake in a target company. Minority blocks can be seen as transactions between the two polar extremes of majority (full) block acquisitions and single share acquisitions. Although partial stock acquisitions have potential to play an important role in the target firm's corporate governance system, thus far they have received much less attention in literature than full (majority) acquisitions (Sudarsanam, 1996). The financial operation of a partial stock acquisition makes an acquirer a large shareholder of the target company and thus gives the investor the opportunity to exercise internal control without being hampered by the typical burdens of the external market of corporate control (Akhigbe et al., 2004, p.848). Accordingly, partial stock acquisitions can be understood as a synthesis of two corporate governance mechanisms, namely (internal) monitoring by large shareholders and (external) control by the market for corporate control (Brav et al., 2008, pp.1773-1774).

Partial stock acquisitions are one potential provision to the corporate governance problem. The theory explains that large shareholders can be effective monitors and may help to alleviate the corporate governance problem (Shleifer and Vishny, 1997) as is the case with the capital market (Tirole, 2006, Chapter 1). Shareholder activism, however, is costly, such that it eventually leads to the free-rider problem (Grossman and Hart, 1980). The typical problem is that monitoring and control is costly (e.g., monitoring costs, illiquidity, loss of diversification) and benefits accrue to all shareholders equally (Shleifer and Vishny, 1986), which reduces the incentive of shareholder activism. Particularly in Germany partial stock acquisitions might be important since the market for full control is typically

[47] Franks et al. (2005), for instance, discuss the main alterations in rules relating to disclosure of information in Germany in the last two centuries.

weak and the market of partial control is by some commentators seen as an adequate substitute (Franks and Mayer, 2001, p.955). Furthermore, the role of the capital market as corporate governance mechanism has gained more importance in the last years because of various amendments to the German corporate governance system as discussed in Subsection 2.1.4.

Yet a natural question arises: why are there partial stock acquisitions at all given that a diffused ownership structure is in line with the benefits of diversification, one of the central results of modern financial theory (Bernstein, 1992, Chapter 2). For instance, the crucial upshot of the capital asset pricing model (CAPM) is that every risk-averse stockholder will ultimately hold a fraction of the market portfolio because this broad diversification allows superior risk-return position. Stockholders who hold large shareholding in their portfolio are exposed to avoidable idiosyncratic risk, which gives them an inferior risk-return portfolio which they otherwise could gain by holding the market portfolio (Admati et al., 1994; Huddart, 1993). Moreover, the proposition of the irrelevance of capital structure by Modigliani and Miller (1958) states that the choice of financing (e.g., debt or equity) has no material effects on firm value.[48] However, this proposition only holds if assuming a perfect and frictionless capital market without taxes, information asymmetry and agency costs. Introducing frictions (e.g., agency costs, information asymmetry, taxes) shows that financing indeed matters (Myers, 2001, pp.81-82). Hence, one could think of partial ownership as being a provision against holding too much idiosyncratic risk when measured against a full hostile takeover of a firm that an investor believes is undervalued or poorly managed. Consequently partial stock acquisition allows the investors to obtain the rewards without the full risk of owning the whole company or without having to bear the full cost of getting the firm to be more efficient.

Partial stock acquisitions are a typical result of shareholder activism, portfolio investments, and strategic alliance (Park et al., 2008, p.530). Partial stock acquisitions by strategic investors are acquisitions made to benefit from strategic alliance and comprise merger and acquisitions because of horizontal, vertical, geographical integration or diversification reasons (Allen and Gordon, 2000; Chan et al., 1997). The main reasons for these acquisitions are transaction costs (Williamson, 1975; Williamson, 1985) and economies of scope and scale (Chandler, 1990). Accordingly, the goal is to internalize costs that otherwise accrue when using the market as means of organization (Coase, 1937). Partial stock acquisitions by portfolio investors are typical investments by passive investors such as banks, pension funds, money manager, or other kind of passive investors. They often do not aim to interact with firm's management but rather hold their block for investment purpose only (Park et al., 2008). Partial stock acquisitions by shareholder activists are transactions where the investors actively seek to influence a firm's management and policy. Hence, these kinds of investors are active and undertake monitoring and control functions that are necessary because of the corporate governance problems inherent in public corporations. On the one hand, public corporations have the main

[48] A firm's value is usually assessed by evaluating the present value of a firm's future free cash flows. Therefore, the cash flows have to be discounted by an appropriate cost of capital. For a discussion of various methods applied to evaluate the value of firms, see Brealey et al. (2006), and for a specific consideration of capital costs Kruschwitz and Löffler (2006).

advantage (see Subsection 2.1.1) of efficient risk sharing and easy access of capital (Jensen, 2000). On the other hand, this allows investors to specialize in holding residual risk without having to manage the firm and allows managers to run the firm without bearing the residual risk and providing capital (Wruck, 2008, p.11). This separation of ownership and control, however, leads to severe conflict of interest between managers and shareholders (Jensen and Meckling, 1976). The difference between partial stock acquisitions with an activist drive to acquisitions with strategic or financial purpose is that under the former the investor aims to increase firm value by reducing agency costs while under the latter the investor profits from the value added to the firm by others who monitor the firm. Subsequently to the initial transaction of the partial acquire there is always the option to buy, hold or sell the position.[49] The target firm's management is disciplined not only by the ongoing monitoring and control activities (i.e., activism) of the acquirer but also by the increased likelihood of a full takeover because of its presence (Akhigbe et al., 2007), gains on the toehold (Grossman and Hart, 1980; Shleifer and Vishny, 1986), mitigation of the free-rider problem (Grossman and Hart, 1980; Hirshleifer and Titman, 1990), decline of management resistance in takeover (Betton and Eckbo, 2000; Jennings and Mazzeo, 1993), and deterrent of rival bidders (Betton and Eckbo, 2000; Stulz et al., 1990).

While partial stock acquisitions can be certainly understood as corporate control acquisitions, they differ from full (majority) control acquisitions. Spencer et al. (1998, p.426) states four reasons why partial stock acquisitions arise compared to full control acquisitions: *first*, these acquisitions arise because of insufficient funds to acquire full control in the target firm immediately; *second*, investors often avoid buying a full control position straightaway because of the uncertainty over the target's future cash flows; *third*, partial control allows exerting management control without the risk of demoralizing the incumbent management; and, *fourth*, full control is avoided because a firm wants to achieve other strategic goals such as vertical integration or strategic positioning with another complementary firm. Akhigbe et al. (2004) points out that partial stock acquisitions allow investors to become large shareholders without being impaired by the usual drawbacks of the market for corporate control. Moreover, while Burkart et al. (1998) highlight that partial stock acquisitions have some advantage in overcoming free-rider problems, Bebchuk (1999) suggests that partial stock acquisitions may create problems relating to the extraction of private benefit problems. Overall, while partial stock acquisitions certainly have the potential to enhance target firm's corporate governance system, the question whether this potential is met has to be answered with empirical evidence.

[49] The initial investment is also called toehold acquisition (Choi, 1991, p.391).

The valuation consequences of partial stock acquisition can be decomposed in at least three components according to Choi (1991) namely undervaluation hypothesis, control transfer hypothesis and anticipated takeover bid hypothesis.[50]

The undervaluation hypothesis states that there is a positive announcement effect because of the redistribution of information about the fair value of the firm. To put it differently, the investor buys undervalued assets and distributes new information about the true value of the firm. The undervaluation could either be explained by the superior ability of the investor to evaluate publicly available information or by the possibility that the potential investor may possess non-public information about the target company (Holderness and Sheehan, 1985).

The control transfer hypothesis implies that the valuation effect comes from better monitoring and control of management in the target firm by the partial acquirer who enhances the target firm's corporate governance system in one of two ways. *First*, the partial acquirer may reduce agency costs stemming from separation of ownership and control between managers and shareholders (Agency Problem I). *Second*, the partial acquirer may reduce agency cost arising from misaligned interest between large controlling shareholders and minority shareholders (Agency Problem II) (Villalonga and Amit, 2006). Particularly, in the German corporate governance system (traditionally characterized by weak minority shareholder protection, weak market for corporate control and large controlling shareholders) the second agency conflict between large controlling shareholders and minority shareholders may play an important role. As a result, partial stock acquisitions may create value by enhancing the monitoring and control structure by addressing both Agency Problem I and Agency Problem II within the context of the control takeover hypothesis (Achleitner et al., 2010b).

The anticipated takeover bid hypotheses attributes the positive announcement effect as a wealth effect associated with a possible takeover of the target company at some point in the future. Some authors subsume this hypothesis under the control transfer hypothesis because one could interpret the takeover as one of many corporate governance enhancement or control activities that the investor might consider (Park et al., 2008).

Furthermore, it is important to distinguish between factors from an ex ante and ex post perspective that drive the valuation effect of partial stock acquisitions (Akhigbe et al., 2004). On the one hand, ex post factors are for instance management turnover, proxy fights, eventual takeovers, or other monitoring and control activities subsequently to the initial investment by the partial acquirer (Choi, 1991). Generally, while ex post factors are all shareholder activism activities of the acquirer after the initial partial stock acquisition, ex ante factors are control conditions in the target firm prior to the

[50] The use of the terms is not consistent: various authors use slightly different notations to describe these three hypotheses. On top of that, some authors differentiate only between two hypotheses and neglect the third hypothesis (anticipated takeover bid hypothesis) or subsume it under the control transfer hypothesis. For instance, Holderness and Sheehan (1985) distinguish two hypotheses namely the improved management hypothesis and the superior security analysis hypothesis. Choi (1991) uses three hypotheses namely control transfer hypothesis, anticipated takeover bid hypothesis and the undervaluation hypothesis. Park et al. (2008) distinguished among monitoring effect, takeover anticipation effect and undervaluation signaling effect. Croci (2007) uses the corporate governance champion hypothesis and the superior stock-picking hypothesis to examine a positive announcement effect.

partial acquisition, which are indicators about the potential performance enhancements in the target firm (Akhigbe et al., 2004, pp.848-850). Akhigbe et al. (2004, pp.848-849) distinguish between three ex ante drivers namely the growth opportunities of the target, the control mechanism in place in the target firm (since the large shareholder may enhance disciplinary power through alteration of the existing corporate governance system) prior to the acquisition, and the acquirer's potential control over the target. Accordingly, ex ante factors are associated with change in the corporate governance system because of the target's and acquirer's potential as well as the general potential profit opportunities. At the day of the announcement these ex ante factors may be used by the market to evaluate the market transaction (Akhigbe et al., 2004) but additionally the market will use the probability of successful ex post events (Brav et al., 2008).

Brav et al. (2008, p.1757) stress the point that the announcement effect is a biased estimator of successful monitoring and control by shareholder activists. That is because the adjustments to the stock price following the announcement of the partial stock acquisitions will only reflect the expected benefits from shareholder activism adjusted for the equilibrium probability that the new institutional investors continue monitoring and control and eventually succeed. If the price were fully adjusted to the ex post effects of monitoring and control activity by shareholders (simply assume that the market is able to read it), the investors would have no incentive to continue to invest in costly monitoring—ignoring reputation concerns and liquidity issues. As a corollary, the market response is below the value reflecting the ex post successful monitoring and control activities (Bradley et al., 2007).[51]

Partial stock acquisitions may create value through shareholder activism as a corporate governance provision. Shareholder activism may arise when shareholders are dissatisfied with corporate decisions or the behavior of the managers. According to Hirschman's (1970, Chapter 1) distinction made in the context of the behavior of members of organizations, shareholders have three choices to react to organizational decline: *first*, they can sell their share ("exit"); *second*, they can hold their share and voice their dissatisfaction ("voice"); and, *third*, they can hold their share and do nothing ("loyalty"). Gillan and Starks (1998, p.3) state that the most common definition of shareholder activism, however, is that active shareholders use their "voice" to change corporate policy or rectify interests and motivations of managers without changing the control in the firm. Gillan (2006, p.56) suggests that one could define shareholder activism more generally as encompassing a continuum of feasible activities with the goal to react to corporate activity and performance. Thereby these activities comprise everything between the two polar extremes where the market participant simply buys shares and decides whether to hold or sell the shares and a full takeover. In between these two extreme points of the continuum, there are other possibilities of shareholder activism such as an active minority shareholder who buys shares and aims to have an impact on the decision-making process of management to increase shareholder's value.[52]

[51] Theoretical models that are in line with the low predictability between announcement effect and ex post success of activism are the models by Maug (1998) and Cornelli and Li (2002).
[52] See Hirschman (1970), Gillan and Starks (2007), and Tirole (2006, Chapter 1) for more discussions and definitions.

In general, models of large shareholders try to explain how large shareholders are motivated to engage in costly shareholder activism (monitoring and control of management). The problem is that the benefits are at least partially shared among all shareholders but the costs accrue to the large shareholder which give rise to the well-known free-rider problem (Grossman and Hart, 1980). Generally, large shareholders can be motivated by two benefits namely shared benefits of control and private benefits (Holderness, 2003). On the cost side, the large shareholder mainly has to bear the monitoring costs, which are private costs because they are not shared with remaining shareholders. Moreover, lack of diversification and illiquidity might be additional costs to large shareholders (Tirole, 2006, Chapter 9). Models of large shareholders and monitoring are distinguished from each other in the way they describe how the single or multiple large shareholders are motivated to engage in activism and how large shareholder exert activism.[53]

There are various models dealing with large shareholders as monitors. While some large shareholder models focus on shared benefits of control (Admati et al., 1994; Huddart, 1993; Shleifer and Vishny, 1986), others mainly try to account for other sources of private benefits (e.g., trading profits and private control) that explain incentives for activism (Admati and Pfleiderer, 2009; Kahn and Winton, 1998; Maug, 1998). Perhaps large shareholders need to be compensated to bear the costs of holding a large stake and engaging in costly activism (Becht et al., 2005, pp.17-18). Trading profits from insider trading, for instance, might be an important engine for activism because it may compensate for monitoring costs (Demsetz, 1986). Accordingly, large shareholders might use the information they acquire through their monitoring activities for trading purpose (either selling or buying shares). There are theoretical models that analyze the competition among multiple large shareholders for private benefits of control, e.g., Bennedsen and Wolfenzon (2000) and Bloch and Hege (2001). Additional, trading might be also used as an disciplinary device because of the link between stock price and managerial effort (Holmstrom and Tirole, 1993).[54] Along these lines some models focus on multiple large shareholders who use voice and/or trading to exert shareholder activism (Attari et al., 2006; Edmans and Manso, 2009; Noe, 2002). Furthermore, other models discuss various costs of large shareholders as monitors (Allen and Gale, 2000b; Shleifer and Vishny, 1997; Tirole, 2006, Chapter 1). For example Burkart et al. (1997) discuss the trade-off between initiative and control and argue that monitoring can be beneficial but also can impose costs. This is because managers have less initiative (i.e., searching for firm specific investment) if they are

[53] Holderness (2003, p.55), for instance, discusses that in the literature it is often assumed that private benefits (e.g., excess extraction of rents relative to the size of the cash flow rights (Achleitner et al., 2009a)) are in any case detrimental for the remaining shareholders. This is not always correct. Private benefits such as synergies arise to the large shareholders or nonpecuniary benefits (e.g., satisfaction from holding an important and public corporation) do not ultimately accrue to the large shareholders at the costs of the remaining shareholders. These private benefits can in turn even produce shared benefits of control.

[54] Large shareholders can intervene through trading (e.g., sell or buy shares) to discipline management as an additional device besides intervention through their voice (Hirschman, 1970) to put pressure on or reward management (Admati and Pfleiderer, 2009). A problem with this additional device is that large shareholders might tend to prefer to use exit rather than voice when it is possible sell their shares easily (Hirschman, 1970). Hence, there might be tension between these two devices. The notion that large shareholders sell their shares rather than engage in activism via intervention is known as the "Wall Street Rule" (Black, 1990, p.534).

controlled tightly (i.e., less managerial discretion). Moreover, Bolton and Thadden (1998) set up a model to examine the trade-off between liquidity and control, and they demonstrate that an increase in large shareholdings increases the incentive to engage in activism but at the same time reduces the liquidity and vice versa.[55]

Another strain of literature focuses on the link between partial stock acquisition and subsequent takeover bids. Grossman and Hart (1980) study a takeover model and introduce the free-rider problem. In their model, the company owned by atomistic shareholders, no one has the incentive to make an investment in costly search and bid costs because the benefits will be shared among all shareholders whereas the costs accrue only to the bidder. One solution to this free-rider problem is that the shareholders make a partial stock acquisition previously (toehold) so that they can gain on the toehold when making a takeover bid. The gains of the toehold must be sufficient to cover the search and bid costs. Shleifer and Vishny (1986) consider a company with atomistic shareholders and one large shareholder. When the large shareholder's stake rises, the probability of a subsequent takeover also increases and so does the firm value. Thus, in the model there is a negative relation between bid premium and toehold size. Moreover, in the model of Shleifer and Vishny (1986) the prospective bidder is not necessarily the large shareholder because he may simply increase the bid of a third party. Hirshleifer and Titman (1990) consider a model where the outcome of the takeover bid is stochastic rather than certain as in Shleifer and Vishny's (1997) model. They show that while the likelihood of a successful bid increases with the toehold and the takeover bid premium, the average bid-premium reduces in the toehold (Sudarsanam, 1996).

Overall, although there are different reasons for partial stock acquisitions (i.e., strategic, financial, and activist), these acquisitions can be a useful provision to enhance the firm's corporate governance system through shareholder activism. Reviewing models of large shareholder models show that while large shareholders have potential to reduce agency costs, they also can create costs. Moreover, partial stock acquirers, particularly in Germany, may create value by tackling the agency conflict not only between managers and shareholders (Agency Problem I) but also between controlling shareholders and minority shareholders (Agency Problem II). Unfortunately, in theory there is no answer to the question as to whether partial stock acquisition may create value for the firm through enhancing the corporate governance system. Hence, the question on whether these acquisitions indeed use the potential is a matter of empirical evidence.

2.2.5 Importance of Efficient Markets

An open question in the literature is empirically estimating the effect of partial stock acquisitions on share price. Moreover, another important research question is to identify the channels through which partial stock acquisitions affect share price. In my dissertation, both of these questions are addressed

[55] Pagano and Röell (1998) discuss the trade-off between public and private ownership and monitoring (Allen and Gale, 2000a).

by using the short-term market response to partial stock acquisition announcements. The primary methodology on which my analysis relies is an event study methodology in an efficient market paradigm. I have argued that there are three valuation consequences of partial stock acquisition announcements namely control transfer hypothesis, anticipated takeover bid hypothesis, and undervaluation hypothesis (see Subsection 2.2.4). Accordingly, if the market is efficient and if the new information about the partial stock acquisitions of new institutional investors is released, price will reflect the expected future gains from these transactions because otherwise there would be profit opportunities. While the stock market reaction to partial stock acquisition announcements only focuses on expected value gains and only considers the average market view on this transaction, it neglects actual ex post corporate changes.[56] Nevertheless, the stock market view is important, especially when considering publicly traded companies.

The efficient market hypothesis is one of the main cornerstones[57] of what we know as modern financial economics (Lo, 2000). It fundamentally changed the way professionals and academics think about stock markets today. The semi-strong form of market efficiency is widely accepted by academic financial economists but nevertheless also has its critics, as discussed by Malkiel (2003).[58] Fama (1970, p.383) defines an efficient market as a market in which prices always "fully reflect" available information. Competitive stock prices cannot simply be predicted, otherwise profit opportunities exist that could be easily exploited—this is what the random walk hypothesis of stock prices implies (Brealey et al., 2006, p.337).

Three forms of efficient markets are usually distinguished based on the information set fully reflect in the prices (Fama, 1970). In the weak form, the information set is historical prices, in the semi-strong form the information set is all publicly available information, and in the strong form, the information set is all private as well as public information (Fama, 1970). One of the preconditions for the market efficient hypothesis is that information and trading costs are always zero (Grossmann and Stiglitz, 1980) which is certainly unrealistic; thus, to compensate for this unrealistic assumption, transaction costs must be considered (Fama, 1991). Hence, a more sensible definition is that prices reflect information to the point where the marginal benefits from trading on information do not exceed the marginal costs of trading (i.e., transaction costs as well as information costs) (Jensen, 1978).

What, then, is the implication for efficient markets? The concept of market efficiency is by no means a "well-posed and empirically refutable hypothesis" Lo (2000, p.x). While sensible assumptions about information and trading costs are certainly one obstacle in applying the market efficiency hypothesis, the joint-hypothesis problem is more serious (Fama, 1991, p.1575). To apply

[56] Keep in mind that the value of the firm is determined by the present value of its future cash flows (Kruschwitz and Löffler, 2006). Hence, theoretically the value of the firm will adjust today when the market expects that an adjustment of either the free cash flows or the capital costs will occur.

[57] Lo (2000, p.xii) claims that the cornerstones of modern financial analysis are the random walk hypothesis, option pricing theory, market efficiency and the equilibrium trade-off between risk and expected return. A brilliant book that is dedicated to the great origin of modern finance is Bernstein (1992). He discusses the concepts, the applications and the inventors who made the financial revolution possible.

[58] The majority view of academia is well presented in the quote by Jensen (1978, p.1): "I believe there is no other proposition in economics which has more solid empirical evidence supporting it than the Efficient Market Hypothesis."

this concept and make it operational, one has to specify additional structured—e.g., utility functions, information structure, model of equilibrium, human behavior. Here is the caveat: the additional structure makes this beautiful concept of market efficiency per se not testable because it is always a test of other auxiliary hypotheses. A rejection of such a joint-hypothesis problem can be caused by any of the tested hypotheses and hence, tells us little which aspect is inconsistent with the data (Campbell et al., 1997, Chapter 1; Lo, 2000). Thus, precise inferences about the degree of market efficiency are likely to remain impossible because of the joint-hypothesis problem, as discussed by Fama (1991) and Campbell et al. (1997, p.24).[59]

The question of market efficiency is also always a question of how fast the information must be included into stock prices to characterize the market as efficient. Speed of adjustment and observed irrationalities depend on a number of factors[60] such as transaction costs and costs of information.[61] It is not surprising if inefficiencies are found in the market. But "smart money" will always ultimately make the market competitive and lead to a certain degree of efficiency because "If any $100 bills are lying around the stock exchanges of the world, they will not be there for long" (Malkiel, 2003, p.80). Lo (2000) discusses that there are other concepts that help us grasp the complexity of the real world besides the all-or-nothing notion of absolute efficiency. For example, one way is to use the concept of relative efficiency which uses the market efficiency as an idealization that presents a useful reference point and asks for efficiency of markets relative to each other.[62] One also can extend the definition of efficient markets in a way that shows profits are possible as long as market participants maintain a competitive advantage for instance through breakthroughs in financial technology, extraordinary effort or for unusual skills (Campbell et al., 1997, Chapter 1; Lo, 2000). Black (1986) argues that as a consequence of extensive "noise"[63] in the financial markets, he would define "[...] an efficient market as one in which price is within a factor of 2 of value [...] By this definition, I think almost all markets

[59] Fama (1991, p.1576) discusses the joint-hypothesis problem and states: "Does the fact that market efficiency must be tested jointly with an equilibrium-pricing model make empirical research on efficiency uninteresting? Does the joint-hypothesis problem make empirical work on asset-pricing models uninteresting? These are, after all, symmetric questions, with the same answer. My answer is an unequivocal no. The empirical literature on efficiency and asset-pricing models passes the acid test of scientific usefulness. It has changed our views about the behavior of returns, across securities and through time. Indeed, academics largely agree on the facts that emerge from the tests, even when they disagree about their implications for efficiency. The empirical work on market efficiency and asset-pricing models has also changed the views and practices of market professionals."

[60] Other factors might be limits of arbitrage, behavioral finance, overreaction hypothesis, as discussed by Shleifer and Vishny (1997), Grossman and Stiglitz (1980), Treynor (1981), De Bondt and Thaler (1985), and Shiller (2003).

[61] Or as Treynor (1981, p.56) states "I believe in a third view of market efficiency, which holds that the securities market will not always be either quick or accurate in processing new information."

[62] Campbell et al. (1997, pp.24-25) explain the benefit of the concept of relative efficiency over absolute efficiency (all-or-nothing view) by using an analogy with physical systems. Moreover, they state that physical systems are usually given an efficiency rating based on the relative proportion of energy converted to useful work. When a piston engine is rated by 60% efficiency it would mean that on average 60% of the energy contained in the engine's fuel is used to turn the crankshaft and the remaining 40% is lost to other forms of work such as heat, light, or noise. They further argue few engineers would ever consider statistically test whether the engine is perfectly efficient because such am engine does not exist in the real world—it only exist in a frictionless world. However, test of relative efficiency are common place, whereby one tests the relative efficiency to the frictionless ideal. Hence, they argue that, although, market efficiency is an idealization that is economically unrealizable it is useful to serve as a reference point for measuring relative efficiency.

[63] In his model of financial markets Black (1986) uses the term "noise" in contrast to information. Black (1986, p.529) states that noise is what makes financial markets somehow inefficient, but simultaneously it prevents market participants to exploit these inefficiencies.

are efficient almost all of the time. "Almost all" means at least 90%" (Black, 1986, p.533).[64] Jensen (1978, p.1) states, "I believe there is no other proposition in economics which has more solid empirical evidence supporting it than the Efficient Market Hypothesis."

To put it simply, the semi-strong form of the efficient market hypothesis implies that one cannot consistently realize returns by using publicly available information because stock prices will reflect new information instantly. The announcement of the partial stock acquisition is an event that probably brings new information to the market. If the market is efficient, it will reflect the valuation consequences instantly. Theoretically, the determinants are not unambiguous and there are diverse drivers such as anticipated monitoring, potential future takeover and undervaluation, which depend on the specific transaction. As a result, to understand the potential of partial stock acquisitions to enhance corporate governance and thus create value is a matter of empirical evidence.

2.3 EMPIRICAL ANALYSIS OF PARTIAL STOCK ACQUISITIONS—METHODOLOGICAL ASPECTS

This section discusses the methodological aspects of my empirical investigation of partial stock acquisition announcements. To begin with, different methodologies are discussed that are deployed in the literature to examine ownership structure and firm performance (Subsection 2.3.1). Afterwards, three important issues within the empirical analysis associated with my research question are picked out for different reasons. *First*, performance measures are discussed. This is because there are various types of performance measures and thus it makes sense to take a closer look at these measures because it is not absolutely clear how performance ought to be measured (2.3.2). *Second*, this section treats ownership measures that are also important and diverse because of the existence of different aspects, dimensions, and views of ownership (2.3.3). *Third*, and very importantly, new institutional investors as shareholder activists are discussed, which are at the centre of interest in my analysis because they have high potential to create value by enhancing the corporate governance system.

2.3.1 Diversity in Ownership and Performance Research Methods

Broadly speaking, the purpose of my investigation is to examine the monitoring and control function of large shareholders and to examine the market for partial control with respect to German-listed companies. Section 2.2 discusses large shareholders and the market for (partial) control—both have the potential to mitigate the corporate governance problem. The central message is that it is not possible to determine theoretically whether this potential is indeed used. Thus, the question must be addressed empirically.

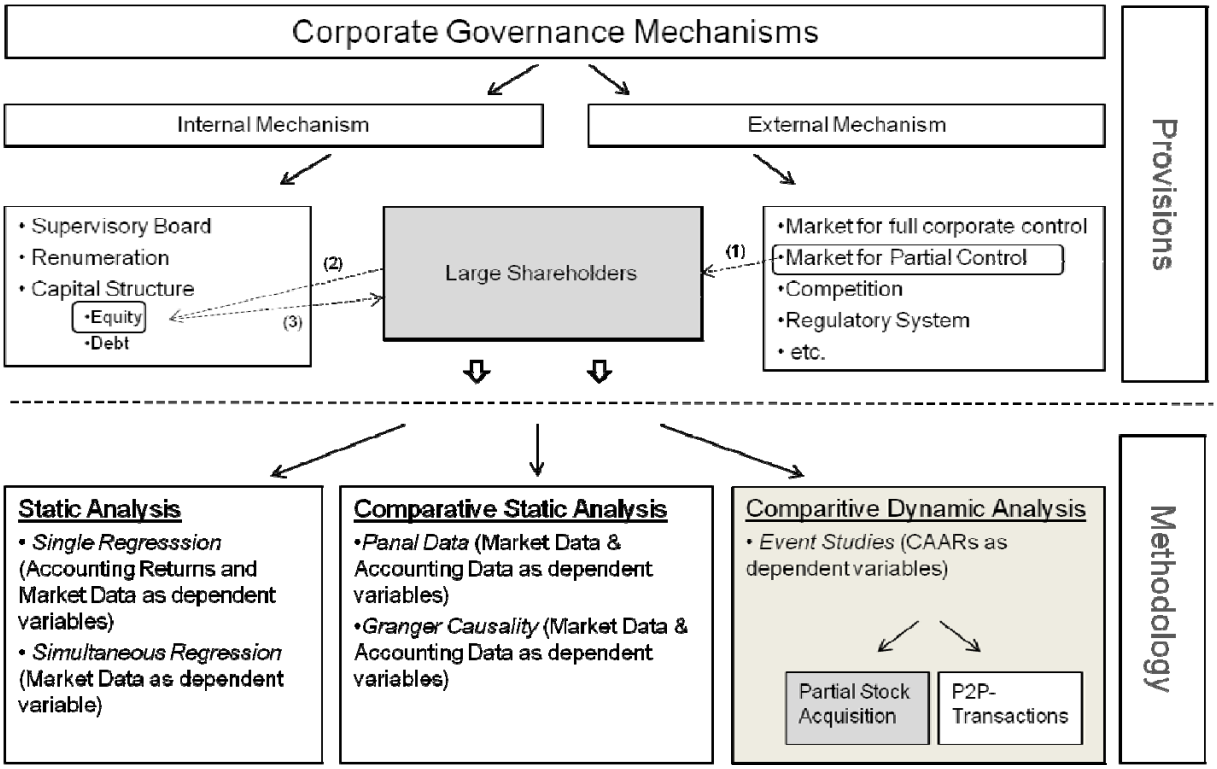
[64] Black (1986, p.533) comments on his view about efficient markets and states: "I think this puts me between Merton [(1985)] and Shiller [(1981; 1984)]. Deviations from efficiency seem more significant in my world than in Merton's, but much less significant in my world than in Shiller's."

The literature deploys various methodologies towards this endeavor. I apply an event study methodology and focus on partial stock acquisition announcements. This is one strain of literature in studies on ownership and performance. In what follows, the diverse methodologies that are applied by the literature are discussed. I then construct a taxonomy of ownership and performance. The deployed methodology is classified within this structure.

Thomsen et al. (2006, pp.250-252) review empirical studies on the relationship between ownership structure and firm performance and highlight five methodologies employed by the studies. More specifically, these studies are single regression (accounting returns), single regression (market returns), simultaneous equations (market returns), panel data (market returns), and event studies (risk-adjusted returns). Boehmer (2000, pp.118-119) differentiates between two methods: event-based methods, which measure the effect of particular events (e.g., corporate acquisitions of firms), and cross-sectional methods, which investigate cross-sectional correlations between ownership structure and firm performance. Agrawal and Knoeber (1996, pp.378-379) distinguish between two strains of literature that investigate corporate governance mechanisms to mitigate the agency problems in firms. The first strain of literature examines a certain event that changes the extent to which one particular corporate governance provision is deployed, such as alteration of the composition of the board, antitakeover amendments, poison pills and so forth. The second body of literature studies the relationship between performance in firms and the degree to which the various corporate governance mechanisms are employed in these respective firms.

There are various reasons for the diversity of different methodologies in use. One obvious reason is that each methodology has its strengths and weaknesses (Thomsen et al., 2006). Another stems from the ambiguity in how performance ought to be measured (Köke, 2002a, Chapter 2). Generally, the empirical approach depends on the performance measures used (i.e., accounting, market, or hybrid measures) (see Subsection 2.3.2) as well as the way in how ownership is measured (i.e., aspects, views, and dimensions of ownership) (see Subsection 2.3.3). Particularly, the distinction between ownership of control (static view) and transfer of control (dynamic view) is crucial, yet the importance of the distinction has been suggested only recently (Franks and Mayer, 2001). Furthermore, when focusing on firms not listed on the exchange, one cannot use the event study methodology in part because it requires stock market data. *Figure 2.2* highlights the different empirical methodologies to examine the ability of large shareholders and firm performance.

Figure 2.2: Methodologies to Examine Corporate Governance and Firm Performance



Note: Boxes of relevant provisions and methodologies are shaded; P2P:= public to private transactions.

The provisions section of *Figure 2.2* describes the various corporate mechanisms introduced in Section 2.2. The focus is on large shareholders and the market for partial control. Thereby, one specific event is investigated, namely the partial stock acquisition announcements of a new institutional investor, which can be understood as a synthesis of two mechanisms namely equity (i.e., shareholders) and market for partial control. The methodologies section of *Figure 2.2* summarizes the different methodologies used for analyzing larger shareholders and their ability to create value for the firm. Large shareholders are only one provision to mitigate problems that emerge from the separation of ownership and control. I summarize the applied methodologies into three categories: static analysis, comparative static analysis, and comparative dynamic analysis.

The *first* strain of literature (static studies) uses single regression or simultaneous regression models. These studies are static in nature and only consider one moment in time, comparing different companies' market and accounting returns by employing single regression and simultaneous equation models (Thomsen et al., 2006). While the major drawback of single regression models is that they do not account for the endogeneity problem of ownership (Demsetz and Lehn, 1985), the simultaneous equation model suffers from the problem of trying to find truly exogenous instrument variables that do not co-vary with firm performance but affect ownership structure (Himmelberg et al., 1999).

The *second* strain of literature (comparative static studies) compares different moments both in time and across companies by using market or accounting measures. They compare two or more static points in time, but they do not consider the dynamics after the change in one of the variables nor the

change itself. These studies mainly use panel data analyses (Börsch-Supan and Köke, 2002; Himmelberg et al., 1999) which address the common culprit of unobserved firm-specific variables. One recent study (Thomsen et al., 2006) introduces granger causality methodology and accounting as well as market measures to examine large shareholders ownership and firm performance. The main advantage in deploying the granger causality methodology is that it can analyze a wider range of alterations than event studies, and it can also help detect causality without using instrumental variables. On the downside, this methodology requires time-series data which is generally difficult to collect, especially in corporate governance studies (Thomsen et al., 2006, p.252).

The *third* strain of literature (comparative dynamic) is comparative dynamic in nature because these studies compare different dynamic adjustment processes following a predefined event (e.g., announcement of a change in ownership structure) over a standardized timeframe (event time). Therefore, an event study methodology is used to analyze the responses of the stock prices to the announcements of changes in the block formation of outside blockholders.[65] Thereby one can distinguish between short-term event studies and long-term event studies (Kothari and Warner, 2007). There are some studies that focus on partial block acquisition, whereas others analyze corporate takeovers as event under investigation (Boehmer, 2000). There are at least three crucial advantages of employing event studies (Boehmer, 2000): *first*, this methodology allows isolating market responses to firm-specific events, helping to account for firm-specific heterogeneity; *second*, event studies mitigate the problems of causality between ownership structure and performance that plague cross-sectional studies by only measuring performance changes in a short event window; *third*, market-based performance measures (see Subsection 2.3.2) can be used in event studies, as opposed to cross-sectional analysis, because of the forward-looking nature of stock prices and because of the ability of event studies to capture the stock market reaction to a specific event (if the event date is precisely identified).[66]

Moreover, besides the view of ownership (i.e., static and dynamic view), the type of ownership is likely to be an important dimension of ownership (more see Subsection 2.3.3). In my dissertation, I confine the investigation to one specific type of large shareholder (i.e., a new institutional investor). These investors have high potential to enhance the corporate governance system by reducing agency costs (see Subsection 2.3.4). The literature on ownership structure has, for a long time, neglected the importance of the type of large shareholder (nature of control) and has instead focused on the concentration of shareholdings (degree of control) in relation to large shareholder activism and performance. However, nature of control might be important because different shareholders have different incentives, skills, and power to monitor and control management (Pedersen and Thomsen, 2003; Short, 1994). Interestingly, this has changed over time and there are various studies using different types of large shareholders including corporations, individuals, raiders, and institutional

[65] While in growth theory comparative dynamics is the methodology of the comparison of well-defined steady states (Jaeger, 1979), I use this term to compare different dynamic adjustment processes following a pre-defined event (e.g., announcement of partial stock acquisition) over a standardized timeframe (i.e., event time).

[66] Cross-sectional studies, on the other hand, use backward-looking variables (e.g., accounting measures) because they do not examine a specific event (e.g., merger announcement, partial stock acquisition announcement) but rather a specific moment in time (e.g., end of fiscal year) (Boehmer, 2000, p.119).

investors. Other studies break down the large shareholder into their intention of being active or passive shareholders. The benefits of active large shareholders are still debatable (Becht et al., 2008).

In the last decade or so a new type of shareholder activist has moved into the spotlight, namely private equity firms and hedge funds (i.e., new institutional investors). These investors seem to have the right incentive, skill, and power to effectively monitor and control management, and thus are excellent agents to address the corporate governance problem in the public corporation (Achleitner et al., 2010b). The analysis will focus on the aforementioned investors. The rise of new institutional investors as important shareholder activists has been fostered by changes in the financial systems as well as recent developments in German corporate governance (see Subsections 2.1.3 and 2.1.4). Various forces such as deregulations of capital markets, pressure of institutional investors, internationalization of production (Jürgens and Rupp, 2002) have initiated major changes in statutory regulations, introduced new sets of codes, and propelled developments of stock exchanges in Germany (Goergen et al., 2008). These forces, combined with the changes that they have engendered, have had a profound impact on the financial and the corporate governance system (Goergen et al., 2008; Jürgens and Rupp, 2002; Nowak, 2001).

The different methodologies deployed in the literature are sometimes mixed, and it seems that the literature does not accurately distinguish between these unique methodologies. In a very comprehensive survey on the empirical literature, Karpoff (2001, p.2) concludes that dissent in part stems from differences in metrics applied among researchers. I emphasize the distinction between these different methodologies because an accurate differentiation between the commonly used methodologies is paramount for the interpretation and implication of my results.

My research question focuses on the magnitude and determinants of partial stock acquisition announcements of new institutional investors and its short-term valuation consequences. In *Figure 2.3*, I present my taxonomy, which analytically structures the methodologies applied by the empirical literature on ownership structure and firm performance. With regard to the taxonomy, I suggest a 3-by-5 matrix to capture the methodologies in this field. The three rows of the matrix comprise the applied methodologies: static studies, comparative static studies, and comparative dynamic studies. The five columns capture the type of large shareholders: corporations, individual investors, corporate raiders, traditional institutional investors, and new institutional investors.[67] The vector for the third row of the 3-by-5 matrix (see shaded box in *Figure 2.3*) is the methodology that I apply in my investigation. The literature associated with this methodology is reviewed in Chapter 3.[68] I focus on comparative dynamic studies whereby I analyze partial stock acquisition announcements as a shareholder activism event. There are various shareholder activism events (sub-categories) which could be analyzed by using this methodology such as announcements of proxy fights, eventual takeovers, and management turnover. To indicate that there are sub-categories and to point out that I only deal with the literature

[67] Another alternative is to use the intention of the large shareholders instead of the type and then decompose them into active and passive large shareholders.

[68] Please note that each of the three rows could be further broken down in to sub-categories to indicate additional refinements associated with the specific research question of the respective study—in this case pertinent to the third row.

associated with partial stock acquisition announcements, I use a box rather than stating that the relevant literature is located in the third row of the matrix.

Figure 2.3: Taxonomy of Studies on Ownership and Performance

Type of Blockholder / Methodology	Corporations	Individual Investors	Corporate Raiders	Trad. Institutionals	New Institutionals
Static Studies					
Comparative Static Studies					
Comparative Dynamic Studies	Chapter 3				

The discussed methodologies often imply different econometric problems but also pose different questions. The vast majority of German, as well as international, literature on large shareholders and their ability to influence firm performance is conducted by using accounting data or Tobin's q to assess corporate performance in cross-sectional or panel regression analysis (Meyer and Prilmeier, 2006)—hence the focus on the static view. Thereby these static or comparative static studies, on the one hand, focus on the analysis of the level of ownership and its impact on large shareholder's incentive to align the firm's corporate policy (Barclay and Holderness, 1991). The event study approach, on the other hand, assesses how far large shareholders are able to influence the shareholder's value and thereby analyzes the impact of changes in ownership structure and its impact on shareholder's value. Thus, the focus is on the dynamic view or the transfer of control. Hence, event studies are a kind of dynamic extension of the static studies measuring the ability of large outside blockholders to mitigate agency problems and thereby increasing firm value (Park et al., 2008).

Overall, reviewing the methodologies on ownership structure and its impact on firm performance (e.g., firm value) reveals that these different methodologies are sometimes compounded with each other, and it appears that literature often fails to accurately distinguish between these different methodologies. The emphasis is put on the distinction between these different methodologies because different approaches often imply different implications and interpretations. Accordingly, being aware of the different approaches in use will help to integrate my research results within the existing body of literature and will simultaneously help interpret and understand the implication of my results.

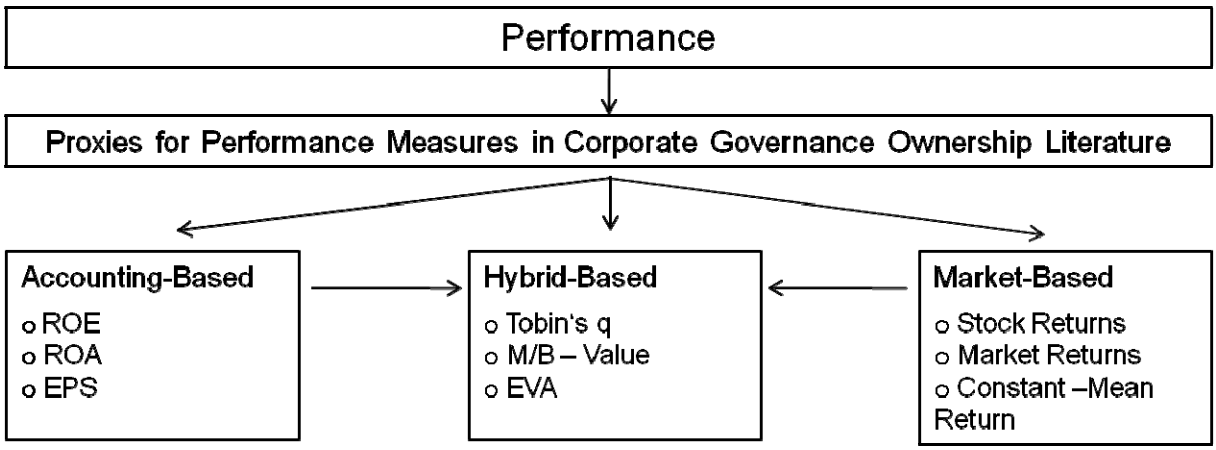
2.3.2 Various Types of Performance Measures

Measurement of performance is one of the key interests of corporate governance studies. The purpose of my investigation is to examine the market response to the announcement of partial stock acquisitions of new institutional investors. Hence, I use market-based performance measures, that is, the abnormal returns. A firm's performance, however, is ambiguous. Hence, the existing literature uses dif-

ferent proxies to measure performance. Reviewing the literature exposes that one can broadly distinguish three sorts of financial performance measures: accounting-based, market-based, and hybrid-based.

There is no performance measure which has proven to be superior (Kehren, 2006, p.108). Tobin's q, however, is probably the most frequently applied measure in the corporate governance literature (Bhagat and Jefferis Jr., 2002, Chapter 2; Börsch-Supan and Köke, 2002; Kehren, 2006). One crucial problem in finding a proper performance measure is that, from a theoretical viewpoint, it is anything but clear how performance ought to be measured because of its complex nature (Köke, 2002a, p.141). In the corporate governance literature, various different performance measures are used. *Figure 2.4* decomposes this measure into three groups of performance measures by following Groß (2007, pp.23-33). As it turns out, marked-based measures are using market data, accounting-based variables use financial accounting data, and hybrid-based measures use both market and accounting data. It is common for the corporate governance literature to use the dichotomy of accounting-based and marked-based performance to delineate performance measures and does not use the term hybrid-based measures (Bhagat and Jefferis Jr., 2002, p.17).[69]

Figure 2.4: Structure of Performance Measures



Note: ROE:= Return on Equity. ROA:= Return on Assets. EPS:= Earnings per Share, M/B-Value := Market-to-Book Value. EVA := Economic Value Added. Source: Following Groß (2007, p.24).

Accounting-based performance measures consist of financial balance sheet data. These may include return on equity (ROE), return on assets (ROA), or earnings per share (EPS). This data is not dynamic in nature because it depends on how often the financial reports are disclosed. Usually, financial reports are disclosed at least once a year, depending on the reporting requirements of the respective firm. Moreover, accounting data is available for companies not listed on the exchange and thus allows researchers to examine a sample with private and small companies (Groß, 2007, Chapter 2). As previously mentioned, accounting data is usually backward-looking in nature (Boehmer, 2000).

[69] The focus at this point is on financial performance measures only but there are critics that claim that these measure at all are inadequate because they do not consider the real effects and thus are spurious (Cumming et al., 2007).

Hence, this data does not suffer from the anticipation problem like its market-based counterpart (Bhagat and Jefferis Jr., 2002). However, this backward looking nature of accounting data, although beneficial, also has its drawbacks, as mentioned in 2.3.1 and discussed by Boehmer (2000). Critics of accounting-based performance measure point out the notion of accounting bias. The accounting data is influenced by different accounting conventions and standards applied by different companies (Bhagat and Jefferis Jr., 2002, Chapter 2; Groß, 2007, Chapter 2). This is especially true when valuing tangible and intangible assets. Moreover, management might have an incentive to manipulate the accounting data because it is connected to their remuneration scheme (Bhagat and Jefferis Jr., 2002, p.19). Managers can manipulate accounting numbers. Keep in mind that the discretionary power of managers over selecting the financial reporting methods leads to an incentive problem. That is because managers are inclined to select financial reporting methods to overstate financial and stock prices performance to maximize their own wealth, which might come at the expense of investors (LaFond and Watts, 2007; Ng, 1978) as proposed by the principal agency theory.[70]

Market-based performance measures use market variables to proxy performance such as risk-adjusted returns, market returns, or stock price returns (MacKinlay, 1997). This measure is calculated either from stock returns alone or from stock price in connection to a specific return generating model (e.g., market returns). Because stock prices are usually available on any trading day, this performance measure is practically dynamically available. Additionally, this measure is inherently forward looking (Boehmer, 2000). This forward-looking nature may lead to an anticipation problem: given the market is at least semi-strong efficient, any publicly available information will be impounded in the stock price immediately. Accordingly, after the news about the change in ownership has become public, there will be no further relation between ownership and stock price. Hence, market data is not eligible for cross-sectional analysis that regresses ownership structure on market performance measures at a specific point in time (e.g., the end of fiscal year) because there will not be a causal relationship (Bhagat and Jefferis Jr., 2002; Boehmer, 2000). Nevertheless, one can use the abnormal returns from the event study analysis for a cross-sectional regression analysis (as I do in my dissertation). Furthermore, critics of the efficient market hypothesis will raise the caveat that performance measures are affected by market moods and irrational behavior, making the measure an unreliable companion (Malkiel, 2003). At the same time, this quick response to new information may be beneficial from an econometrical perspective because it helps pinpoint the relation between change in ownership structure and performance (Boehmer, 2000; Thomsen et al., 2006).

[70] One way to reduce the discretionary power of managers is the enforcements of reporting standards (e.g., HGB or US-GAAP) to introduce a framework of acceptable reporting methods from which managers may chose. This helps to limit the manager's leeway by giving him a guideline of what the standard setters view as acceptable reporting methods (Ng, 1978). The role of intermediaries such as auditors, regulators, standard setters, or financial analysts is to guarantee the credibility of the firm's disclosure and to provide verification of whether the financial reporting methods selected by the firm's managers are in accord with the reporting standards. The role of the external auditors at this point, as intermediaries, is to verify the credibility of management disclosure (Healy and Palepu, 2001). This shall mitigate the agency problem by verifying that management choose an acceptable set of accounting methods which are in line within the limits of standards (Ng, 1978; Watts and Zimmerman, 1983).

Hybrid-based performance measures consist of market-based and accounting-based components, for example Tobin's q,[71] market-to-book-ratio (M/B) value, and economic value added (EVA). Tobin's q is probably the most frequently used performance measure in the corporate governance literature (Börsch-Supan and Köke, 2002, p.318; Kehren, 2006, p.106). Technically, Tobin's q is a market-based measure because it is defined as the quotient between the market value of the company and the replacement of the book equity (Groß, 2007, pp.28-29). It is usually calculated, however, by using the book value of total assets in the denominator. Although it is widely accepted, and is one of the main performance measures, it has problems (Demsetz and Villalonga, 2001, p.214). *First*, the market value contains the cash flow stream of the intangible assets whereas the replacement costs of tangible assets do not consider intangible assets. Hence, this measure is positively related to the proportion of intangible assets in the firm because more intangible assets will increase the value of the numerator but will not be considered in the denominator (Bhagat and Jefferis Jr., 2002, p.18). *Second*, because the value of the denominator is usually calculated by using financial data, it also may suffer from accounting bias (Demsetz and Villalonga, 2001, p.213; Pham et al., 2008, p.4).

This succinct analysis reveals that it is unclear how performance ought to be measured. The deployed performance measures in corporate governance literature are classified into three categories, e.g., accounting-based, market-based, and hybrid-based measures. My research question focuses on the market response to partial stock acquisition announcements and the event study methodology is used to assess the valuation effects. Hence, a market-based performance measure is used.

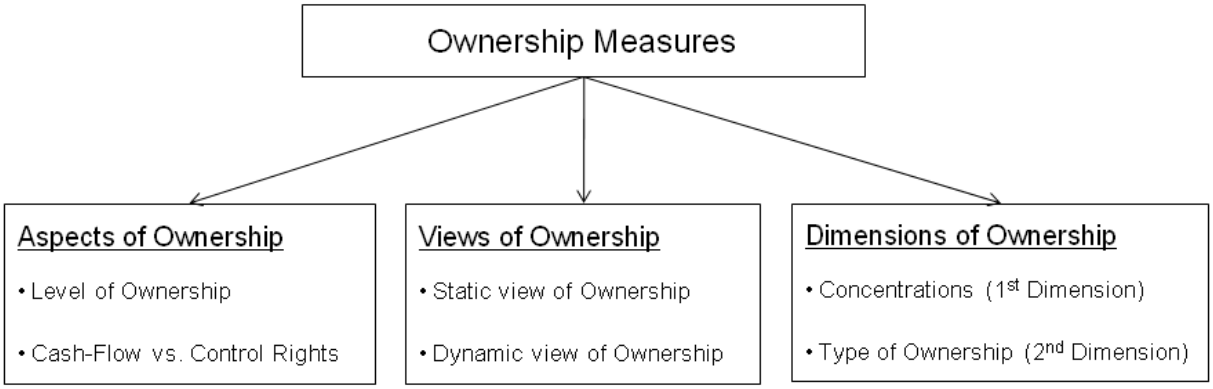
2.3.3 Different Characteristics of Ownership Measures

The purpose of this section is to discuss ownership measures from a methodological perspective. Understanding the different approaches deployed in the academic literature to investigate ownership associated with corporate governance is important since the change in ownership is at the centre of interest in my analysis. Empirical studies in corporate governance struggle to define variables that empirically measure the concept of control (Short, 1994). Furthermore, the analysis of control still seems to be an open research area (Leech and Manjón, 2003). From a theoretical perspective, it is not clear whether ownership structure, as it relates to performance, matters at all (Modigliani and Miller, 1958), is endogenous (Demsetz and Lehn, 1985) or whether it has a positive or negative impact on firm value (Shleifer and Vishny, 1986).

By reviewing the literature, I single out three characteristics that are important: aspects of ownership, views of ownership and dimensions of ownership. I depict these different perspectives on ownership in *Figure 2.5*.

[71] Theoretically Tobin's q is a market-based performance measure but it is usually calculated with accounting and market values and hence is rather a hybrid-based measure (Groß, 2007, p.28).

Figure 2.5: Analytical Structure of Ownership



First, I discuss aspects of ownership. The complexity of the corporations' ownership structure has evolved over time (Claessens et al., 2000; Faccio and Lang, 2002; La Porta et al., 1999). Complex ownership structures prompt a key question: which level ownership structure should be measured to portray the concentration of ownership properly. Literature commonly distinguishes between the concepts of first level (or direct ownership) and ultimate ownership (La Porta et al., 1999). Whereas the first concept only considers the direct owner of the shareholdings, the second one also takes into account the complex structure of ownership by considering control chains throughout numerous levels of ownership with the goal of pin-pointing the ultimate owner. Literature on ultimate ownership was heavily influenced by the work of La Porta et al. (1999), Claessens et al. (2000), and Faccio and Lang (2002).[72]

Closely related to the level of ownership is the concept of cash-flow rights and control rights, which are important for understanding discussions on ownership measures and for understanding their implications on corporate governance.[73] Cash flow rights measure the rights on cash flows entitled to the owner through holding these shares. Control rights aim to describe the control that can be exerted

[72] There are different complex ownership structures that are usually categorized into pyramids, multiple control chains and crossholdings (Claessens et al., 2000; La Porta et al., 1999). Pyramids ownership structures generally define the ownership structures where an ultimate owner exercise control via a control chain of at least one other firm that it does not wholly own and where the control chain fulfills a critical threshold (e.g., 20%, 10%) on each link (La Porta et al., 1999, pp. 476-80). More specifically it is defined by the existence of an ultimate owner (Firm 1) that owns a controlling stake in another firm (Firm 2) which itself owns a controlling stake in the target firm (Firm 3). Crossholdings define ownership structure where an ultimate owner, owns a stake in its own firm via a chain of at least one other firm (Claessens et al., 2000, p. 93; Faccio and Lang, 2002; La Porta et al., 1999, pp. 477-80). Multiple control chains describe the structure where an ultimate owner owns another company through various control chains whereby each link in the control chain the shareholding amount to at least 5% voting rights (Faccio and Lang, 2002, p.366). The threshold that defines controlling stake is somehow arbitrarily chosen and does not base on any theory.

[73] Edwards and Weichenrieder (2009) discuss that the literature on ownership and corporate governance usually assumes that control rights equal voting rights (Edwards and Weichenrieder, 2009, p.2). Then, there are *two* possibilities that cash flow rights and control rights are separated (Edwards and Weichenrieder, 2009, p.2; Faccio and Lang, 2002, p.369): *First*, the company can issue different classes of shares that differ in their voting rights and entitlement of dividend. In Germany, to issue multiple voting shares is prohibited since May 1998 and the grandfather clause was finally finalized on June 2003.[73] Still, German companies can issue preferred shares (Goergen et al., 2008, p.47). Preferred shares entitle cash flow rights but nor voting rights. Common shares entitle cash flow and voting rights. *Second*, cash flow right can differ from control rights when ownership pyramids and crossholding of ownership exist. Accordingly, if one aims to calculate concentration ratios of direct ownership, difference between cash-flow rights and control rights can only occur because of multiple classes of shares outstanding because by assumptions no complex ownership structures are considered. This is different when using power indices to calculate cash-flow and control rights. Then difference between this two measures can occur if we calculate direct ownership and assume no multiple classes of shares (Edwards and Weichenrieder, 2009).

by the owner through holding these shares (Edwards and Weichenrieder, 2009).[74] The relationship between cash-flow rights and control rights has been said to play a crucial role regarding the efficacy of large shareholders as a corporate governance mechanism, particularly with respect to the relationship between controlling shareholders and minority shareholders (i.e., private benefit problem (Bebchuk, 1999)). The line of argument is that large shareholders have incentives to consume more private benefits at the expense of the remaining (minority) shareholders when control rights increase with all other factors remaining constant. The larger the cash-flow rights, the larger the incentive for the bigger shareholder to maximize shared benefits of control. Accordingly, the argument is that the agency problem between management and shareholder will worsen if the difference between control rights and cash-flow rights increase (Edwards and Weichenrieder, 2009; Edwards and Weichenrieder, 2004). Regarding the discrepancy between cash-flow and control rights, voting pyramids have been emphasized as one of the main sources rather than multiple shares (Edwards and Weichenrieder, 2004).

Second, I touch upon measures of ownership structure.[75] In earlier studies on ownership and performance, a simple dichotomy of owner-controlled (OC) firms and management-controlled (MC) firms was used to analyze the effects of ownership on performance. Thereby a company is categorized as an owner-controlled firm depending on whether an arbitrary fixed percentage ownership criteria is exceeded (cut-off point) by its largest shareholders. Otherwise, the company is classified as management-controlled firm because it is assumed that shareholders are not able to effectively control the firm's management.[76] Thus, the control type OC firm and MC firm is a discontinuous variable that classifies firms in two groups according to a determined cut-off point (Cubbin and Leech, 1983; Short, 1994).[77] Various authors including Cubbin and Leech (1983), however, argue against the use of a simple dichotomous classification to measure control of a firm because it neglects any other differences in ownership dispersion. Moreover, it is criticized that fixed classification rules are used to categorize different companies (Cubbin and Leech, 1983; Leech and Leahy, 1991).[78]

Cubbin and Leech (1983) suggest a different approach to measure ownership, that is, to use two dimensions namely the degree of control and the location of control. The degree of control defines a

[74] The commonly used procedure for calculating cash flow and control rights is suggested by (La Porta et al., 1999). According to this methodology, cash flow rights are calculated by multiplying the shareholdings along the control chain whereas control rights represent the percentage of the weakest shareholdings in the control chain (Edwards and Weichenrieder, 2004; Groß, 2007). Edwards and Weichenrieder (2004, p.145) label this approach the weakest-link principle. Additionally, Edwards and Weichenrieder (2009) critically discuss possible shortcomings of this widely used approach. Further concepts are suggested by Köke (2004) and Edwards and Weichenrieder (2004).

[75] For an extensive overview of the literature see Short (1994).

[76] Short (1994, p.207) states that this definition is based on the definition proposed by Berle and Means (1932) regarding management-control.

[77] Some studies following this OC and MC approach introduced modification by changing or introducing additional categories. Palmer (1973), for instance, introduced a modification to the dichotomous approach by distinguishing between strong OC and weak OC depending on the percentage of shareholding owned by the large shareholder. Another interesting modification and thus a valuable departure from the dichotomous OC-MC-approach was made by McEachern (1975) who considers the type of shareholder and their different incentives by distinguishing between two types of OC depending on whether the outside owner is simultaneously a manager or is not actively involved in the management (Short, 1994, p.216).

[78] Short (1994, p.227) summarizes that any generalization based on the idea to put control on a level with ownership depending on an arbitrarily chosen fixed percentage of equity holdings equal across all firms is pretty much improbable to give a valuable insight into the true (but unknown) relationship between ownership (control) and performance.

continuous number, which presents fraction of control of the respective shareholder. This measure is ultimately linked to voting power. The location of control is a comparable measure to the type of shareholder because both measures intend to account for the differences in motivations and characteristics of shareholders. Cubbin and Leech (1983) focus mainly on the difference between internal and external control. They state, however, that this concept can be expanded to a more refined consideration of the different categories of shareholders and their abilities and motivations to control management. Indeed, over the course of time this notion has been supported by several authors, such as Short (1994) and Pedersen and Thomsen (2003), who have advocated the idea of the two dimensional approach to measuring ownership and who have, through various studies, applied the concept to their empirical work. Pedersen and Thomsen (2003, p.29), for instance, state that the two dimensions of ownership (degree of concentration and identity of concentration) are separated but, in a sense, dependent dimensions. With regard to the first dimension of ownership, diverse measures of the degree of concentration are used (Köke, 2002a). It is important to see that the concentration measures depend on the level of ownership used for calculating the measures as well as whether cash-flow rights or control rights are calculated. The existing measures can be divided into three types of measures: concentration ratios,[79] concentration indices, [80] and power indices.[81] With respect to the second dimension of ownership (identity of owner), there is no standard approach; so, various approaches are used to categorize owner identity.[82] The focus of my dissertation is on a particular type of large shareholder and these are new institutional investors, which will be discussed in more detail in Subsection 2.3.4.

Third, I focus on views of ownership. Typically, the literature distinguishes between the static and dynamic relationship between shareholder ownership and corporate control (Franks and Mayer, 2001; Park et al., 2008). The fact that there might be an important difference between the static and the dynamic view on ownership and control has been suggested only recently (Franks and Mayer, 2001). The corporate governance system in Germany is quite different from the Anglo-American outsider corporate governance system, which consists of a weak market for corporate control but large controlling shareholders (see Section 2.1.4). Nonetheless, Franks and Mayer (2001, p.944) point out that even though there is virtually no market for corporate control in Germany after World War II, there is an

[79] Concentration ratios are the percentage shareholdings of a specified number of large shareholders. The literature uses for instance the percentage of the largest shareholder, three largest shareholders or all largest shareholder (Köke, 2000). In countries with less concentrated ownership (such as the US and UK) research has even used the ten largest shareholders or 20 largest shareholders.

[80] Concentration indices are concentration measures that aim to illustrate the intensity of the concentration within a parameter or graphic (Fahrmeir et al., 2003). With respect to the ownership structure, this measure gives useful information regarding the distribution of shareholdings across shareholders, e.g., the symmetry of shareholdings among shareholders. There is no reason to assume that these symmetry measure equal across all company and hence it might reveal valuable insights to apply such measure.

[81] The ability of members of group to influence the outcome of a vote is ought to be measured by power indices. Power indices are stemming from cooperative game theory. They usually simulate the vote by applying a voting game and thereby measure the relative power of any member of the voting game to influence the outcome. Two of the most often used power indices are the Shapley-Shubik and Banzhaf power indices, which have been proposed by Shapley and Shubik (1954) and Banzhaf (1965). These indices compute the likelihood that a participant of vote can determine the outcome of the vote by changing from the winning to the losing coalition and the other way around (Kehren, 2006; Leech, 2003). For survey on power indices see for instance Straffin (1994) and Leech (2002).

[82] For instance, La Porta et al. (1999) differentiate between five groups of owners namely family or individual, the state, financial institution, widely held corporation, and miscellaneous such as voting trust or cooperative.

active market for partial share stakes (market for partial control). There are differences between the market for partial control and full control. For instance, while Burkart et al. (1997) highlight the advantages of this mechanism to overcome free-rider problems, Bebchuk (1999) discusses that that ownership may create additional private benefit problems. While the static studies examine the static relationship between existing ownership and firm value associated with accounting, market, or hybrid measures, the dynamic studies investigate a change in ownership structure and thus measure the market value of monitoring by large shareholders (Park et al., 2008). Moreover, while partial stock acquisitions do not always imply a change in concentration of ownership, the identity of ownership certainly changes. Various studies focus on the concentration of ownership (Barclay and Holderness, 1991) while neglecting the type of ownership. The identity of the owner, however, might be important for the effectiveness of shareholder activism (Cronqvist and Fahlenbrach, 2007). Partial stock acquisition and, thus, a dynamic view on ownership help to address the problem on how the market views transfer of control.

My analysis distinguishes among aspects of ownership, views on ownership, and dimensions on ownership. The research question examines partial stock acquisition announcements of new institutional investors and their valuation consequences. Therefore, the focus is on the dynamic view of ownership and one specific type of large shareholder is investigated. New institutional investors have high potential to create value by enhancing the target firm's corporate governance system, which will be discussed in the following subsection.

2.3.4 New Institutional Investors as Shareholder Activists

In my dissertation, I focus on a specific type of large shareholder—new institutional investors. In my analysis, new institutional investors are defined as particular private equity and hedge fund investors that make partial stock acquisitions of 3% to 30% of voting rights in German publicly listed companies. These investors might be excellent corporate monitors to address the corporate governance problem in the public limited company (Wruck, 2008) because of their business model and organizational structure, which differentiate them from traditional institutions or other investors (Achleitner et al., 2010b). Indeed, new institutional investors recently gained importance in the activism scene (Gillan and Starks, 2007). Contrary to this, many models of large shareholders assume that large shareholders are homogeneous rather than heterogeneous (Cronqvist and Fahlenbrach, 2007). In theory, the question of whether these investors are able to create value for the firm by enhancing the corporate governance system is ambiguous and, thus, has to be addressed empirically.

The business model of private equity firms and hedge funds might be superior to other types of investors with respect to activism, especially because they have fewer regulatory barriers, fewer structural barriers, and an excellent organizational structure. Private equity firms and hedge funds belong to the alternative investment class, which differentiates them from traditional institutional investors, e.g., banks, mutual funds, pension funds, and insurance companies. As opposed to

traditional institutional investors, new institutional investors typically have a small number of experienced, wealthy, and sophisticated investors and operate relatively free from regulations (Achleitner et al., 2010b). They are typically limited partnerships, which are composed of limited partners (LPs) and general partners (GPs). While LPs are the investors who provide capital and are liable only to the extent of their investments, GPs are the fund managers who have management control and high-performance oriented remuneration (Achleitner and Kaserer, 2005). The exemption from various regulations gives them a competitive advantage to act as shareholder activists and pursue high-risk and other investment strategies, often leading to the reaping of higher returns compared to traditional institutional investor, who are burdened with diversification requirements, stricter insider trading regulations and constraints on particular investment strategies (Black, 1990). Furthermore, additional structural barriers of traditional institutional investors are potential conflicts of interest (i.e., mutual fund manager contemplating activism at potential clients), political constraints (pressure from local or state politics), and weak compensation incentives to engage in activism (Brav et al., 2008, p.1734). Moreover, the private equity and hedge fund managers have both higher incentive-based compensation schemes and longer lock-up periods compared to traditional investors (Achleitner et al., 2010b). Overall, this puts these new institutional investors in a good position to dominate the activism scene (Clifford, 2008), and they usually buy enough shareholdings to overcome, or at least minimize, the free-rider problem (Bratton, 2006).

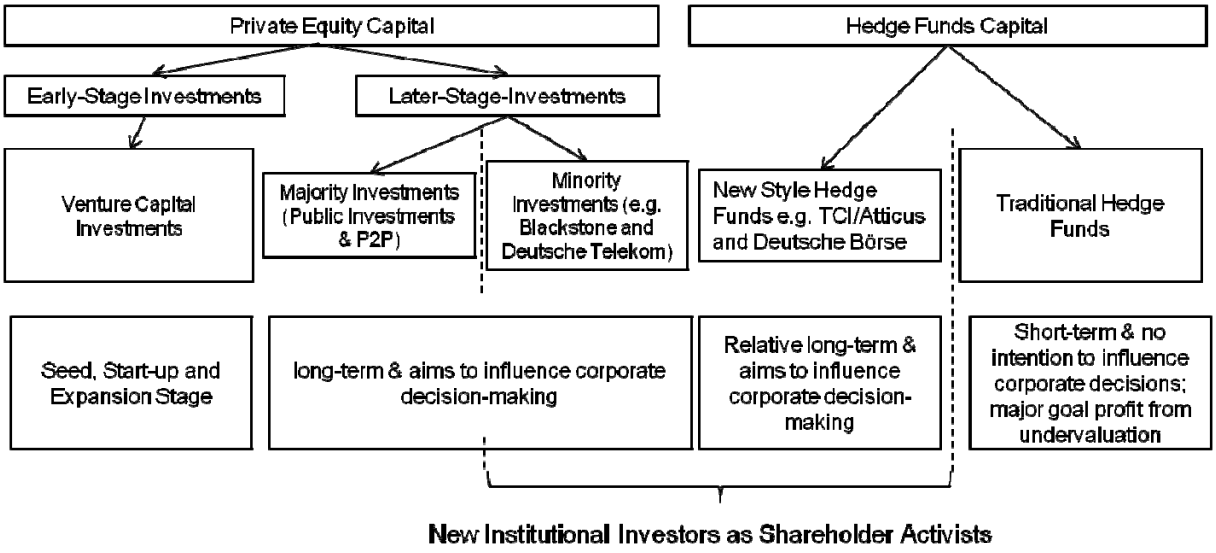
Private equity firms and hedge funds have various investment strategies besides strategies that aim to make profit through activism. Importantly, even though both have the potential to be excellent shareholder activists, their business models differ. Generally, a distinction between private equity firms and hedge funds is difficult because of a missing legal definition of both types of firms (Kaserer et al., 2007). Traditionally, the key differences are the time horizon of the investment and the investment strategy. While hedge funds are often described as short-term investors (average initial lock-up of ten months), private equity firms are usually viewed as long-term orientated because of their fund structure which commonly has a finite period and on average is ten years (Achleitner et al., 2010b). Moreover, both types of investors have high performance-based compensation[83] schemes but a crucial distinction is that the performance fees for hedge funds is typically calculated on unrealized gains (mark-to-market calculations) whereas private equity firms calculate their carried interest on basis of realized gains (Mietzner and Schweizer, 2008). Hedge funds, on the one hand, focus on various asset classes such as equity, debt, and derivatives (e.g., commodities and foreign exchange), whereas public equity is only one out of many strategies (Achleitner et al., 2010b). Hedge funds investment strategies can be broken down into three classes: market neutral strategies (e.g., equity market neutral, fixed

[83] Hedge funds on the one hand decompose compensation typically into management fee and performance fee with high water marks and hurdle rates to guarantee highly motivated fund managers (Mietzner and Schweizer, 2008). Private equity firms on the other hand, use an annual management fee of 2%, carried interest of 20%, and a hurdle rate of 8% (Achleitner and Kaserer, 2005; Lerner et al., 2009).

income arbitrage, convertible arbitrage),[84] profit-oriented strategies (merger arbitrage, distressed securities, activism),[85] and opportunistic strategies (global macro, long-short equities, short selling, emerging markets)[86] (Stadler, 2010, p.19). Activism is part of profit-oriented strategies, and even if only the minority of hedge funds engage in shareholder activism, these investors still managed to get most of the attention in the activism scene (Kahan and Rock, 2007). Private equity firms, on the other hand, mainly engage in equity investments where the investment focus is on private or public-to-private transactions (Achleitner et al., 2010b). The value drivers can be partitioned into operational, corporate governance, and financial engineering (Kaplan and Stromberg, 2009). They have the potential to create value through corporate governance enhancement by reducing agency costs and through mentoring or mitigating the conflict between large and minority shareholders (Achleitner et al., 2009b).

Figure 2.6 presents a structure to compare different types of private equity firms and hedge funds. It also defines new institutional investors as an intersection of both types of investors. Generally, private equity firm investments can be broken down into early- and later-stage investments (Kaserer et al., 2007); hedge fund investments can be partitioned into traditional- and new-style hedge funds (Achleitner and Kaserer, 2005).[87]

Figure 2.6: Definition of New Institutional Investors as Shareholder Activists



Source: Following Kaserer et al. (2007, p.14) and Achleitner and Kaserer (2005, pp.9-10).

[84] By following a market neutral strategy, hedge funds try to reduce risk to zero by exploiting arbitrage opportunities (Stadler, 2010, p.18).
[85] The profit-oriented strategy is based on the assumption that an event causes a revaluation of the target firm such as shareholder activism triggered by a partial stock acquisition (Stadler, 2010, p.18).
[86] The opportunistic strategy is based on the assumption that hedge can better assess the future market situation than other market participants, e.g., undervaluation (Stadler, 2010, p.18).
[87] Achleitner and Kaserer (2005, p.3) refer to new style hedge funds in their paper as private equity-style hedge funds.

I focus on partial stock acquisitions by new institutional investors in public equity. Partial stock acquisitions can be understood as a synthesis of two corporate governance mechanisms, namely (internal) monitoring by large shareholders and (external) monitoring by the market for control (Brav et al., 2008, pp.1773-1774). New institutional investors can be understood as an intersection of private equity firms and hedge funds that focus on minority investments in public listed companies as depicted in *Figure 2.6*. These investors address the agency problem not only between manager and shareholders (Agency Problem I, (Jensen and Meckling, 1976)) but also between majority shareholders and minority shareholders (Agency Problem II, (Achleitner et al., 2010b; Villalonga and Amit, 2006)). However, partial acquirers buy only relatively small stakes and thus it might be questionable how these investors exercise control because of their lack of formal control, (e.g., majority of seats in the board or at the general assembly). Tirole (2006, p.334) distinguishes between formal control and real control. Accordingly real control refers to the ability of investors with a minority equity position to communicate effectively their intention to the firm and shareholders. For this purpose, investors can use various means to communicate their interests such as a shareholder proposal, direct negotiation, use of media, proxy fights, litigation, or just outright takeover (Wruck, 2008).[88] The organizational structure, as well as the skills of the new institutional fund managers, will enable them to use these modes of communication effectively. Moreover, their bargaining power will also depend on the credibility of their intention (Bessler et al., 2008, p.8). Clifford (2008, p.324) stresses that the credibility of new institutional investors[89] differentiate them from traditional institutional investors. This is mainly a consequence of the opportunity to take over the target firm in the case that the investors are dissatisfied with the incumbent management's performance and attitude. Clifford (2008, p.325) states: "In essence, if the market for *partial* corporate control is not a sufficient disciplinary mechanism, the hedge fund may have the market for *complete* control at its disposal."

Overall, the new institutional investors' business model is suitable in addressing corporate governance problems and these investors are less likely to suffer from their own agency problems (Croci, 2007) because of their superior governance model with a lean organizational structure, high-incentive based compensation, and general partners who are highly experienced and bring key industry insights (Wruck, 2008). Indeed, some recent studies report evidence for hedge funds (Brav et al., 2008; Clifford, 2008; Klein and Zur, 2009) and for private equity firms (Weir et al., 2006) potential to be successful shareholder activists. While most of the abovementioned hedge fund studies focus on investment minority in public limited companies, the private equity studies mainly focus on leverage buyouts. Keep in mind that private equity firms and hedge funds are pursuing various kinds of investment strategies and those new institutional investors are only a subsection of both types of investors that have high potential to tackle corporate governance problems in public limited companies. Theoretical models, however, do not answer the question of whether these investors can be

[88] According to §122 I AktG any shareholders owning more than 5% of share can force an extraordinary general meeting in German public corporation.
[89] Clifford (2008) specifically talks about hedge funds but the same arguments apply to private equity firms.

successful activists, and many commentators question their ability to create true shareholder value. While some commentators argue that private equity firms exploit superior information and take advantage of tax breaks whilst creating little operational value (Kaplan and Stromberg, 2009), others accuse hedge funds of being only short-term orientated and thus more interested in short-term (trading) profits rather than long-term shareholder value enhancements (Kahan and Rock, 2007). The debate regarding the ability of new institutional investors to mitigate the corporate governance problem and create value in public limited company continues to receive much media and academic attention (Achleitner et al., 2010b). In fact, there is no unique answer to the question of whether new institutional investors indeed use their potential to create value by enhancing the corporate governance system. As a consequence, this question must be addressed using empirical evidence.

3 REVIEW OF EMPIRICAL LITERATURE

The purpose of this section is to give an overview of the empirical literature regarding my research question. The corporate governance systems of a public corporation can be decomposed into various mechanisms broadly classified into internal and external mechanisms.[90] The focus is on partial stock acquisitions by new institutional investors. These investors have great potential to create value and can be viewed as a synthesis of two corporate governance mechanisms, namely internal monitoring by large shareholders and external monitoring by the market for (partial) corporate control.[91] By examining the magnitude and determinants of the short-term valuation consequences following the announcement of partial stock acquisitions, I aim to shed light on whether this potential is indeed used. Because what I aim to show must be supported with empirical evidence, I apply event study and cross-sectional analysis methodologies. The empirical literature associated with my research question generally belongs to the vast body of empirical literature on corporate governance—more specifically to the strain of literature on ownership structure and firm performance.[92] In Subsection 2.3.1, I constructed a taxonomy of the existing literature on ownership and firm performance, which helps to set apart the different strands of empirical literature and helps to redefine the germane literature within the scope of my research question. This will help to understand better the results and implications of my investigation. This chapter reviews evidence from the German, US, and other European studies.

The remainder proceeds as follows: I begin by looking at the German literature with respect to partial stock acquisition announcements (Section 3.1); I then discuss the US literature (Section 3.2), before presenting the other European literature (Section 3.3);[93] and, I conclude by summarizing the most important results with some additional inferences (Section 3.4).[94]

3.1 GERMAN STUDIES

This section discusses evidence from empirical literature on partial stock acquisitions in the German stock market by focusing on comparative dynamic studies that use event study methodology for their analysis. The main papers regarding this strain of literature are discussed. Later chapters of my dissertation (e.g., experimental design, empirical data, and results) will go back to these papers and will compare them to my results. *Table 3.1* briefly describes the germane studies and *Table 3.2* summarizes the main results of the event studies.

[90] These mechanisms are discussed in Subsections 2.2.2 and 2.2.3. Excellent reviews on corporate governance are given by, e.g., Shleifer and Vishny (1997), Denis (2001), and Gillan (2006).
[91] Brav et al. (2008, p.1774) use a similar reasoning to explain the role of hedge funds.
[92] The different empirical approaches that examine the ability of large shareholders to enhance the corporate governance system are discussed and structured in Subsection 2.3.1.
[93] Of course the German literature is part of the European literature. However, because my research question focuses on partial stock acquisitions in Germany, I discuss the German literature separately.
[94] Throughout the literature review, I denote a paper in bold and italic when it is cited the first time and when I discuss the contents and results in more detail.

Meyer and Prilmeier (2006) investigate whether banks as large blockholders create shareholder value or exploit their position at the expense of the remaining shareholders during the time period between January 1997 and June 2006. To do this, they analyze the announcement effect of 92 sale transactions of banks in non-financial companies by using an event study methodology and a cross-sectional analysis approach.[95] The results of the *event study* suggest that banks reduce shareholder value. The 16-day [–10;+5] and 61-day [–30;+30] event windows show positive and significant cumulated average abnormal returns (CAAR) of 4.42% and 4.47%, respectively.[96] According to their results most of the announcement gains are captured in the event period running from event day –10 to +5. Furthermore, they detect a run-up[97] of CAAR more than 7-days previous to the announcement day which they explain with event day uncertainty and insider trading.[98] In their *cross-sectional analysis* they set up five multiple regression models and regress various explanatory variables based mainly on firm and transaction characteristics on CAR [-10;+5].[99] *Two* main findings stand out: *first*, the stock market response is strongly, positively correlated to block size the bank sells to the market; and, *second*, the degree of ownership of non-financial institutions prior to the transaction is strongly, positively correlated to the announcement effect. Hence, they interpret their findings as evidence that the German stock market does not prefer banks as large shareholders to exercise control. However, if the large shareholders are non-financial companies they seem to create shareholder value.[100] Overall, the results present evidence that the type of large shareholder truly matters.

[95] Meyer and Prilmeier (2006, p.6) actually also derive a sample of 38 bank purchase transactions but finally neglected these transactions because of the small number of events. They also state that the construction of the unique sample of 92 sales transactions of banks was particularly possible because of changes in the regulatory system and the business strategy of the German universal banks. Thereby, they especially highlight the abolishment of capital gain tax in 2002, which created incentives for banks to sell their shareholdings.

[96] Meyer and Prilmeier (2006) conduct the event study by using the standard OLS regression market model and the Fama-French regression. Both methodologies produce similar results but I only show the results of the market model regression in the main body of the text. The corresponding CAAR for the 16-day [–10;+5] and 61-day [–30;+30] of the Fama-French model are 4.46% and 5.55%, respectively.

[97] Jarrell et al. (1988) discuss different reason how to explain run-ups.

[98] They conduct a robustness check of their event study sample because it might be afflicted with stock illiquidity. Therefore they exclude most illiquid stocks and rerun the event study. The results are slightly less in magnitude but confirm the previous pattern of abnormal returns. The 16-day [–10;+5] and 61-day [–30;+30] event window show positive and significant CAAR of 3.51 % and 3.56%, respectively (Meyer and Prilmeier, 2006).

[99] They actually use the CAAR from the Fama-French model but state in their paper that the use of the CAAR from the market model does not change the results significantly (Meyer and Prilmeier, 2006, p.11).

[100] They analyze an investigation period running from 1997 up to June 2006. They use a quarterly dataset provided by the BaFin. Hence they have requested four BaFin sheets for each year. Subsection 5.2.4 will discuss the different derivation procedures of the German benchmark studies in more detail.

Table 3.1: Description of the German Benchmark Studies on Partial Stock Acquisitions

Study	Brief Summary	Main Results (1)
Meyer and Prilmeier (2006)	Study the role of banks as large shareholders and thereby examine announcement effects of bank sales transactions to determine whether these types of large shareholder create value for the target firm. *Methodology*: Event study analysis, cross-sectional analysis	*Event Study*: announcement effect (+). *Main Results:* Find that CAR are (+) related to block size sold by bank and (+) degree of prior ownership of non-financial blockholders. Overall, they conclude that large shareholder have the potential to enhance shareholder value if they are non-financial
Mietzner and Schweizer (2008)	Examine the valuation effect (short- and long-term) to partial stock acquisitions of private equity firms (PE) and hedge funds (HF). Moreover, they investigate the differences in invest behaviors and the sources for the stock market response. *Methodology*: Event study (short- and long-term), probit model, and cross-sectional analysis	*Event Study*: announcement effect (+). *Main Results:* While for PE the potential to reduce agency costs drives CAR, for HF it does not. Long-term market reaction (BHAR) is insignificant and even partially negative especially for HF. On the whole, both investors seem to create value in different ways
Dress and Schiereck (2008)	Investigate the magnitude and sources for the market response to new block formation (5%-49.9%) announcements of activist, strategic and financial block investors. In their cross-sectional models CAR are regressed on block, target ownership and target financial characteristics. *Methodology*: Event study, cross-sectional analysis	*Event study*: announcement effect (+). *Main Results*: CAR are (+) related to activist blocks, (–) related to market value of target firm, (–) related to valuation level. Cannot pinpoint whether monitoring or under-valuation drives CAR. Only report a modest relationship between target firm's existing ownership structure and announcement effect and conclude this is evidence that large shareholders do not effectively enhance monitoring of management
Bessler et al. (2008)	Scrutinize shareholder activism by HF and examine the magnitude and drivers for the short- and long-term market reactions. Decompose sample into three types of activism events namely stake-building (89%), intervention (6%), and PIPE (5%). *Methodology*: Event study (short- and long-term), cross-sectional analysis (short- and long-term)	*Event study*: announcement effect (+). *Main Results*: HF create shareholder value in short- and long-term. CAR are (–) related to degree of asymmetric information in the target firm; (+) related reputation and track record of the hedge fund. Hence, valuation effect might be driven by information asymmetries of target firm pre-transaction and type of investor
Achleitner et al. (2010a)	Study magnitude and determinants of wealth effect following the announcement of large block acquisitions (mean: 73.37%) by PE investors. Compare valuation effect of PE to control group of non-PE investors. Cross-sectional model based on monitoring hypothesis, incentive alignment hypothesis, and control variables. *Methodology*: Event study, cross-sectional analysis, bootstrap procedure	*Event study*: announcement effect (+). *Main Results* CAR are (–) related to equity stake of 1st and 2nd blockholder of target firm, (–) target's leverage, (+) related to tax liabilities, (+) related to target's under-valuation. They conclude that the negative correlation between ownership (size of 1st & 2nd block) and wealth effect management can be interpret as a reduction of agency costs because of additional monitoring of management (Agency Problem I) or the largest shareholder (Agency Problem II)
Stadler (2010)	Examines shareholder activism by analyzing the (short- and long-term) market reaction following the announcement of partial stock acquisitions by hedge funds. Uses three indicators to measure whether HF is an active or a passive investor (i.e., activism, reputation, takeover rumors). *Methodology*: event study (short- and long-term), univariate analysis of CAAR, cross-sectional analysis	*Event study*: announcement effect (+). *Main Results*: While the short-term valuation effects are positive the long-term effect are negative. The indicator for "activism" is (+) related with the valuation effect and (–) related with existence of a family large shareholder. Overall, HF create shareholder value and this value is not only attributed to an anticipated takeover

(1) The focus is on the main results with respect to my research topic and the methodology; PE:= private equity firms; HF:= hedge funds; "+":= positive effect; "-":= negative effect; "0":= neutral effect; BHAR:= buy-and-hold abnormal return; PIPE:= private investment in public equity

Mietzner and Schweizer (2008) claim to be the first who compare hedge funds and private equity firms regarding their ability to increase firm value when acquiring (at least 5%) control rights of a German publicly traded company. They examine a sample of 226 transaction decomposed in 67 hedge fund and 159 private equity transactions[101] during the 1993-2007 period. They pose *two* questions, namely whether the announcement effect of partial stock acquisitions is positive and whether a possible value creation can be attributed to the potential of these new institutional investors to reduce agency costs. A probit model is applied to investigate the investment behavior of private equity firms and hedge funds. Although the investment behaviors and targeted company characteristics for both types of investors are different, the potential to reduce agency costs in the target companies have similar characteristics.[102] In their *event study* they find on average positive announcement effects for both types of investors. The 41-day [-20;+20], and 11-day [-5;+5] CAAR of private equity firms accumulate to highly statistically significant 3.55% and 5.05%. The CAAR for the hedge fund transactions in the 41-day [-20;+20] and 11-day [-5;+5] window amount to 6.24% and 3.31%, respectively. Additionally, a slight run-up of excess return prior to the announcement day is detected—especially for the private equity sample. In their *cross-sectional analysis* they set up four models—one control model, two explanatory models and one agency model—and regress the CAR [–10;+10] on four groups of variables: corporate governance variables, firm characteristics, agency costs variables, and control variables.[103] Mietzner and Schweizer (2008, p.29) conclude that for private equity firms the potential to reduce agency costs drives the announcement effect. Additionally, they find evidence that the presence of an active blockholder prior to the acquisition reduces the potential to reduce agency costs and thus the market reaction. For hedge funds they do not find any evidence that potential of agency costs reduction drives CAR. However, they report a positive correlation between CAR and abnormal trading volume which they interpret as evidence that buy-side pressure partially drives the announcement effect. In their long-term analysis of buy-and-hold-abnormal-returns they find further evidence that private equity firms try to reduce agency costs when investing in publicly traded companies, whereas hedge fund do not.

[101] The private equity sample includes announcements of transaction in subsidiaries of public listed firms. They include subsidiaries in the sample because they assume that the announcement effect of the subsidiary will also apply to the parent company. The sample without subsidiaries reduces to 108 transactions.

[102] The main results of the probit model are that both hedge funds and private equity firms targeting companies with similar opportunities to reduce agency costs but these targets differ in market capitalization and relative interest payments. Moreover, the investment behavior is significantly different between hedge funds and private equity firms. Whereby hedge funds' average (median) stake after the transaction is 12% (8%), the private equity firms' average (median) stake after the transaction is 45% (29%). Furthermore, hedge funds favor targets with a higher degree on shareholder concentration (measured by blockholders in the quarter before the transaction) and additionally they prefer companies where the largest shareholder is likewise a hedge fund. Interestingly, they state that for the whole sample the mean (median) size of shares acquired is 73.37% (86.75%). Hence, one should remark that they rather examine majority stake acquisitions or rather takeover attempts than large block acquisition because on average any investor purchases distinctively more than 50% (majority stake).

[103] The model specification and interpretation of Mietzner and Schweizer (2008) results are partially confusing and less well presented. For instance, they do not use control variables for their explanatory models and the agency model which does not seem convincing. The model specification and inclusion of certain variables seem to be driven by data-mining rather than a comprehensible and well developed econometrical model.

Dress and Schiereck (2008) analyze the magnitude and drivers for the announcement effect of new (minority) block formation[104] between 5% and 49.9% in German publicly traded companies of the 1997–2007 period. They decompose the transactions into three groups: activist blockholders, strategic blockholders, and financial blockholders with the number of transactions equal to 18, 26, and 41, respectively.[105] In their *event study analysis* Dress and Schiereck (2008) find significant CAAR after the announcement of new block formation independent of the acquirer's type. For all transactions the 3-day [–1;+1], 11-day [–5;+5], and 41-day [–20;+20] windows show highly statistically significant CAAR of 8.0%, 8.7%, and 10.7%, respectively. For activist blocks[106] the CAAR in the same 3-day, 11-day and 41-day event windows cumulate to highly statistically significant 11.8%, 11.5%, and 12.1%, respectively. The announcement effect for strategic block is comparable in terms of economic and statistical magnitude whereas for financial blocks this effect is less pronounced yet still significant. As in Meyer and Prilmeier (2006), a run-up in the abnormal returns previous to the announcement is detected. Dress and Schiereck (2008) explain this occurrence with the possibility of increased buy-side pressure and leakage of information before the announcement day.[107] In their *cross-sectional analysis* they specify four regression models and regress CAR from the 3-day [–1;+1] window on explanatory variables. They decompose the explanatory variables into block characteristics, target ownership characteristics, and target financial characteristics based on the three hypotheses (i.e., monitoring, undervaluation, and anticipated takeover) put forward by Choi (1991) and other factors that may potentially affect the announcement effect.[108] They report a positive correlation between activist blocks and announcement effect, while controlling for block, target ownership, and target financial characteristics. In addition, they find a negative correlation between announcement effect and size (log-of-market value) of the target and valuation level (market-to-book ratio).[109] Overall, Dress and Schiereck (2008, p.20) conclude that little evidence exists that the inherent target's ownership structure influences the announcement effect, which they interpret as further evidence supporting previous findings from static studies[110].

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[104] This means that they exclude transaction where a large shareholder already has a stake in the company pre-transaction and just buys additional shares.

[105] With respect to the intention of the large shareholders, they apply the distinction of Bethel et al. (1998).

[106] Dress and Schiereck (2008, p.15) state in their paper that one should be cautious with the results because of the small sample size.

[107] According to the reporting standards of §21 AktG there could be a discrepancy of up to nine days between transaction day and announcement day which increases the likelihood of leakage prior to the market announcement. Moreover, the disclosure of voting rights in accordance with §21 AktG is discussed by Becht and Boehmer (2003) and I treat it separately in the section on empirical data (see Chapter 5).

[108] It is worrying, however, that they do not use control variables (e.g., industry fixed effects, time fixed effects) in their multiple regression analysis.

[109] Dress and Schiereck (2008, p.20) state that given a weak market for corporate control in Germany it is sensible to attribute most of the announcement effect to either the monitoring or undervaluation hypothesis. They discuss, however, that their findings of a positive relation between activist and abnormal returns does not allow them to clearly assign the abnormal returns to either of these two hypotheses. They interpret the relationship of target's size with the announcement effect as evidence that the governance system is better in larger firms thanks to a better external monitoring system (e.g., increased monitoring by analysts, regulators.). They interpret negative relationship between valuation level and abnormal returns as either as an undervaluation signal or decreased incremental benefit from monitoring for blockholders in targets with high growth opportunities. Keep in mind that a high market-to-book ratio is frequently assigned to anticipate high growth opportunities as for instanced discussed by McNichols et al. (2010).

[110] For a differentiation between static and dynamic studies - see Subsection 2.3.1.

Bessler et al. (2008) analyze the short- and long-run effects of shareholder activism of hedge funds in German public listed companies and their effect on shareholder value from January 2000 until June 2006. The sample for the event study and cross-sectional analysis consists of 324 and 232 transactions, respectively. They examine also the buy-and-hold abnormal return (BHAR) for the one, two and three year period and the cross-sectional variation of the one year BHAR.[111] They discuss that, at the time of the investigation, there are substantial disclosure differences in the German (§§21 WpHG) and US (Schedule 13D) stock markets, such as the requirements to report the intention of the stake and the different thresholds.[112] They distinguish between three types of events: stake-building (N=288), intervention (N=21), and private investment in public equity (PIPE) (N=15). They confine their analysis to transactions where less than 30% shares are acquired whereby the other German studies also examine transactions of more than 30%. In their *event study*, CAAR [-15;+15] and CAAR [-3;+3] cumulate to highly significant 3.5% and 1.48%, respectively. The BHAR are significant and positive for all three periods also. In their *cross-sectional analysis* they find that the shareholder value effect is negatively correlated to the degree of asymmetric information (measured by relative size of the target firm) in the target firm prior to the event. In the short-term analysis, they find some evidence that suggests that reputation and track record of the hedge fund is positively related to the market response. Overall, Bessler et al. (2008, p.23) conclude that their findings support the idea that activist blockholders such as hedge funds have the potential to increase shareholder value in the short- as well as long-run.

[111] They use BHAR [-40;+240] as independent variable for the cross-sectional analysis

[112] As of 12 August 2008, Germany has a comparable regulation to the US. Pursuant Section 27a WpHG investors have to inform the issue about their intentions and objectives if their shareholding achieves or exceeds the 10% threshold or an upper threshold according to Sections 21, 22 WpHG et seq.

Table 3.2: Results of the German Benchmark Studies on Partial Stock Acquisitions

Study[1]	Sample Period (N)[2]	Event Window[3]	CAAR in %
Meyer and Prilmeier (2006)	1997-2006 (92)	[-10;+5]	4.42***
		[-30;+30]	4.47*
Achleitner et al. (2010a)	1998-2007 (48)	[-2;+2]	11.77***
(PE transactions)		[-20;+20]	14.95***
(2010a)	1998-2007 (145)	[-2;+2]	3.10***
(Non-PE transactions)		[-20;+20]	5.11**
Mietzner and Schweizer (2008)[4]	1993-2007 (226)	[-5;5]	4.46***
(All transactions)		[-20;+20]	4,47***
Mietzner and Schweizer (2008)	1993-2007(159)	[-5;5]	5.05***
(PE transactions)		[-20;+20]	3.55***
Mietzner and Schweizer (2008)	1993-2007 (67)	[-5;5]	3.31***
(HF transactions)		[-20;+20]	6.24***
Dress and Schiereck (2008)[5]	1997-2007 (85)	[-5;+5]	8.7***
(All transactions)		[-20;+20]	10.7**
Dress and Schiereck (2008)	1997-2007 (18)	[-5;+5]	11.90***
(Activist block transactions)		[-20;+20]	12.10**
Dress and Schiereck (2008)	1997-2007 (26)	[-5;+5]	12.7***
(Strategic block transactions)		[-20;+20]	13.1**
Dress and Schiereck (2008)	1997-2007 (41)	[-5;+5]	4.8**
(Financial block transactions)		[-20;+20]	8.6*
Bessler et al. (2008)	2000-2006 (324)	[-5;+5]	2.59***
		[-15;+15]	3.50***
Stadler (2010)	2000-2008 (136)	[-5;+5]	2.49***
(All transactions)[6]		[-20;+20]	3.47***
Stadler (2010)	2000-2008 (28)	[-5;+5]	4.29**
(Activism)		[-20;+20]	8.75***
Stadler (2010)	2000-2008 (68)	[-5;+5]	3.21***
(Repuation)		[-20;+20]	5.32***
Stadler (2010)	2000-2008 (12)	[-5;+5]	2.89*
(Takeover rumors)		[-20;+20]	9.09***
6 studies, during 1993-2008 period; N_{mean}=151; N_{median}=136[7]		$CAAR_{mean}$=5.5% , $CAAR_{median}$= 3.8%[8]	

(1) This column presents the different studies. If a study uses different samples or I report different sample for one study I indicate category in italic in parentheses in the line below the name of the author; (2) *N*:= Number of observation; (3) Event window in days; (4) Mietzner and Schweizer (2008) decompose their sample into private equity (PE) and hedge fund (HF) transactions. This line presents the results for the whole sample, the next two lines for the PE and HF sample separately; (5) Dress and Schiereck (2008) partition their sample into activists, strategic and financial blockholders. This line reports the results for all transactions, the next three lines for each of the categories separately; (6) Stadler (2010) divide their sample into transactions related their three indicators for activist hedge funds (i.e., activism, reputation, and takeover rumors). This line shows the results for all transactions and the next lines for the each of the categories separately. (7) N(mean) and N(median) is the arithmetic mean and median sample size respectively for the studies shown above, except the sub-categories for Mietzner and Schweizer (2008), Dress and Schiereck (2008) and Stadler (2010) but including the Non-PE and PE sample of (Achleitner et al., 2010a); (8) CAAR(mean) and CAAR (median) is the arithmetic mean and median of CAAR respectively presented above for all studies except Meyer and Prilmeier (2006) because they examine sale transactions, excluding the sub-categories for Mietzner and Schweizer (2008), Dress and Schiereck (2008) and Stadler (2010) but including the Non-PE and PE sample of (Achleitner et al., 2010a). For the calculation of the mean and median value the first CAAR presented for each study is used, e.g., for (Achleitner et al., 2010a) I used CAAR[-2,2] and for Mietzner and Schweizer (2008) [-5;+5] is used. I usually tried to use CAR [-5;+5] to make it comparable among one other but also because CAR[-5,+5] is used as explanatory variable in my cross-sectional regression analysis. Significance level, where 1%, 5%, and 10% level are ***, **, *.

Achleitner et al. (2010a) claim to be the first paper that examines the wealth effect of private equity investments in German public listed companies.[113] They scrutinize the abnormal returns of 48 private equity investments of at least 25%[114] voting rights during the period of June 1998 and June

[113] Previous working paper is Achleitner et al. (2008).

[114] Achleitner et al. (2010a, p.8) state that their decision to focus on majority acquisitions of at least 25% is motivated by the opportunity to block important decisions when holding at least a quarter of the company's voting rights at the general share-holders meeting according to the German Stock Corporation Act (AktG).

2007.[115] In almost 40% of the events the private equity firm eventually takes the target private. Thus, this highlights that the line between partial and full control acquisitions is blurred, and demarcation is not always possible. Additionally, the cross-sectional variation in CAR is analyzed by deploying seven multiple-regression models.[116] In their analysis, they put emphasis on the analysis of the extent that the Agency Problem II (between large and small shareholders) is more severe than the Agency Problem I (between managers and owners). In their *event study* they find positive and highly statistically significant abnormal returns on the announcement day of 5.9%. Most of the gains seem to be captured by the 5-day CAAR which amount to highly significant 11.77% but CAAR over the whole event period are even higher and amount to 14.95% which is again significant at the 1% level. In a comparison to the CAAR of private equity firms to a control sample of non-private equity firms (e.g., banks, insurance companies, and industrial firms) they find that private equity firms produce significantly higher CAAR according to the test of the differences in means. For their private equity sample they only find significant excess returns in the five days running from –2 to +2 around the announcement day. Thus, Achleitner et al. (2010a, p.11) state there is no leakage of information and they interpret this as evidence that the market is information efficient. Surprisingly and contrary to all other German studies, they do not report run-ups of excess returns. In their *cross-sectional analysis*, they specify three multiple regression models based on two main hypotheses, namely the monitoring and incentive alignment hypothesis and various control variables. Moreover, they develop four additional models to examine additional hypotheses associated with the reputation of the private equity investor, a possible delisting of the target, the free-rider problem in the target firm and influence of different types of sellers of the shares acquired by the private equity firms. In their investigation they find three key findings. *First*, they report a positive correlation between the announcement effect and the stake of the first as well as the second large shareholder in the target company. Achleitner et al. (2010a, pp.14-16) state that one way of interpreting this result is that either large shareholdings of the first and second blockholder increase monitoring of management (i.e., enhancement of the corporate governance system) or monitoring of the largest shareholder which may extract private benefits at the expensive of the remaining shareholders. *Second*, they find that the announcement effect is positively correlated to the amount of tax liability implying that potential tax saving may drive abnormal returns. *Third*, they find that the level of undervaluation of the target company drives the announcement effect.

Stadler (2010) examines, in his doctoral dissertation, the success of shareholder activism of hedge funds in German public listed companies by analyzing a sample of 136 partial stock acquisition by hedge funds in the period between 2000 and 2008. Therefore, he conducts a short- and long-run analysis of the abnormal returns as well as a cross-sectional analysis. As do Bessler et al. (2008), he stresses the point that there are substantial differences in disclosure requirements between US and

[115] Achleitner et al. (2008, p.13) state that they have constructed a unique database that includes all private equity acquisition in German exchange listed companies. This is a really bold assertion and is surely wrong.
[116] They develop four additional models to test additional hypotheses namely the reputation, delisting, free-rider problem and influence of buying from different types of seller, e.g., family, corporation, and stock market.

German studies. In particular, he points out that in Germany the intention of the shareholder is not observable, because unlike in the US (Schedule 13D filing), in Germany the investor does not have to indicate the intention of his block. Therefore, he uses three indicators to gauge the shareholder's intentions, namely "activism,"[117] "reputation of hedge funds," and "takeover rumors." In the *event study* the CAAR for the 5-day [–20;+20], 11-day [–20;+20], and 41-day [–20;+20] event window amount to 1.23% (significant at 5%-level), 2.49% (significant at 1%-level) and 3.47% (significant at 1%-level), respectively. Additionally, in the univariate analysis he shows that CAAR are more pronounced for the three indicators of activism. CAAR in the [–20;+20] window is strongest for the category takeover rumors with 9.09%, followed by activism with 8.75%, and reputation of hedge funds with 5.32%. He discusses that CAAR for this group of shareholders activists is comparable to the same effect in the US market. An investigation of the development of CAAR over the event period reveals that in the event study there is a run-up ten days before the announcement day. Meyer and Prilmeier (2006) and Dress and Schiereck (2008) report similar findings. In the long-term analysis of abnormal return he finds a negative, but not significant, excess return. The six *cross-sectional* regression models specified in his analysis regress the CAR for the 41-days [–20;+20] window on the explanatory variables based on 19 hypotheses and control variables. When controlling for other variables only the indicator for "activism" stays significant whereas the two other remain insignificant. Furthermore, he finds a negative correlation between the existence of a family ownership and announcement effect which implies that the ownership structure and the type of large shareholder may drive abnormal returns. Overall, Stadler (2010, pp.162-163) concludes that the role of the existing ownership structure in the target firm is a defining difference of the US studies. Furthermore, shareholder activism, he points out, creates shareholder value and this value is not only attributed to an anticipated takeover as suggested by some American studies.

In conclusion, the review of studies on partial stock acquisitions announcements and their impact shareholder value in the German stock market reveals important insights. In general it is apparent that there is indeed meager empirical evidence on the importance of the market for partial control. This might be explained by the importance of large shareholders (static view) and the weak, almost non-existent market for control (dynamic view) in Germany. However, as pointed out in the literature (see Subsection 2.2.3), there is a market for minority stakes in Germany; and, this market for partial control may act as substitute to the weak market for corporate control. Furthermore, recent developments in German corporate governance system also point into the direction that the capital market gains importance (see Section 2.1). Accordingly, further research along these lines seems to be important. Moreover, there are substantial differences in reporting requirements between Germany and the US as discussed by Bessler et al. (2008) and Stadler (2010). In Germany (§§21 WpHG in comparison to the USA Schedule 13D filing) the investor does not have to disclose his intentions in the investigation period, and there are different reporting thresholds compared to the US regulations. Overall five key

[117] He assumes that if a hedge fund voluntarily publishes its transaction this indicates that the investor is active.

results stand out when reviewing the studies. *First*, studies on the German stock market find, on average, significant positive stock market responses to the announcement of partial stock acquisitions. When looking at Table 3.2 the mean and median announcement effect for partial stock acquisitions across all German studies amounts to 5.5% and 3.8%, respectively. While this number has to be interpreted cautiously, it still indicates that the market clearly reacts positively to the announcements. Interestingly, it is noteworthy that no standard way exists in how the respective studies choose the window used to calculate the announcement effect (e.g., 11-days, 21-days). On the contrary, different event windows are used to calculate the announcement effect. *Second*, the type of large shareholder seems to matter because different announcement effects are reported for different types of shareholders. While the announcement effect is positive for new institutional investors (hedge funds and private equity firms), the evidence for traditional institutional investor is to the contrary. Additionally, the evidence indicates that the intention of the shareholder (e.g., strategic, active investor) engender more pronounced wealth effects than financial blocks. The empirical evidence points out that there is substantial shareholder heterogeneity; therefore, the assumption that only the degree and not the nature of control matters seems to be critical to maintain. *Third*, even though the short-term valuation consequences seem to be positive, the long-term consequences are less well understood. *Fourth*, all studies except Achleitner et al. (2010a) report run-ups of abnormal returns previous to the announcement day. There are different ways of interpreting this finding such as leakage of information (e.g., illegal insider trading, media speculation, bidder's foothold) or event uncertainty. *Fifth*, the cross-sectional variation of abnormal returns is ambiguous. While different studies find various drivers for the announcement effect of partial stock acquisitions almost none of the studies is able to bring up a convincing story to explain the sources for the valuation effect. The monitoring hypothesis and the undervaluation hypothesis seem to be important drivers for the valuation effect. Nevertheless, the influence of these coexisting hypotheses is difficult to disentangle. Various different econometrical models are deployed to address the magnitude and source of the announcement effect. The reasons for failing to find a clear answer are diverse and can be ascribed to methodological, econometrical, theoretical as well as structural issues. Nevertheless, further research could be fruitful and could enable to understand the functioning and the reasons for the stock market response and the ambiguous results. Overall, at least in the short-term, partial stock acquisitions seem to create value—while there seems to be a consensus about this relation, the main sources are blurred.

3.2 US STUDIES

This section gives an overview of US findings, with respect to comparative dynamic studies on partial stock acquisition announcements and their impact on valuation consequences. At first glance the US body of literature is much more comprehensive than the German studies. The first study dates back to

1981, and overall I present the results of 21 studies. *Table 3.3* gives a brief description and summarizes the main results; *Table 3.4* outlines event study results.

Madden (1981) is the first paper, to the best of my knowledge, that uses the event study methodology to examine stock market responses to partial stock acquisition announcements. In his paper he tests the stock market efficiency by examining 86 partial stock acquisition announcements in the New York Stock Exchange quoted companies in the period between November 1977 and June 1979. Thereby the monthly abnormal returns are analyzed in the 22 months around the announcement day. CAAR are positive and statistically significant in the month of the announcement (M=0), the month after (M=1), and the third month before the announcement (M= –3), whereas they are insignificant in the remaining months before and after the transaction. This result presents evidence that the market responds positively and is semi-strong efficient. Additionally, he attributes the run-up of AR three months prior to the announcement either to buying pressure of the acquiring firm or the information content reflected in the increased abnormal trading volume in the target's stock price prior to publication.

Holderness and Sheehan (1985) focus on 99 partial acquisitions by six controversial investors, better known as corporate raiders,[118] between 1977 and 1982 on the US stock market. They compare these transactions to a sample of randomly-chosen, less controversial investors, and they test three (mutually consistent) hypotheses: the raiding hypothesis, the improved management hypothesis, and the superior security analysis hypothesis. Moreover, for two years following the initial transaction they trace investors' activities in the target firm and calculate CAAR for intermediate events depending on the outcome, i.e., successful/unsuccessful reorganization, repurchase, and others. To appraise the follow-up activities, they calculate the total return to stockholders by following a similar approach as Mikkelson and Ruback (1984). When they focus on the announcement day, Holderness and Sheehan (1985) find positive and highly statistically significant abnormal returns for the firm targeted by the corporate raiders. Additionally, they find that CAAR for the six controversial investors are higher than the announcement effects of the randomly chosen sampled—at least on the announcement day. Furthermore, findings in the total return to shareholders analysis do not support the raiding hypothesis. Although the analysis does not allow to pinpoint the sources for the CAR, nor does it allow us to see the exact market role of each of the six corporate raiders, Holderness and Sheehan (1985) posit that the improved management hypothesis could be one reasonable interpretation for the positive valuation effect. Holderness and Sheehan (1985, p.577) conclude, however, that further research is needed to separate the improved management from the superior security analysis hypothesis and to separate their respective influences on the valuation effect.

Mikkelson and Ruback (1985) examine the announcement effect of partial block acquisitions of a sample of 337 transactions. Additionally, they calculate CAAR at the announcement of selected

[118] The six investors are Carl Icahn, David Murdock, Irwin L. Jacobs, Victor Posner, Carl Linder, and Charles Bluhdorn These investors are viewed as reducing the wealth of the remaining shareholders.

outcome[119] and intermediate[120] events following the initial announcements to scrutinize these additional occurrences alone and to calculate the total valuation effect of the two-day excess return.[121] They emphasize that these types of events (initial, intermediate, and outcome) have been examined individually by previous studies. Their applied procedure (i.e., the total valuation effect), however, provides a comparable measure of the total valuation effect depending on different outcomes of an investment process initiated by the announcement of a partial stock acquisition. Lastly, they analyze whether acquirers, who frequently purchase blocks (such as corporate raiders), create value for the shareholders and for themselves. In the two-day [-1;0] window they find positive and statistically significant CAAR for acquiring as well as targeting firms. There is a run-up of CAAR previous to the announcement day which they think could be explained by the possible reporting lag (days between attainment of 5% stake and obligatory 13-D filing) of up to ten days. The total valuation effect analysis reveals variation in returns for both acquiring and targeting firms across different events. The total valuation effect is positive and significant for the target, regardless of what the outcome is. Nevertheless, the effect is the largest in the case of a complete takeover by either the acquiring firm or a third party. While the total valuation effect for an acquiring firm is zero in the case of a complete takeover by the acquiring firm, the valuation effect for the remaining outcomes (i.e., repurchases, sale of shares or third party takeover) is positive and significant. Moreover, they find no evidence that the total valuation effect is different depending on whether the acquirer is classified as a frequent investor for both acquiring and targeting firm.

Wruck (1989) analyzes stock market responses to 99 private sales transactions (i.e., private placement) of public equity of the 1979-1985 period. While previous findings in the literature suggest a negative announcement effect to new equity issues, she discovers positive and significant stock market responses. In the *cross-sectional analysis* she finds evidence that CAR are significantly related with change in ownership concentration following the acquisition. There is a positive correlation between valuation effect and change in ownership concentration in the target firm if the level of ownership concentration is either low (0-5%) or high (≤ 25%). In between high- and low-concentration levels, the relationship is diametrically opposed, supporting the management entrenchment hypothesis which implies that blockholders reduce target's shareholder wealth. Additionally, CAR is negatively correlated to the acquirer's current and anticipated connection to the firm[122] which could be interpreted as further evidence of the management entrenchment hypothesis. Although the findings indicate that large shareholders have the potential to enhance firm value through improved monitoring, they also suggest that large shareholders may help management entrenchment and thus reduce firm value.

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[119] Mikkelson and Ruback (1985, p.524) decompose the category outcome into complete takeover, a complete takeover by another firm, a repurchase by the investment position by a target firm, and a sale of shares in the market or to a third party.
[120] Intermediate events include for instance the announcement that the acquiring firm or a third party announces a takeover proposal (Mikkelson and Ruback, 1985, pp.538-539)
[121] For more details on how they measure the total valuation effect see Mikkelson and Ruback (1985, p.541).
[122] The Purchaser Control dummy variable measures this current or future relationship. This dummy variable takes the value 1 if the acquirer sit on the board of directors of the target firm or intends to take control and 0 otherwise (Wruck, 1989, p.18)

Eyssell (1989) scrutinizes stock market reaction to 62 partial acquisitions between 1973 and 1981 and its impact on firm operating and financial performance in the long-run as measured by financial statement data. He conducts an event study analysis by examining the changes in the financial and operating performances at 2-, 3-, 4-, and 5-year intervals before and after the announcement day. He finds a positive and significant stock market response to the announcement of the partial acquisitions, which is in line with the literature of corporate acquisitions. However, he finds no subsequent effects on firm performance as measured by financial operating performance ratios (e.g., profitability, expenses level, and asset utilization) and other ratios (e.g., liquidity, financial leverage, and dividend payout). Hence, the positive stock market response is not reflected in a subsequent change of performance variables based on accounting measures.

Choi (1991) examines the magnitude and sources of the announcement effect of 322 partial stock acquisitions[123] in the period from 1982 to 1985. Conducting an event study, Choi (1991) examines control transfer events (i.e., proxy fights, management turnover, and takeover) following the initial partial stock acquisition. He uses three hypotheses to explain the positive valuation effects: the control transfer hypothesis, the anticipated takeover bid hypothesis, and the undervaluation hypothesis. He uses three steps to examine his data: *first*, he examines the abnormal returns in the short- and long-term event period and post-partial stock acquisition period around the event day of the partial stock acquisition; *second*, he assesses the ex post likelihood of a control-transfer event following the partial stock acquisitions; and, *third*, he evaluates and compares the valuation effect of a group of events with and without control transfer events. Choi (1991) finds a positive and significant announcement effect of partial stock acquisition on the announcement day. The findings in the data also suggest a leakage of information because there is a run-up of the AR up to ten days prior to the announcement day. The analysis of the control transfer events suggests that partial stock acquisitions are systematically followed by control-related outcomes and that the valuation effects of these outcomes are positive. Moreover, the abnormal returns in the period prior to the announcement of the partial stock acquisitions are negative. He suggests that the negative abnormal returns prior to the acquisition may also indicate that the partial stock acquisition is prompted by the acquirers' exception of target firm's poor performance. Overall, Choi (1991, p.392) concludes that his findings attribute the valuation effect either to the control transfer or anticipated takeover bid hypothesis but not to the undervaluation hypothesis.

Barclay and Holderness (1991) examine the announcement effect and changes in the target company following 106 negotiated block trades of at least 5% of voting rights in NYSE- and AMEX-listed firms of the 1978-82 period. Thereby they try to fill the gap in studies on changes in ownership structure and blockholder heterogeneity which were hitherto neglected by the literature.[124] They

[123] Choi (1991) calls partial stock acquisitions toehold acquisitions.

[124] They emphasize that previous papers mainly focus on the level of ownership and its impact on corporate decisions. Moreover, previous studies focus less on different types of blockholder even though evidence exists that blockholders incentive and expertise are not homogenous—see Holderness and Sheehan (1985). Hence, they focus on studying whether specific expertise and incentives of blockholders have an impact on firm value.

examine whether the type of blockholder matters rather than analyzing simply the concentration of ownership. For their sample they find highly significant CAAR around the announcement day. The CAAR are also positive and statistically significant over a longer event window [–40;+40] and even increase after a one-year event period [–40;+240] following the transaction to 16.5%. CAAR are positive but less pronounced for firms which remain independent in comparison with companies which have been taken over. Moreover, CAAR are more pronounced if control changes to the blockholder and the management does not interfere with the blockholder's intention to influence corporate policy. In addition, they find that there are significant changes in the target firm, such as top management turnover following the transaction. Barclay and Holderness (1991, pp.877-878) conclude that *two* key findings stand out. *First*, negotiated block trades can be identified as corporate control events, even if the acquirer does not take over the target. *Second*, both the concentration and type of the blockholder matter.[125]

Shome and Singh (1995) examine the stock market response to the announcements of 92 new large blockholders entering a firm in the period between 1984 and 1986.[126] They confine their analysis to new larger shareholders in order to test the impact and consequences of the entrance of a new, large shareholder in a target firm without any large shareholdings. They distinguish between different types of investors (institutional blockholders, corporate blockholders, and individual blockholders). In their cross-sectional analysis they use firm and blockholder specific characteristics and blockholder-induced changes to scrutinize sources of the wealth effect. Furthermore, they examine operating and performance variables within an interval three years prior and two years following the initial partial stock acquisition. They find highly significant and positive weekly AR in the first week following the announcement of the block transaction. Overall their findings suggest that there is only weak evidence of increased corporate efficiency (e.g., operating, performance variables) through monitoring by active blockholders. In turn, Shome and Singh (1995, p.12) conclude that the wealth effect is a result of the market expectations of possible future takeover gains (e.g., synergies) and/or the reduced likelihood of managerial opportunistic behavior in the future.

Bethel et al. (1998) analyze 146 block purchases of Fortune 500 firms and the stock market response to block acquisition as well as operational and corporate governance changes following the block acquisition of the 1980-1989 period. They focus in particular on *three* questions: *first*, on whether activist blockholders target specific type of target firms; *second*, on whether activist blockholders aim to pursue specific types of operational and corporate governance alterations; and, *third*, on whether or not there is an impact on a firm's performance following the acquisition of a large share by an activist blockholder. They distinguish between two primary groups of shareholders—blockholders and insiders—and thus follow McConnell and Servaes (1990). Furthermore, they subdivide blockholders into three types of large shareholders (activist, financial, and strategic

[125] In closing Barclay and Holderness state that their findings suggest, "the modern public corporation is like any other asset in that its value depend in part on the skills of its owners" (Barclay and Holderness, 1991, p.878).
[126] Hence, this is a similar approach like the one used by Dress and Schiereck (2008).

blockholders). They find positive and highly significant CAAR for activist blockholders, statistically insignificant CAAR for financial blockholders, and statistically insignificant (even negative) CAAR for strategic blockholders. Although takeovers did not happen commonly, Bethel et al. (1998, p.631) conclude that, in the 1980s, activist blockholders enhanced the corporate governance system, which highlights the importance of the market for partial control to reduce agency cost.

Allen and Gordon (2000) scrutinize 402 large equity acquisitions of nonfinancial blockholders and their impact on long-term changes in investment and operating performance in the period from 1980 to 1991. In addition to examining the announcement effect, they conduct a cross-sectional analysis to study the determinants of the changes in investment and operating performance after the initial transaction. Allen and Gordon (2000, p.2791) state that non-financial companies are different to other type of blockholders because of the possibility to form business agreements, alliances, or joint ventures between the target firm and corporate owners. Additionally, they attempt to address why non-financial corporation's hold large shareholdings. For their sample, the findings are positive and highly statistically significant CAAR [–10;+10]. Allen and Gordon (2000, p.2813) conclude that firms involved in certain business agreements benefit from concentrated ownership because of decreasing costs associated with the alliance or ventures between firm and corporate blockholders. They report a positive correlation between concentrated ownership and operating performance as well as investment expenditure, when corporate blockholders' stakes is combined with product market relationships, particularly in research and development (R&D) intensive industries. They view this relation as consistent with the argument that concentrated ownership enables firms to decrease holdup and contracting costs involved in creating special assets.

Table 3.3: Description of the US Studies on Partial Stock Acquisitions

Study	Brief Summary	Main Results
Madden (1981)	Examines stock market efficiency associated with partial stock acquisitions (13-D filing) in publicly listed companies. *Methodology*: Event study	*Event Study:* Announcement Effect (+). Significant and positive monthly AR in month 0, 1, and –3. *Main Result*: Findings are consistent with semi-strong form of market efficiency
Holderness and Sheehan (1985)	Scrutinize the wealth effect of transactions by six corporate raiders (CRs) in exchange listed companies (13-D filing) and investigate the role of these type of investors. *Methodology*: Event study and total return analysis to stockholders depending on initial and intermediate events (e.g., successful or unsuccessful reorganization)	*Event Study:* Announcement Effect (+) for CRs and (0) for random sample. *Main Results:* No evidence supporting the raiding hypothesis. They are unable to pinpoint the sources but discuss two hypotheses that are consistent with the results: 1) the improved management hypothesis and 2) superior stock picking analyst hypothesis
Mikkelson and Ruback (1985)	Examine partial acquisitions (13-D filing) and investigate (1) the wealth effect, (2) the total valuation effect depending on outcomes (e.g., complete takeover, target repurchase), and (3) the role of frequent acquirers (i.e., CRs). *Methodology*: Event study; univariate analysis of CAAR; analysis of total valuation effect to acquirers and targets	*Event Study:* Announcement Effect (+). *Main Results:* Total valuation effect: different returns for both acquiring and targeting firms across different events. No significant differences in total valuation effect for frequent purchaser (no evidence for raiding hypothesis)
Wruck (1989)	Investigates private placements and examines magnitude and determinants of the announcement effect to investigate whether large shareholders are able to align interest between managers and shareholders. *Methodology*: Event study; cross-sectional analysis (i.e., linear and piecewise linear regression)	*Event Study*: Announcement Effect (+). *Main Results:* Wealth effect is strongly correlated with the resulting change in ownership structure. CAR (+) related to target firm's ownership level if it is high or low; related (–) to acquirers anticipated relationship [(1)] with target firm. Large shareholders do not always help to align interests of managers and shareholders (e.g., through monitoring), and sometimes do the opposite (e.g., through management entrenchment).
Eyssell (1989)	Analyzes the stock market response to the announcement of partial acquisitions (13-D filing) and investigates whether the announcements are accompanied by substantial changes in corporate performance post acquisition. *Methodology*: Event study; univariate analysis of financial characteristics pre/post acquisitions[(2)] for target and control firms (long-term)	*Event Study*: Announcement effect (+). *Main Results*: While there is a positive wealth effect it is not followed by substantial change in target firm's financial ratios in the five year interval around the announcement of the partial acquisition.
Choi (1991)	Scrutinizes the announcement effect of partial stock acquisition (13-D filing) and the subsequent valuation consequences. Deploys three hypotheses to explain the wealth effect: 1) control transfer, 2) anticipated takeover bid, and 3) undervaluation. *Methodology*: Event study (short- & long-run); univariate analysis of CAAR depending on control transfer events	*Event Study*: Announcement effect (+). *Main Results*: The announcement effect can be attributed to potential benefits of subsequent control transfer
Barclay and Holderness (1991)	Study the magnitude of short- and long-run valuation effect of the market response to negotiated block trades and investigate the importance of active blockholders. *Methodology*: Event study (short- & long-run); univariate analysis of CAAR depending on outcome (i.e., target remain independent or subsequently acquired); and analysis of firm characteristics post transaction	*Event Study*: Announcement effect (+). *Main results*: Valuation effect is less pronounced for targets that stay independent in comparison to the ones that are acquired. Find evidence that the valuation effect can be attributed (at least partially) to the specific incentives and skills of the investor (shareholder heterogeneity)

(1) this is a dummy variable that account for likelihood of entrenchment); (2) Eyssell (1989) applies a matched pair *t* test of difference between pre/post acquisitions financial ratios of target and control firms in 2,3,4 and 5 year interval; "+":= positive effect; "-":= negative effect; "0":= neutral effect; CRs:= corporate raiders.

Tabelle 3.3—Continued (Part I)

Study	Brief Summary	Main Results
Shome and Singh (1995)	Analyze stock market response to announcements of new large block formation (13–D filing; 5%-50%), distinguish among different types of investors (i.e., institutional, corporate, and individual) and examine the sources for the shareholder's wealth effect. *Methodology*: Event study; univariate analysis of differences in pre- vs. post-block performance and operating measures; and cross-sectional analysis	*Event Study*: Announcement effect (+). *Main Results*: Announcement effect is attributed to potential takeover and reduction of agency costs. CAR are (+) related with debt agency costs, with size of acquired stake and with blockholder type variables for corporations and institutional investors.
Bethel et al. (1998)	Examine activist, strategic, and financial blockholders and investigate the stock market response to block acquisition as well as operational and corporate governance changes in target firms following the block acquisition. *Methodology*: Event study; pooled logistic regression; and univariate analysis of target's pre vs. post-operating performance	*Event Study*: Announcement effect (+). *Main Results*: Market for partial control plays an important role in mitigating agency costs. CAAR for activist investors are significant and for strategic and financial investors are insignificant. Activists target poorly performing and diversified firms. Activists have a (+) impact on performance and shareholder value, and acquisitions are likely to be followed by increases in divestures, share repurchases, and by declines in merger and acquisitions.
Allen and Gordon (2000)	Scrutinize stock market response & long-term changes in investment and operating performance following a non-financial corporation purchase of a large stake in a target. *Methodology*: Event study; univariate analysis of CAAR; cross-sectional analysis investment and operating performance changes	*Event Study*: Announcement effect (+). *Main results*: Large shareholder ownership by corporations comes with significant benefits for target firms in product market relationships. Change in concentrated ownership is (+) related to operating performance and investment expenditure in target firms with product market relationships with corporate blockholders.
Barclay et al. (2001)	Study block price premium puzzle (block trades are priced at a premium compared to private placements) by distinguishing between two types of entrances and between active & passive blockholders. *Methodology*: Event study; univariate analysis of CAAR; cross-sectional analysis of premiums	*Event Study*: Announcement effect (+). *Main Results*: Block price puzzle disappears when accounting for the fact that active shareholders are more likely to enter through block trades rather than private placements. Active blockholders produce strongest wealth effect independent of mode of the entrance.
Akhigbe et al. (2004)	Investigate the valuation effect of partial stock acquisitions retrieved from the roster section of Merger & Acquisitions, evaluate the target's performance post acquisition, and ascertain the relationship between target's performance levels and control-related factors of the target and acquirer. *Methodology*: Event study (short- & long-run); cross-sectional analysis (CAR & long-term performance of target)	*Event Study*: Announcement effect (+). *Main Results*: Specific control characteristics of target or acquirer affect valuation effect (short- & long-term). Positive wealth effect in short-term does not prevail in long-term performance (i.e., no positive effect over the 3-years post transaction)
Akhigbe et al. (2007)	Examine the probability of a full takeover in partial stock acquisitions and how far the (ex ante) likelihood of a full takeover drives the announcement effect of these transactions when controlling for other factors (e.g., degree of influence, degree of improvement) influencing the valuation effect. *Methodology*: Events study; univariate analysis of CAAR; logit model; cross-sectional analysis	*Event Study*: Announcement effect (+). *Main Results*: The valuation effect is positive and significant independent of whether the target is taken over but the effect is significantly higher if the takeover eventually takes place

"+":= positive effect; "-":= negative effect; "0":= neutral effect.

Table 3.3—Continued (Part II)

Study	Brief Summary	Main Results
Dai (2007)	Scrutinizes PIPE transactions of venture capital funds (VC) and hedge funds (HF), investigates their differences, and observes the drivers (i.e., monitoring or certification effect) for the (short- and long-run) valuation effect. *Methodology*: Event study; buy-hold-abnormal-returns; cross-sectional analysis; analyze target characteristics pre vs. post transaction	*Event Study*: Announcement effect for VC (+) & for HF (–). Main Results: (1) VC and HF have very different investment behaviors and characteristics; (2) valuation effect (short- & long-run) is much stronger for VC than for HF,(for HF it is even partially negative); (3) certification rather than monitoring effect seems to drive VC's positive valuation effect
Ferris and Saensuk (2008)	Analyze purchases & repurchases in target firms and its impact on firm value (short-term) and firm's operating performance (long-term) and its drivers. Focus on institutional, corporate, & individual investors. *Methodology*: Event study; univariate analysis of CAAR; changes in operating performance and long-term market performance; cross-sectional analysis	*Event Study*: Announcement effect (+). *Main Results*: (1) Block acquisitions have a positive valuation effect whereas block repurchases do not; (2) valuation effect is largest if block acquirer is a corporation; and (3) permanent blocks have a more pronounced effect on announcement effect than temporary blocks
Park et al. (2008)	Study monitoring effect of large shareholder (5-50%) by examining the magnitude and the determinants of the announcements effect of partial stock acquisitions of activist, strategic, and financial blocks. *Methodology*: Event study; univariate analysis of CAAR; cross-sectional analysis	*Event Study*: Announcement effect (+). *Main Results*: Evidence supports the idea that activist blockholders create value through monitoring and that this extent of value creation depends on certain characteristics of acquirer as well as target. CAR are (+) related with block size, block's pressure intensity, and investor's representation in target's board; (–) related to target's managerial ownership; (+) related to no previous block holder in target firm prior to transaction if block acquirer is activist
Boyson and Mooradian (2007)	Investigate shareholder activism by examining share acquisitions (13-D filing) of HF and their impacts on short- and long-term performance of the target firm along with the motives and outcomes of hedge fund activism. Also they scrutinize the impact of HF activism on its own performance. *Methodology*: Event study; logistic model; cross-sectional analysis (short- & long.-term)	*Event study*: Announcement effect (+). *Main Results:* HF activism improves target's short-term stock and long-term operating performance. The extent of change in performance depends on the type of activism (i.e., communication, communication then aggressive and aggressive) and "aggressive" activism causes the strongest change. HF benefit from their activism activities in terms of improved performance
Brav et al. (2008)	Study a large-scale sample of HF activism by analyzing stock market response and performance (before and after activism) reaction to partial stock acquisition announcements (13-D filing). *Methodology*: Event study; probit model; and cross-sectional analysis CAR (short-term) and operating performance (long-term)	*Event study*: Announcement effect (+). *Main Results*: HF activism creates value on average because of monitoring and not undervaluation. The objectives and tactics play a role for the activism. Although there is a large cross-sectional variation in announcement effect following partial acquisitions (e.g., because of HF's tactic) the results are in line with the view that these investors create value by reducing agency costs
Clifford (2008)	Scrutinize HF activism by analyzing partial stock acquisition announcement's (13-D filing) short-term stock and long-term operating performance responses to the target as well as the relevance of the HF's organizational structure to create value Methodology: Event study; logistic regression; univariate analysis of changes in operating performance following the acquisition; holding period returns to blockholder	*Event study*: Announcement effect (+). *Main Results*: Active HF have a stronger (+) impact on market response (short-term) and operating performance (long-term) than passive HF. Divesture of under- performing assets is a main driver for operational improvements. Liquidity concern of investors is crucial for efficacy of activists. There are larger returns earned on active than passive blocks which may motivate HF's willingness to engage in costly monitoring

PIPE:= private investment in public equity; "+":= positive effect; "-":= negative effect; "0":= neutral effect; VC:= venture capital funds; HF:= private equity firms.

Table 3.3—Continued (Part III)

Study	Brief Summary	Main Results
Klein and Zur (2009)	Investigate activism of HF and other entrepreneurial investors(1) by examining the magnitude, determinants, methods and consequences of partial stock acquisition announcements (13-D filing) for both groups alone and by comparing both activists. *Methodology*: Event study; univariate analysis of CAAR depending on outcomes (i.e., activists obtain do not obtain stated objectives) and of changes in target's one-year performance post activism; logistic model	*Event study*: Announcement effect (+). *Main results*: Both groups cause a positive valuation effect in the short-term (to announcement) and long-term (subsequent year), and the fact that both investors are successful in achieving their initial goals. Two major difference stand out: (1) HF acquires stakes in more profitable targets than the other group and (2) HF tend to tackle CF agency costs whereas the other group aims to change the investment strategies of the target firm
Greenwood and Schor (2009)	Investigate the valuation effect of activism by focusing on partial stock acquisition announcements (13-D filing) of HF and non-HF and particularly address the anticipated takeover bid hypothesis. *Methodology*: Event study; univariate analysis of CAAR (depending on activism type, and during the 2007 credit crisis) and of changes in operating performance measures after activism	*Event study*: Announcement effect (+). *Main Results*: Short- and long-term announcement effect is stronger for subsequently acquired targets and insignificant for non-acquired targets. The likelihood of a full acquisition is larger within HF compared to control group. The market wide downturn in the takeover market drags down the activists' portfolio performance. They conclude that HF effects on corporate are limited and these investors are more likely to target undervalued firms with the main goal that these targets are taken over

(1) Other entrepreneurial investors comprise of individuals, private equity funds, venture capital firms, and asset management firms (Klein and Zur, 2009); "+":= positive effect; "-":= negative effect; "0":= neutral effect; VC:= venture capital funds; HF:= private equity firms.

Barclay et al. (2001) study 798 partial stock acquisitions decomposed into 594 acquisitions directly from the target (private placement) and 204 from other shareholders (block trades) from 1978 to 1997. They examine and aim to explain the *block price premium puzzle*—that is to say, the evidence that block trades are traded at a premium of 11% whereby private placements are traded at a discount of 19% to the post-announcement exchange price. They use the cross-sectional analysis to test whether there is a systematic difference for block trades and private placements. Moreover, they distinguish not only between block trades and placement but also between active and passive blockholders, and they examine the announcement effect separately to see whether there are important differences. For all block trades they find positive and highly statistically significant CAAR. For active blockholders the CAAR are highly significant; for passive blockholders CAAR are also highly significant but smaller in magnitude. According to their findings, the block price puzzle emerges because active shareholders are more likely to enter through block trades than through private placements. After controlling for active shareholders, the pricing puzzle vanishes and the type of acquirer has only little impact on the price. Hence, the price premium puzzle can be explained by looking beyond the initial transaction to consider what happens after the investor entered the firm. Instead of explaining the puzzle through the way in which blocks are acquired (block trade or private placement), the investor's involvement (active or passive) contributes better to explaining the puzzle. Most investors who enter through block trades become active following the transaction, whereas investors who enter through private-placement do not. Accordingly, the discount reported for private placement is simply a discount for these investors for entrenching management. Overall, this finding illustrates that the large

shareholder's involvement (active vs. passive) is crucial in helping understand the benefits of these investors to the firm.

Akhigbe et al. (2004) analyze the short- and long-run performance effects following the announcements of 330 partial acquisitions from 1980 to 1998. Furthermore, they examine the relationship between the performance effects and corporate control characteristics of target (as well as acquiring) firms. In the short-run they find positive wealth effect following the announcement of the partial stock acquisitions. In the long-run, however, they find insignificant valuation effects. The *cross-sectional analysis* suggests that there is a variation in the short-term and long-term valuation effect depending on control characteristics of target and acquiring firm. Akhigbe et al. (2004, pp.855-856) conclude that their results present evidence that the partial acquirer, through his monitoring role, adds value to the target firm.

Akhigbe et al. (2007) examine the announcement effect of 552 partial acquisitions from 1990 to 2001 and investigate the likelihood of a takeover of a target. In their sample they report positive announcement effects independent of the eventual occurrence and timing of the full acquisition. In their *cross-sectional analysis*, however, they find that CAR are strongly, positively correlated to the full acquisition. This is in line with the findings presented by Mikkelson and Ruback (1985) and Choi (1991) that the wealth effect depends on the ultimate outcome of event post announcements. This implies that the market somehow foresees the ultimate outcome of these events. Overall, their results are supportive of the proposition that partial stock acquisition increases the likelihood of full acquisitions. Additionally, their results are in accord with the anticipated takeover bid hypothesis; that is, the CAR are higher for targets with a higher probability of being taken over.

Dai (2007) scrutinizes 510 PIPE transactions partitioned into 397 hedge funds (HF) and 113 venture capital funds (VC) transactions from 1995 to 2003. He focuses on the magnitude and the sources for value creation (long- and short-run) and the differences between these two types of investors. Two hypotheses—the monitoring and the certification (undervaluation) hypothesis—are put forward to explain the valuation effect and to examine the differences of these two investors. In the short-run (as well as in the long-run) analysis, the evidence suggests that there is a crucial difference between these two types of investors. On the one hand, the CAAR (short-run) and the BHAR (long-run) for VC are both positive and significant. These investors try to get on the target firm's board, try to buy substantial ownership, and try to have a long holding period. On the other hand, CAAR and BHAR are insignificant or even negative for HF. These investors hardly ever join the target's board and their investments usually have short holding length. The *cross-sectional analysis* suggests that the positive effect of VC is mainly because of the certification rather than the monitoring effect. Dai (2007, p.538) conclude that these findings suggest that the investor's identity matters.

Ferris and Saensuk (2008) investigate 229 block acquisitions and 81 block repurchases, and their impact on firm value and operating performance, from 1993 to 2001.[127] Additionally, the type of large shareholder is analyzed by distinguishing between institutional, corporate, and individual blockholders. Moreover, they decompose the sample in different holding periods. They conduct a cross-sectional analysis to examine the relationship between CAR and the number of blockholders in the target firm. They also test the relation between the long-run performances and block creation and elimination. While for acquisitions the CAAR are positive and significant (independent of the shareholders type), the wealth effect is most pronounced after the announcements of corporate block acquisitions. They do not find, however, significant wealth effects for repurchase announcements. In addition, the abnormal returns are greater in magnitude for permanent rather than temporary block acquisition. In the regression analysis they find that there is a valuation effect only if there is a change from zero to one blockholder in the target firm. This is evidence that the entrance of the first large shareholder is important, whereas the marginal value added by any additional shareholder is less significant—this is consistent with the findings of Shome and Singh (1995). Furthermore, a performance analysis suggests that permanent blockholders have a stronger impact on industry-adjusted operating performance than temporary transactions. Lastly, they find that a new permanent blockholder has an impact on the long-term market performance, whereas a temporarily blockholder and block elimination do not.

Park et al. (2008) analyze 264 partial stock acquisitions and investigate the importance of monitoring for value creation from 1997 to 2000. To scrutinize which role the type of large shareholder plays, they decompose the transactions into three groups: activist, financial, and strategic blockholders. Moreover, they conduct a cross-sectional analysis to examine the monitoring effect by controlling for the anticipated takeover hypothesis and undervaluation hypothesis. Thereby CAR are regressed on block characteristics, acquirer characteristics, existing targets governance characteristics, and control variables. They find positive and highly significant CAAR for all blocks regardless of their respective types. However, CAAR for active blockholders and for strategic blockholders are much greater in magnitude as for financial blockholders. The *cross-sectional analysis* reveals that CAR are positively influenced by all block acquirer characteristics, i.e., activists block, strategic partner, block size, pressure insensitive block, and board representation of acquirer. Moreover, the data suggests that managerial ownership is negatively correlated to the announcement effect. This is the only variable measuring the targets of the existing corporate governance system, which in general is significant. For activist blocks, however, they find that the announcement effect is more pronounced if there is no previous blockholder in the target firm, which is in line with the findings of Ferris and Saensuk (2008). Their results provide evidence that monitoring of active large shareholder creates value and that the degree of monitoring depends on both acquirer and target characteristics.

[127] Ferris and Saensuk (2008, p.432) define repurchase transactions as transactions where a firm buys its own shares back from an existing large shareholder whereby both complete and partial repurchases are considered.

Boyson and Mooradian (2007) study shareholder activism of hedge funds by examining 418 acquisitions of target shares[128] from 1994 to 2005 and examine their impact on short-term market reaction and long-term operating performance. Furthermore, they investigate the skills of hedge funds as activists, the motives and outcome of their activism, and implication of activism on their own performance. Among others, they decompose the transactions into three groups of transactions depending on hedge funds activism: communication only, communication and then aggressive, and aggressive only. For the first category the holding length is one-and-one-third years and for the last two categories the average time is two years. According to this evidence these investors do not seem to be short-term orientated as it is usually assumed. The announcement effect for all hedge fund targets is positive and significantly different from the announcement effect of the targets of matched non-hedge sample (control group) which implies that the market expects that the hedge funds be successful activists. The *cross-sectional analysis* suggests that the type and motives of the activist matters: aggressive activism (i.e., type of activism) and activists that seek corporate governance changes or excess cash reduction in the target firm (i.e., motives of activist) experience the most favorable valuation effect. They also put forward evidence that hedge funds that perform aggressive activism enhance their own performance measured by risk-adjusted annual performance compared to non-activist hedge funds and less aggressive hedge funds activists. Overall, their findings suggest that hedge fund activism creates value in the short-term (market reaction), long-term (operating performance), and can bring along corporate change in the target firms that benefit hedge funds and shareholders alike. This is particularly true for hedge funds that are aggressive activists and have well-defined shareholder activism objectives.

[128] The transactions under investigation are decomposed into four kinds of acquisition methods: *first*, stock acquisitions; *second*, preferred stock acquisitions; *third*, debt and other payable acquisitions; and, *fourth*, derivative acquisitions (Boyson and Mooradian, 2007, p.30).

Table 3.4: Results of US Studies on Partial Stock Acquisitions

Study[1]	Sample Period (N)[2]	Event Window[3]	CAAR in %
Madden (1981)	1977-79 (86)	[–1;0]–M	5.8**
		[0;0] –M	10.4**
Holderness and Sheehan (1985)	1977-82 (99)	[0;0]	1.77***
		[-5;+5]	4.73[4]
		[–40;0]	8.92***
Mikkelson and Ruback (1985)	1978-80 (337)	[-1;0]	2.88***
		[–40; –21]	3.39***
Wruck (1989)	1979-85 (99)	[-1;0]	1.89*
		[-5;+4]	4.34[5]
		[-3;2]	2.52**
Eyssell (1989)	1973-81(62)	[0;0]	1,74***
		[-5;+5]	2.53[6]
		[-30;+20]	10.03(NA)
Choi (1991)	1982-85 (322)	[-1;0]	2.2***
		[-5,0]	4.3***
		[-10;0]	6.4***
Barclay and Holderness (1991)	1978-82 (106)	[-1;0]	5.10***
		[-10;0]	9.20***
Shome and Singh (1995)	1984-86 (92)	[0; 0] –W	1.94***
		[-1; 1] –W	0.80
Bethel et al. (1998)[7]	1980-89 (146)	[-30;+5]	15.70***
		[-30;+30]	14.20***
Allen and Gordon (2000)	1980-91 (402)	[-10;+10]	6.90***
Barclay et al. (2001) [8]	1978-97 (202)	[-1;+1]	5.90***
(all block trades)		[-1;+10]	5.40***
Barclay et al. (2001)	1978-97 (594)	[-1;+1]	2.0***
(all private placements)		[-1;+10]	2.2***
Barclay et al. (2001)	1978-97 (270)	[-1;+1]	6.6***
(active blocks)		[-1;+10]	5.2***
Barclay et al. (2001)	1978-97 (68)	[-1;+1]	6.6***
(active private placements)		[-1;+10]	5.2**
Akhigbe et al. (2004)	1980-98 (330)	[-1;+1]	3.11***
		[-11;-2]	2.50***
Dai (2007)	1995-2003 (397)	[0;3]	5.6***
(VC-led PIPE transactions)[9]		[-9;0]	4.5*
Dai (2007)	1995-2003 (113)	[0;3]	-1.2
(HF-led PIPE transactions)		[-9;0]	2.7**
Akhigbe et al. (2007)	1990-2001 (552)	[-1;+1]	3.09***
		[-11;-2]	1.10***
21 Studies; during 1973-2003 period; N_{mean}=328 N_{median}=264[10]		$CAAR_{mean}$=5.6% , $CAAR_{median}$=4.3%[11]	

(1) Different samples or subsamples are indicated in italic and in parentheses in the line below the name of the author; (2) N:= Number of observations; (3) daily if not stated otherwise; M:= monthly, W:= weekly; (4) calculated with own calculations from AR presented in the papers and thus no significance level is provided (Holderness and Sheehan, 1985, p.564), (5) calculated with own calculations from AR presented in the papers and thus no significance level is provided (Wruck, 1989, p.9), (6) calculated with own calculations from AR presented in the papers and thus no significance level is provided (Eyssell, 1989, p.78). 8); (7) Results of Bethel et al. (1998) are only presented for activist blockholders. For financial blocks as well as for strategic blocks the CAAR in the same event windows are insignificant; (8) Barclay et al. (2001) decompose the sample into block trades and private placements (way of entry) and active or passive blocks (degree of involvement). I only present the results for block trades, private placements, and active blocks and activist private placement below; (9) Dai (2007) uses two sample for his analysisd–one VC and one HF sample. (10) N(mean) and N(median) is the arithmetic mean and median sample size for the studies shown above, except the subsamples in the presented studies. For Barclay et al. (2001) the block trades and private placement samples are used only for the calculation; (11) CAAR(mean) and CAAR (median) is the arithmetic mean and median of CAAR presented above for all studies except (Madden, 1981) and (Shome and Singh, 1995) because they do not use daily data. If studies report CAAR for sub-categories and complete samples, I use the CAAR from subsamples to calculate mean and median value of CAAR. I usually tried to use CAAR [-5;+5] to make it comparable among one other but also because CAR[-5,+5] is used as explanatory variable in my cross-sectional regression analysis. Significance level, where 1%, 5%, and 10% level are ***, **, *.

Table 3.4—Continued (Part I)

Study[1]	Sample Period (N)[2]	Event Window[3]	CAAR in %
Park et al. (2008)[4]	1997-2000 (264)	[-1;+1]	9.27***
(All transactions)		[-5;+5]	9.63***
Park et al. (2008)[4]	1997-2000 (44)	[-1;+1]	17.55***
(Activist transactions)		[-5;+5]	19.60***
Park et al. (2008)	1997-2000 (123)	[-1;+1]	1.42***
(Financial transactions)		[-5;+5]	2.83
Park et al. (2008)	1997-2000 (97)	[-1;+1]	15.46***
(Strategic transactions)		[-5;+5]	13.74***
Ferris and Saensuk (2008)	1993-2001 (229)	[-1,+1]	6.38***
(All transactions)		[-1,+5]	6.9***
Ferris and Saensuk (2008)	1993-2001 (96)	[-1,+1]	0.88
(Institutions)		[-1,+5]	1.65*
Ferris and Saensuk (2008)	1993-2001 (88)	[-1,+1]	12.03***
(Corporations)		[-1,+5]	11.11***
Ferris and Saensuk (2008)	1993-2001 (45)	[-1,+1]	7.00***
(Individuals)		[-1,+5]	9.41***
Boyson and Mooradian (2007)	1994-2005 (418)	[-0;2]	2.16[5]
		[-10;+10]	5.18[5]
Clifford (2008) (*Active transactions)*	1998-2005 (484)	[-2,+2]	3.40***
(Passive transactions)	1998-2005 (557)	[-2,+2]	1.53***
Brav et al. (2008)	2001-2006 (1,059)	[-10:-1]	3.2[6]
(All transactions)		[0,+1]	2.0[6]
		[-20,+20]	8.4[6]
Greenwood and Schor *(2009)*	1993-2006 (980)	[-10;0]	2.41***
		[-10;+5]	3.61***
Klein and Zur *(2009)*	2003-2005 (134)	[-30;+5]	5.7*** (7.3***)[7]
(HF sample)		[-30;+30]	7.2*** (10.2***)[7]
Klein and Zur *(2009)*	2003-2005 (139)	[-30;+5]	2.2* (4.4***)[7]
(Other entrepreneurial activists)		[-30;+30]	1.9 (5.1***)[7]
21 Studies; during 1973-2003 period; N_{mean}=328, N_{median}=264 [8]		$CAAR_{mean}$=5.6% , $CAAR_{median}$=4.3% [9]	

(1) Different samples or subsamples are indicated in italic and in parentheses in the line below the name of the author; (2) *N*:= Number of observation; (3) daily if not stated otherwise; M:= monthly, W:= weekly; (4) Park et al. (2008) decompose their sample into activists, financial and strategic blocks.. This line presents the results for the whole sample, the next three lines for the activists, financial and strategic block; (5) Boyson and Mooradian (2007) do not show the significance level of their excess returns; (6) Brav et al. (2008) neither do report table with abnormal returns nor report significance level of abnormal returns; (7) Klein and Zur (2009) calculate size-adjusted, market-adjusted and industry-adjusted abnormal returns. I report market-adjusted and size-adjusted returns in parentheses; (8) N(mean) and N(median) is the arithmetic mean and median sample size respectively for the studies shown above, except the subsamples in the presented studies. For Barclay et al. (2001) the block trades and private placement samples are used only for the calculation; (9) CAAR(mean) and CAAR (median) is the arithmetic mean and median of CAAR presented above for all studies except (Madden, 1981) and (Shome and Singh, 1995) because they do not use daily data. If studies report CAAR for sub-categories and complete samples, I use the CAAR from subsamples to calculate mean and median value of CAAR. I usually tried to use CAAR [-5;+5] to make it comparable among one other but also because CAR[-5,+5] is used as explanatory variable in my cross-sectional regression analysis. (Significance level, where 1%, 5%, and 10% level are ***, **, *.)

Brav et al. (2008) investigate hedge fund activism by examining market and operating performance reactions to announcements of hedge fund acquisitions in a large hand-collected sample of 1,059 transactions from 2001 to 2006. They analyze the tactics and objectives (i.e., activism related to sale of company, changes in business strategy, capital structure, governance, and general) of hedge funds, the announcement effect of the 13D filing, the cross-sectional variation in the announcement effect, returns gained by hedge funds on their investment, and the ex post operating performance changes. To explain the valuation effect following the Schedule 13D filing, they analyze four explanations: *first* is activism (similar to control hypothesis); *second*, market overreaction to the announcement; *third*, stock picking (undervaluation hypothesis); and, *fourth*, expropriation from other stakeholders (i.e., creditors

and executives). While some commentators claim that hedge funds focus only on short-term investments, Brav et al. (2008) find that the median holding period of their sample is approximately one year. The CAAR over the whole event window [–20; +20] amounts to 7.2%. There is a run-up of approximately 3.2% in the 9 days [–10;1] prior to the announcement day and the 2-day CAAR of the announcement day and the subsequent day cumulates to about 2%. The *cross-sectional analysis* suggests that the type of activism indeed matters. The CAR for activism related to the sale of a company, to changes in business strategy, and general activism, are positive and significant at 8.54%, 5.95%, and 6.28%, respectively. In contrast, the abnormal returns related to capital structure- and governance-activism are insignificant yet positive. Activism by hedge funds with a proven track record of activism and with hostile activism both are strongly correlated with higher CAR. Moreover, the positive market response in the short-term is consistent with a generally enhanced (ex post) operating performance in the target firm. Additionally, the turnover and payout of CEOs increases in target firms following the activism. On the whole, the evidence of this paper suggests that hedge funds not only enhance stock price and operating performance but that they do this through monitoring and control of management exerted through their presence and potential to intervene. Hence, they conclude that these shareholders "can be viewed as a new middle ground between internal monitoring by large shareholders and external monitoring by corporate raiders" (Brav et al., 2008, p.1774).

Clifford (2008) investigates shareholder activism by studying 1605 (648 active and 957 passive)[129] partial stock acquisition announcements (13-D filing) of active and passive hedge funds from 1998 to 2005. In his event study he decomposes the sample into active hedge funds (Schedule 13D), and passive hedge funds (Schedule 13E) according to their filings,[130] and investors who initially are passive and then turn active. Furthermore, he questions whether the entrance of a hedge fund is accompanied by increased operating performance or changes in disciplining measures (e.g., cash, leverage, and dividends) in the 1-, 2- and 3-year period following the initial filing. The long-run stock performance is measured by calculating the long-run AR[131], applying the calendar-time. He also evaluates the holding period returns to the blockholders to estimate the gains for hedge funds. The data suggests that the valuation consequences for the stock market reactions (short-term), as well as the operating performance (long-term), are more pronounced for active hedge funds than for the control group of passive hedge funds. The main determinant for operational improvements is a divesture of under-performing assets. Investors' liquidity concerns (e.g., longer lock-ups and withdrawal notification periods of the investors) seem to be essential for the efficacy of activists. The long-term stock market reaction shows that the excess returns for both active and passive investors generate

[129] In the event study analysis Clifford (2008) uses a sample for all blocks and sample of only clean filings. For all blocks the number of transactions is 1605 decomposed in 648 active and 957 passive filings whereas for only clean filings the number of transactions is 1041 partitioned into 484 active and 557 passive filings.
[130] Clifford (2008) defines passive blocks as investors who file a Schedule 13G filing with the SEC which implies that they attest to having only an investment purpose and do not aim to influence the firm or its management. Active blocks are defined as investors who file a Schedule 13D filing.
[131] Therefore Clifford (2008) applies the portfolio approach with the Fama-French 3-factor and 4-factor models supplemented with momentum factor (Carhart, 1997).

positive and significant AR. Additionally, active hedge funds themselves are found to generate larger holding period returns on active rather than on passive blocks. This may motivate hedge funds' willingness to engage in costly monitoring. In turn, Clifford (2008, p.324) concludes, this may help to explain why one witnesses costly monitoring by minority blockholders in equilibrium. In sum, his findings present evidence that hedge fund activism creates value.

Klein and Zur (2009) examine activism of two entrepreneurial investors (hedge funds and others) by analyzing the magnitude, determinants, methods, and consequences of 273 (*N* equals 134 for hedge funds and *N* = 139 for others) partial stock acquisition announcements (13-D filing) of the 2003-2005 period. They decompose entrepreneurial investors into hedge funds and other entrepreneurial investors(8) to examine both groups on an individual basis and to compare both activists. In their study they apply event study methodology[132] to assess the short-term market reaction. Moreover, they apply, among others, a univariate analysis to assess the CAAR depending on purpose of initial 13D filing, and CAAR contingent relaying on the outcomes of activism (i.e., activists obtain, and do not obtain the initial objectives). They also estimate the changes in a target's one-year performance (AR and operating performance) post activism. In addition, a univariate analysis and pooled logistic model is applied to analyze the target firm characteristics. The results suggest that both hedge funds and other entrepreneurial investors cause a positive valuation effect in the short-term. The market adjusted AR in 61-day event window [–30;+30] for hedge funds and other investors amounts to positive and significant 7.2% (at 1%-level) and 1.9% (at 10%-level), respectively. The long-term AR for both investors is positive and highly statistically significant. Overall, there are *three* main parallels between hedge funds and other entrepreneurial investors: *first*, the positive and significant announcement effect following the 13D filing; *second*, positive and significant long-term excess returns; and, *third*, the high success rate[133] in achieving their purpose stated in initial 13D filing. At the same time, two major differences stand out. *First*, hedge funds acquire stakes in more profitable targets than the other investor group; *second*, the other entrepreneurial investors aim to change the investment strategies of the target company whereas hedge funds tend to tackle cash flow agency costs.

Greenwood and Schor (2009) analyze the announcement effects of hedge funds activism by focusing on partial stock acquisitions (13-D filings) from 1993 to 2006. They decompose the transactions into 784 events by 139 hedge funds and 196 events by 38 non-hedge[134] funds. During their study they use a set of filing of non-activists as a control group.[135] In their analysis they particularly address the anticipated takeover bid hypothesis which they put forward to be the main explanation for the positive valuation effect following activism. They use an event study methodology,

[132] Klein and Zur (2009) calculate the size-adjusted returns, market-adjusted returns, and industry adjusted returns in their event study.
[133] They define success as the achievement of the activist's goal within one-year of the initial 13D filing (Klein and Zur, 2009, p.211).
[134] These investors are classified as non-hedge funds because a hedge fund is not their main product offered, however, they might have a hedge fund in their product portfolio Greenwood and Schor (2009, p.364).
[135] These non-active investors, however, are excluded for the main analysis and only serve as control group (Greenwood and Schor, 2009, p.364).

univariate analysis of CAAR depending on the type of activism (e.g., engage management, capital structure, and corporate governance) and the outcome (e.g., acquired or remain independent). Moreover, they scrutinize the changes in operating performance measures after activism and study the stock market performance of targets of activism during the 2007 credit crisis. Their data suggests that there is a positive and significant announcement effect following the filing. The abnormal returns, however, vary between different types of activism. Moreover, short- and long-term announcement effect is stronger for subsequently acquired targets whereas it is insignificant for non-acquired targets. The likelihood of a takeover is larger for companies targeted by hedge funds compared to firms targeted by the control group. The consideration of the credit crisis reveals that the market-wide downturn in the takeover market drags down the activists' portfolio performance. Greenwood and Schor (2009, p.374) conclude that hedge funds are less likely to create value through corporate governance enhancements, but they are more likely to target undervalued firms with the main goal that these targets are taken over.

In conclusion, the review of 21 empirical studies from the US stock market spanning the 1973-2006 period with a mean (median) sample size of 331 (276) on partial stock acquisitions and their impact on shareholder value are revealing. The following *eight points* are of key importance. *First*, it is notable that the US body of literature is substantially more comprehensive than the German literature. Additionally, the applied methodologies in the studies develop over time and can be broadly classified into two groups, what I call the first- and second-generation of studies. The first-generation of studies mainly focus on the magnitude of the valuation effect whereas the second-generation of studies expand on the first and concentrate also on the determinants for the valuation effects.[136] *Second*, the announcement effect (short-term) is on average positive across all studies. Although, there are some exceptions, the overall announcement effect is positive and the mean (median) value amounts to 5.6% (4.3%) as depicted in *Table 3.4*. The proxy of the announcement effect is slightly more pronounced in magnitude than in the German studies. *Third*, comparable to the German studies, price run-ups previous to the announcement date are found nearly in every study. *Fourth*, the long-term effects on market value as well as operating performance are ambiguous. Nevertheless, the most recent studies on partial stock acquisitions by new institutional investors, such as hedge funds, confirm that short-term valuation effects persist into the long-term (e.g., Boyson and Mooradian, 2007; Brav et al., 2008; Klein and Zur, 2009). *Fifth*, some studies in the 1980s investigate the raiding hypothesis, and all reject it unanimously. *Sixth*, the evidence from the presented studies suggests that the type of the shareholder (e.g., corporation, traditional, or new institutional investor) and the intention (active or

[136] The first-generation deploys event study and univariate analysis and examines the announcement day of the partials stock acquisition (or rather 13D filing), the short-term and sometimes long-term valuation effects, and the announcement effects of subsequent control events. Classified within this generation of studies are the studies between Madden (1981) and Barclay and Holderness (1991). Some of these so called first-generation studies already start using methods to explain the cross-sectional variations of abnormal returns. In the second-generation additional methods are applied to examine the cross-sectional variation of AR and the acquirers and target characteristics that influence the stock market reactions by using cross-sectional as well as probit and logit models. In both generations a great number of studies focus on the particular type of shareholder (corporation, traditional institutional, new institutional) or on the intention (active or passive).

passive) really do matter; therefore, the assumptions of shareholder homogeneity seem untenable. Thus it is sensible to assume that there is large shareholder heterogeneity across different blockholders in their effect on the corporate governance system in place in the target companies. *Seventh*, the analysis of the cross-sectional variation of the announcement effect produces mixed results while some studies find evidence that the valuation effect can be attributed to enhanced monitoring (e.g., Boyson and Mooradian, 2007; Brav et al., 2008; Park et al., 2008). Others find evidence for the undervaluation hypothesis (e.g., Dai, 2007) and the anticipated takeover hypothesis (Akhigbe et al., 2007; Greenwood and Schor, 2009). Accordingly, as in the German studies, the explanation for the positive announcement effect and the true drivers still seems to lack clarity and unity. In Germany, however, the two former hypotheses are mainly associated with the positive wealth effect, whereas the anticipated takeover bid hypothesis receives less support. This is an interesting finding and might be explained through the weaker market for corporate control in Germany and should be kept in mind. Furthermore, the US studies provide more convincing evidence that large shareholders create value through monitoring by reducing agency costs. This is particularly true for hedge funds and other entrepreneurial investors. *Eighth*, the five most recent studies (i.e., Boyson and Mooradian, 2007; Brav et al., 2008; Clifford, 2008; Greenwood and Schor, 2009; Klein and Zur, 2009) on shareholder activism by new institutional investors, such as hedge funds or similar entrepreneurial investors, find strong evidence that these investors indeed create value. Overall, these studies point out that these investors could be seen as the "new kids on the block" (Gillan and Starks, 2007, p.68) that are particularly nimble and skilled and create value through monitoring by entering the stage as a link between internal monitoring by large shareholders and external monitoring by the market for corporate control.[137] In particular, these five studies find that the type of activism is related to the valuation effect—the short- and long-term valuation consequences are positive and value is created by the reduction of agency costs. Moreover, these new institutional investors (mainly hedge funds) seem to make substantial profits on active investments compared to passive investments, which explains why they can overcome the free-rider problem and are willing to bear monitoring costs. While generally these investors seem eligible to create value, there still seem to be significant differences between different types and different intentions of new institutional investors on value creation and investment strategy. Whereas these studies almost all attribute the value creation to the enhancements in monitoring, only Greenwood and Schor (2009, p.374) claim that takeover anticipation is the main driver for the value effect and thus corporate governance enhancement only partially explain these effects. Another vital point is that these studies report surprisingly long holding periods (one year or more) for hedge fund investments, which presents evidence against the conventional wisdom that these investors are only short-term orientated.

[137] Brav et al. (2008) use a similar line of argument.

3.3 EUROPEAN STUDIES

This section examines evidence from the empirical literature of other European comparative dynamic studies on partial stock acquisitions. The European corporate governance system and financial system are different from the Anglo-American structure as discussed by Goergen et al. *(2008)*. Hence, these studies might give additional insights, and may be important for empirical studies in Germany. *Table 3.5* presents a short description of the European studies and *Table 3.6* summarizes the key figures of the European studies with regard to my research question.

Sudarsanam (1996) examines 228 partial stock acquisitions between 5% and 30% of the target's shares in UK quoted firms from 1985 and 1992.[138] He studies the valuation effect of partial stock acquisitions by decomposing the sample into subsamples depending on the type of takeover and block size and by tracing the stock performance over three years following the initial announcement. The focus is on the relationship between these acquisitions and the likelihood of future takeover attempts. For this purpose, he scrutinizes the partial acquisition's impact on bid frequency, success rate, and bid premium of a subsequent takeover. Generally, the data suggests a positive and significant valuation effect on the announcement day. Furthermore, the likelihood of a takeover bid, hostile bid, and successful bid are influenced by partial stock acquisitions. The valuation effect is also dependent on the type of the acquirer (e.g., frequently or infrequent acquirer) and the nature of the takeover bid. In general, he points out that his study emphasizes, that partial stock acquisitions should not be confused with isolated events but rather that they should be considered as a part of a continuous corporate control process. The initial valuation effects of these transactions are likely to depend on market expectations about future outcomes of subsequent control process following the partial acquisition. Partial acquisitions seem to have explanatory power in predicting future takeover bids yet it is beyond their reach to estimate whether the given bids will be successful or not.

Banerjee et al. (1997) examine 122 block acquisitions by holding as well as non-holding publicly listed companies in France from January 1988 to December 1992. The main objective of their paper is to examine whether holding companies in France create value. They conduct an event study to appraise the immediate stock price reaction and deploy a cross-sectional analysis to control for possible variables which might influence CAAR and hence bias the results. CAAR for holding companies cumulate to negative but insignificant –1.02% in 32-day event window [–30;+1]. However, CAAR for non-holding[139] companies accrue to highly significant 6.2% within the same event window. The *cross-sectional analysis* presents further evidence that the type of shareholder truly matters.

[138] Sudarsanam (1996, pp.302-304) only includes transaction into the sample where the 5% and 20% threshold are exceeded. He then decomposes two samples: a 5%-sample (N=180) and a 20%-sample (N=111). Since some transactions exceed both thresholds at the same time, there is an overlap in the two samples. The total number of events amount to 228 when excluding overlapping transactions. In a further analysis he partitioned the events into three categories: the Small Toehold Group (STG), the Large Toehold Group (LTG), and the Creeping Acquisition Group (CAG). STG consists of partial acquisition only breaching the 5% threshold. LTG consists of partial acquisitions that breach both the 5% and 20% threshold. CAG consists of partial acquisition that accumulated the 20% threshold over time.

[139] Banerjee et al.(1997, p.31) state that the partition between holding and non-holding companies is made on the basis of SIC codes.

Moreover, when using accounting performance variables, such an effect is not apparent. Furthermore, the results suggest that the market anticipates possible takeovers because CAR are more intense for target firms which are later subject to such events comparing to those targets which remain independent. Hence, Banerjee et al. (1997, p.41) conclude that holding companies are detrimental to shareholder value. Meanwhile, non-holding companies seem to create shareholder value. Nonetheless, Banerjee et al. (1997, p.41) state that large shareholders per se do not ultimately reduce agency costs but it is rather the external market for corporate control which eventually disciplines managers and finally creates shareholder value. Large shareholders can play different roles in this process: they can facilitate transactions that create value, but on some occasions they can also contribute to management entrenchment and thus reduce the wealth of shareholders.

Table 3.5: Description of the European Studies on Partial Stock Acquisitions

Study	Brief Summary	Main Results
Sudarsanam (1996)	Investigates the valuation consequences of partial stock acquisitions in *UK* quoted firms. He focuses on the relationship between these acquisitions and possible future takeover attempts by scrutinizing the partial acquisition's impact on bid frequency, success rate, and bid premium of a subsequent takeover. Methodology: Event study (short- and long-term), univariate analysis of CAAR	*Event Study*: Announcement effect (+). *Main Results*: The likelihood of a takeover bid, hostile bid, and success of a bid is influenced by partial stock acquisitions. The AR also vary depending on the type of the acquirer (e.g., frequently or infrequent acquirer) and the nature of the takeover bid. On the whole, he stresses the point that partial stock acquisitions should not be confused as isolated events but rather are part of a continuous corporate control process
Banerjee et al. (1997)	Examine whether holdings create value by investigating partial stock acquisitions of holding and non-holding companies in French quoted firms and their impact on share price (short-term) and operating performance (long-term). Methodology: Event study, cross-sectional analysis	*Event Study*: Announcement effect (+) for non-holding companies and (–) for holding periods. *Main Results*: While the market reacts (short-term) positively to the announcements of non-holding companies, there is no significant change in operating performance induced by partial acquisition (long-term) for both non-holding and holding companies acquirers. The market response is positively related to occurrence of a subsequent takeover. Overall, holding companies do not create value, and the main driver for wealth effect is a subsequent takeover
Croci (2007)[4]	Studies partial block acquisitions of corporate raiders (CRs) in European target firms and their impact on corporate performance (long-run & short-term). Examines 3 hypothesis to explain the valuation effect namely RH,[1] SSPH,[2] and CGCH[3]. Methodology: Event study, calendar time portfolio regression, country-level analysis	*Event Study*: Announcement effect (+). *Main Results*: Even though CRs enhance firm value in the short-run, no evidence is found of induced enhancement of target's operating performance. This result is inconsistent with the raiding hypothesis but also fails to support the CGCH hypothesis. In fact the finding is consistent with the SSPH and thus does not support the idea that CRs are corporate governance champions
Zaabar (2008)[4]	Scrutinizes magnitude and determinants of valuation effect following mandatory block transaction announcements (buy & sell) for firm quoted in French market. Moreover, he studies importance of family shareholders on the valuation effect. *Methodology*: Event study, cross-sectional analysis	*Event Study*: Announcement effect (0) for purchase transaction, (–) for sales transaction. *Main Results*: While the market reacts negatively to sales transaction, the market does not respond to purchase transaction. In the cross-sectional analysis no correlation between valuation effect and ownership structure or family control is found. He points out that because of the high level of ownership concentration which prevails in French quoted firms, the benefits of additional shareholders is minor.
Stotz (2009)	Investigates domestic and cross-border partial stock acquisitions of private equity firms in exchange listed companies in *Europe*. He focuses on the short- and long-term (market and operating performance) valuation effects and on the importance of geographical proximity. *Methodology*: Event study, long-term value effect by applying a calendar-time approach, univariate analysis of CAAR, analysis of changes of operating performance, relationship between AR and accounting returns	*Event Study*: Announcement effect (+). *Main Results*: Overall, the short-term and long-term AR of target firms' are positive and significant but the valuation effect is more pronounced for domestic than for cross-border deals. The results supporting the geographical proximity hypothesis also holds for account returns (long-term operating performance effects. His findings suggest that private equity investors create value by improving firm performance.

(1) RH:= raiding hypothesis; (2) SSPH:= superior stock –picking hypothesis ; (3) CGCH:= the corporate governance champions hypothesis, ; (1) Croci (2007, p.958) also states that the minimum stake is 0.2%; (2) The mandatory threshold France are 5%, 10%, 20%, 33.33%, 50% and 66.66% (Zaabar, 2008, p.3); (4) this paper based on his doctoral dissertation see Croci (2004); "+":= positive effect; "-":= negative effect; "0":= neutral effect.

Croci (2007) analyzes 136 acquisitions made by 15 raiders in seven European countries between January 1990 and December 2001.[140] Applying event study methodology, he focuses on corporate raiders (CRs).[141] He investigates whether this type of shareholder creates value in the short- and long-

[140] Croci's (2007) paper is based on his doctoral dissertation (Croci, 2004).
[141] Corporate raiders are defined as active minority shareholders who have a reputation for annoying incumbent management and do not usually aim to gain full control of the target firms (Croci, 2007, p.952).

term and whether corporate raiders extract firms' resources at the expense of the remaining shareholders. Following Holderness and Sheehan (1985), he scrutinizes three hypotheses: the raiding hypothesis (RH), superior stock-picking hypothesis (SSPH), and the corporate governance champion hypothesis (CGCH). Moreover, the stock market reaction following the announcement of the exit of the corporate raider is examined. Furthermore, he questions whether CAAR are contingent on the country-level by looking at each country's CAAR separately. The effect of the target firms' ownership structures on the valuation effect is also evaluated. Croci (2007) finds positive and highly statistically significant CAAR of 2.44% in the 2-day event window [–1;0] for the entire sample. He also reports a run-up of the AR previous to the announcement day. For a sample of non-raider firms[142] he calculates highly statistically significant CAAR of 1.93% in the same event window, which are smaller in magnitude compared to corporate raiders, yet the CAAR do not differ significantly according to the standard *t*-test. Since the findings do not support the RH, the positive valuation effect could be explained either by SSPH and the CGCH. In the long-run analysis he finds that the partial stock acquisition does not induce performance increase prior to the acquisition. He interprets this as evidence for the SSPH. Overall, even though he does not find evidence that CRs enhance firm performance, he hypothesizes that these investors still contribute to the shaping of a stronger shareholder activism environment.

Zaabar (2008) uses event study methodology to analyze large blockholders' transactions which exceed or fall below mandatory disclosure thresholds in the French market from 1992 and 2007. He examines 433 purchases and 1049 sales announcements. Additionally, he conducts a cross-sectional analysis to examine the relationship between changes in ownership and changes in firm value, which leads him to scrutinize the curvilinear relationship between ownership structure and firm value by following the approach suggested by McConnell et al. (2008). In the analysis of the cross-sectional variations of abnormal returns, the importance of family blockholders is also examined. Even though he finds negative and significant CAAR of –2.22% in the 4-day event window [–1;+2], for purchases he only reports insignificant CAAR of 0.57% in the same event window. Hence, while purchase transactions do not influence firm value, sales transactions on the contrary seem to do so. Zaabar (2008, p.22) concludes that one way of interpreting this finding is that block acquisition only creates value if the existing target's ownership concentration is diffuse. In France, he argues, the ownership structure is commonly highly concentrated and thus it is not surprising that block acquisitions are less likely to enhance the existing monitoring and control system of the target firm. The analysis of cross-sectional variation of abnormal returns does not reveal any significant causal relationship between changes in firm value and changes in ownership and no relationship between family control and firm value. In general, he emphasizes that high level of ownership concentration (which is dominant in the French publicly traded companies) may explain the little benefits which are added by additional shareholders.

[142] He constructs a sample of 136 non-raider companies (e.g., industrial firms, institutional firms, and individual investor) in Europe for the period 1993 to 2000 (Croci, 2007, p.953).

Table 3.6: Results of the European Studies on Partial Stock Acquisitions

Study[1]	Sample Period (Country)	N[2]	Event Window[3]	CAAR in %
Sudarsanam (1996)	1985-1992 (UK)	180	[–1;0]	5.97***
(STG)[4]		180	[–5;+5]	12.56***
(LTG)[5]		111	[–1;0]	10.68***
		111	[–5;+5]	17.78***
(CAG)[6]		48	[–1;0]	3.47***
		48	[–5;+5]	7.30***
Banerjee et al. (1997)[7]				
(holding firm transactions)	1988-1992 (France)	55	[-30;1]	-1,02
(non-holding firm transactions)		48	[-30;1]	6,18***
Croci (2007)	1990-2001 (EU)	136	[-30,5]	9.12***
		136	[-1;0]	2.44***
		136	[-30;30]	9.30***
Zaabar (2008)[8]	1991-2007 (France)	433	[-1;0]	0.41
(purchases)		433	[-1;3]	-0.63
Zaabar (2008)[9]	1991-2007 (France)	1049	[-1;0]	-1,70***
(sales)		1049	[-1;3]	-2.33***
Stotz (2009)[10]	1999-2008 (EU)	689	[0;1]	1.57***
(All transactions)		*689*	[0;30]	4.34***
(Domestic transactions)		*294*	[0;1]	2.98***
		294	[0;30]	5.43***
(Cross-border transacitons)		*395*	[0;1]	0.52***
		395	[0;30]	3.52***
5 studies; during 1985-2008 period; N_{mean}= 338, N_{median}= 158[11]				$CAAR_{mean}$=5.3%; $CAAR_{median}$= 3.0%[12]

(1) Different samples or subsamples are indicated in italic and in parentheses in the line below the name of the author; (2) *N*:= Number of observation; (3) daily abnormal returns; (4) STG:= the Small Toehold Group, defined as the 5% threshold sample and consists of 180 transactions (63 fitting in STG and LTG); (5) LTG:= the Large Toehold Group, defined as the 20% threshold sample and consists of 111 transactions (63 fitting in STG and LTG) ; (6) CAG:= Creeping Acquisition Group. CAG is a sub-group of the LTG sample with block acquisitions accumulated over time with N=48; (7) Banerjee et al. (1997) examine one sample where the acquirer is a holding firm (holding sample) and another where the acquirer is a non-holding firm (non-holding sample). (8) Zaabar (2008) analyzes purchases and sales transactions. (9) Zaabar (2008) analyzes purchases and sales transactions. (10) Stotz (2009) divides the sample into domestic and cross-border deals. (11) N(mean) and N(median) is the arithmetic mean and median sample size respectively for the studies shown above, except the subsamples in the presented studies. For Sudarsanam (1996) the STG and LTG sample is used only for the calculation; (12) CAAR(mean) and CAAR (median) is the arithmetic mean and median of CAAR respectively presented above for all studies except Zaabar (2008) sales sample. If studies report CAAR for sub-categories and complete samples, I use the CAAR from subsamples to calculate mean and median value of CAAR. For Sudarsanam (1996) the STG and LTG sample is used only for the calculation and for (Stotz, 2009) the domestic and cross-border transactions are used rather than all transactions. I usually tried to use CAAR [-5;+5] to make it comparable among one other but also because CAR[-5,+5] is used as explanatory variable in my cross-sectional regression analysis. Significance level, where 1%, 5%, and 10% level are ***, **, *.

Stotz (2009) examines 686 domestic and cross-border partial stock acquisitions of private equity firms quoted in *Europe* from 1999-2008. The focus is on short- and long-term (market and operating performance) valuation effects and on the importance of geographical proximity. In his analysis he applies an event study methodology and a calendar-time approach to examine the long-term value effect. Moreover, a univariate analysis of CAAR and an analysis of changes of operating performance are applied. Furthermore, he scrutinizes the relationship between AR and accounting returns. In general, the short-term and long-term valuation effect for the target firm is positive and significant. However, the effect is more pronounced for domestic than for cross-border deals, providing evidence for the geographical proximity hypothesis and implying that domestic deals are more profitable than cross-border deals. The findings of stronger returns for domestic rather than for cross-border deals also hold for accounting returns (long-term operating performance effects). In the short-term analysis he

detects a run-up of the excess returns prior to the announcement day. Overall, Stotz (2009, p.26) concludes that private equity investors create value by increasing firm value.

In sum, this section reviewed five European studies on partial stock acquisition announcements with a mean (median) sample size 328 (264) spanning the 1985-2008 period. *Six key findings* have been presented as follows. *First*, the different studies mainly report a positive and significant announcement effect. The mean (median) announcement effect across all studies as presented in Table 3.6 is 5.3% (3.0%). The magnitude of the announcement effect is comparable to the US and German studies although it is slightly less pronounced. However, two studies, Banerjee et al. *(1997)* and Zaabar (2008), report an insignificant announcement effect for partial acquisitions for some sub-samples (holding firm sample and purchases sample). *Second*, the European results are in line with the German and the US studies which report substantial price run-ups previous to the announcement. *Third*, while the short-term announcement effects are positive, the long-term effects are less clear. While Stotz *(2009)* for instance reports positive long-term market reactions in the target firms following the announcement, Banerjee et al. (1997) and Croci (2007), for example, do not find subsequently long-term operating performance effects following the initial announcements. *Fourth*, these studies also contribute to the idea that type and/or intention of the blockholder are important with regard to the potential to create value. This confirms the findings of the German and US studies in the sense that the type of large shareholders matters—different shareholders have various skills and incentives and thus have diverse potential to create shareholder value. *Fifth*, there is no support for the raiding hypothesis (Croci, 2007) and this supports the findings of the US studies. *Sixth*, the cross-sectional analysis of the variation of abnormal returns genders similar findings to the US and German studies. Various drivers are found such as the enhanced monitoring (e.g., Stotz, 2009), undervaluation (e.g., Croci, 2007), and anticipated takeover (e.g., Banerjee et al., 1997). These three competing hypotheses seem to cloud the real drivers for the announcement effect. Overall, the findings from the European studies are in line with the previously presented studies. In conclusion, while partial stock acquisitions seem to create value for the target firm shareholders at least in the short-term, the long-term effect and the drivers for the announcement effect are less well understood.

3.4 SUMMARY AND OUTLOOK

In this section I give an overview of the most important results related to my research question on partial stock acquisitions and their impact on shareholder value. The main results are summarized associated with the literature review and the findings are compared. The open questions are highlighted, which will help to point out the implications for my analysis and pave the way for the remaining chapters in order to shed light on the following question: Do partial stock acquisitions by new institutional investors create value by enhancing the corporate governance system?

The above is examined by focusing on partial stock acquisitions by new institutional investors, who have great potential to create value. As a consequence of the large extent of literature associated with the empirical studies on ownership concentration, corporate governance, and firm performance, a taxonomy of literature on ownership structure and firm performance is set up and the research question is classified within this structure (see Subsection 2.3.1). With this in mind, the comparative dynamic literature is reviewed, which uses the event study methodology to examine the valuation consequences of partial stock acquisition announcements.

The comparative dynamic literature on partial stock acquisitions and shareholder value with regard to the German, US, and European stock market is revealing. To begin with, it is obvious that the US literature on the given subject is more comprehensive than the German and European literature. The review discusses 21 US studies of the 1973-2006 period with a sample mean (median) of 331 (276), six German studies spanning the 1993-2009 period with a sample mean (median) of 151 (136), and 6 European studies of the 1985-2008 period with a sample mean (median) of 338 (159). One important finding is that there are substantial differences in reporting requirements between Germany and US studies. In Germany the investors do not have to disclose their intentions in the investigation period and there are different reporting thresholds. This difference should be borne in mind.

The German empirical literature on comparative dynamic studies (Section 3.1) is rather small, compared to the evidence from the US stock market, consisting only of six studies with the first study dating back to 2006. One reason for the scant literature is certainly the emphasis on internal control (e.g., large shareholders) rather than on external control by the capital market (e.g., partial stock acquisitions) in Germany. However, while the market for full control is indeed weaker in Germany than in the US, or the UK, the market for partial control may act as an important substitute for the former one. The importance of the market for partial control might be underestimated and/or receives too little attention by German studies. Consequently further research could reveal valuable insights

Overall, there are five key findings in the German literature. *First*, on average, significant positive short-term stock market reactions are reported following the announcement of partial stock acquisitions. The mean and median value across all German studies amounts to 5.5% and 3.8%, respectively. While these results hold especially valid for new institutional investors, reverse results are found for traditional institutional investors such as banks. *Second*, both the identity and intention of investors play an important role regarding the effectiveness of monitoring. The empirical evidence points out that there is substantial shareholder heterogeneity and the assumption that only the degree and not the nature of control matters seems to be critical to maintain. *Third*, while the magnitude of the short-term stock market reaction is well understood the valuation consequences for the long-term market and operating performance are less clear. *Fourth*, almost all studies present evidence of run-ups of excess returns for pre-announcement day. *Fifth,* the determinants for the variation of abnormal returns in the cross-section are ambiguous. While various potential drivers for the announcement effect are found, almost no study presents a convincing story to explain the sources for the valuation

effect. Significantly, the monitoring, and the undervaluation hypothesis seem to be important determinants in Germany. These coexisting hypotheses are difficult to disentangle, which makes it even more difficult to find the true drivers of the announcement effect.

The comparative dynamics studies in the US (Section 3.2) date back to the 1981 study of Madden (1981). The applied methodologies have developed over time and can be broadly classified into the first-generation and second-generation studies. While the former mainly focuses on the magnitude of the valuation effects, the latter expands on the first-generation studies and concentrates also on the determinants of the announcement effects. Besides the discrepancies in the extent and structure of the US literature, which differentiate it from its peer studies from Germany and the rest of Europe, seven salient points stand out. *First*, the announcement effect in the short-term is on average positive across all studies, with a few exceptions, and amounts to 5.6% and 4.3% for the mean and median value, respectively. *Second*, run-ups previous to the announcement day are reported by most of the studies. *Third*, the long-term consequences of the partial stock acquisition on the market value and operating performance are less clear. Some of the most recent studies on the hedge funds and other entrepreneurial investors, however, present strong evidence that these investors create value for firms in the short-term as well as in the long-term. *Fourth*, the raiding hypothesis which is analyzed by some papers is unanimously rejected. *Fifth*, the type and intention of the large shareholder does matter with regard to monitoring and control of the incumbent management. *Sixth*, the analysis on the cross-sectional variation of the excess returns following the announcement day (short-term) produces mixed results and does not reveal the true drivers. The studies present evidence for the monitoring, undervaluation, as well as anticipated takeover hypothesis. Particularly with regard to hedge funds and other entrepreneurial investors, convincing results are presented that these investors, indeed, create value through reduction of agency costs. *Seventh*, the five most recent studies on shareholder activism by new institutional investors find credible and strong evidence that these investors certainly create value and point out that these investors could be seen as the "new kids on the block" creating value through monitoring by functioning as a link between internal monitoring by large shareholders and external monitoring by the market for corporate control. The type (active or passive) of hedge funds seems to be important for the value creation—benefiting the active investor. This again underlines that not only the type but also the intention of the blockholder is important. Hence, investors found to be long- rather than short-sighted (e.g., long holding period) help to build an important bridge between internal and external control mechanism, thus enhancing the corporate governance system of the public corporation. As a result, these investors are able to create value not only for shareholder but for society at-large.

The presented other European empirical literature (Section 3.3) is comparable in size to German literature. The first paper dates back to 1996 and six main conclusions result. *First*, a positive mean (median) announcement effect across all studies 5.3% (3.0%) is reported. However, some studies report insignificant or even negative returns for subsamples. *Second*, the studies also find run-ups of

the abnormal returns in the event period before the announcement day. *Third*, while short-term market reaction is positive, the long-term effects on market or operating performance are less clear. *Fourth*, findings of these studies also contribute to the idea that shareholders are not homogenous yet indeed the specific type of large shareholder, or the intention, seems to be crucial for the potential to create value for the firm. *Fifth*, the evidence presented here rejects the raiding hypothesis. *Sixth*, cross-sectional analysis is not able to explain persuasively the drivers for the valuation effect. Nevertheless, all three hypotheses (i.e., monitoring, undervaluation, and anticipated takeover) seem to play a role. Overall, the review of empirical literature on partial stock acquisitions, and their impact on valuation consequences, reveals that there is a positive and significant valuation effect across all studies with only a small number of exceptions.

The US studies reveal, on average, the strongest stock market response with 5.6%, closely followed by the German studies with 5.5% and the European ones with 5.3%. It is apparent that the range of 5.6% to 5.3% is fairly close and thus evidence seems comparable.[143] However, so far literature has always highlighted that the announcement effect is much more pronounced in the US than Germany. Although this literature review is in line with the aforementioned statement, the difference of the average announcement effect is only marginal when using my average announcement effect proxy as benchmark. A run-up of abnormal returns before the announcement day is reported by the literature almost unanimously suggesting a leakage of information or problems with event uncertainty because of difficulties in pinpointing the exact day when the news reached the market. Moreover, looking at the long-term results across various studies it is obvious that unanimous findings of the short-term effect do not pertain in the long-term. As opposed to the German studies, the American and European studies present more convincing results with respect to a positive long-term valuation effect. Five recent US studies on new institutional investors show that these investors not only increase value in the short-term but also augment long-term value of the firm. These findings also exhibit that not only the type of the large shareholder is important but also his intention (e.g., active or passive). Accordingly, the degree of ownership as well as the nature of ownership matters when it comes to evaluating the ability of large shareholders to serve as monitors. At this point it is important to highlight that there is distinctive difference in reporting requirements between the US and German stock markets at the time of the investigation period[144]: according to Schedule 13-D, investors have to disclose intention of their investment, whereas according to §§21 WpHG et seq., investors do not have to disclose any information regarding their intention. Hence, when examining partial stock acquisitions in Germany one may have to use additional tools or indicators to measure the intention of the investor. The analysis of the sources for the announcement effect reveals that the true drivers are masked. Especially three coexisting hypotheses are used to explain the valuation effect (the monitoring, the undervaluation, and anticipated takeover hypothesis). In the US and EU the findings

[143] A word of caution is in order in relation to the interpretation of the average announcement effect figures because they are just rough proxies. The reason behind using these figures is simply to give a general tendency rather than an exact figure.
[144] Since the enforcement of §27a WpHG included through the risk limitation act (Risikobegrenzungsgesetz) Germany has comparable regulations to the US.

suggest that all three hypotheses are important to explain the wealth effect, whereas in Germany only the first two seem to matter. However, one challenge which afflicts the studies is to disentangle the influence of the three different hypotheses. The five most recent US studies on new institutional investors report interesting finding on whether these investors add value by enhancing monitoring and thus help to unravel the puzzle of the true driver behind the valuation effect. At the same time however, the cross-sectional variation for these investors is large and there are major differences in terms of value creation. Significantly, active new institutional investors seem to create value for the firm through monitoring.

In addition to those findings, four questions seem to be unanswered in the literature. *First*, while most of the papers confirm that the type and the intention of the large shareholder matter, the intention of large shareholder has not been studied sufficiently because of different disclosure requirements of the US and German stock markets. *Second*, the determinants of the announcement effect to partial stock acquisition seem to be clouded and there is, especially in Germany, no convincing evidence that helps to disentangle the true drivers of the valuation effect to help answer the question whether these transactions create value by enhancing corporate governance. Finding a way or a tool to unravel the different drivers could help to shed some new light on this question and produce valuable insights. *Third*, while the US studies provide convincing evidence that new institutional investors indeed use their potential and play an important role in strengthening corporate control and create value, comparable evidence in the German stock market is missing. *Fourth*, the short-term effects seem to be much better understood than the long-term effects. While a better understanding of the long-term effects certainly would improve the overall understanding of the role of partial stock acquisitions and large shareholders and their impact on shareholder value, it is still methodologically a critical and difficult undertaking.

The remainder of my dissertation addresses the first three open questions: *first*, does the intention of the large shareholder matter; *second,* what are the determinants of the announcement effect; and, *third*, do new institutional investors employ their potential and create value through enhancing corporate governance. Therefore Chapter 4 will introduce the empirical design of my analysis. Then, Chapter 5 will present the data gathering process for my data for the analysis. Afterwards, Chapter 6 will report and discuss my empirical results.

4 DESIGN OF EMPIRICAL ANALYSIS

The focus of my analysis is on partial stock acquisition announcements of new institutional investors in German public corporations. One can interpret partial stock acquisitions as a synthesis of two corporate governance mechanisms: internal monitoring by large shareholders and external monitoring by the market for (partial) corporate control (see Subsection 2.2.4). Additionally, new institutional investors have great potential to be successful shareholder activists and to create value by addressing corporate governance problems. If this potential is used is an empirical question. This question is investigated by conducting an empirical analysis and by raising *two* main questions. *First*, is the market response to the announcement of a partial stock acquisition positive? *Second*, do new institutional investors use partial stock acquisitions as a tool of corporate governance? To answer these questions event study methodology and cross-sectional methodology are deployed as empirical tools in my dissertation. The purpose of this section is to unfold the design of the empirical analysis.

The remainder begins by examining the applied methodology (Section 4.1), then presents the derivation of the hypotheses of my empirical analysis (Section 4.2), and concludes by setting up the econometrical models used for my investigation (Section 4.3).

4.1 APPLIED METHODOLOGY

This section introduces the event study and the cross-sectional methodology which are used as empirical tools in my analysis. The event study scrutinizes the magnitude of the stock market reaction (announcement effect) in response to new information disseminated in the market by analysing the abnormal returns within a specific period of interest. The cross-sectional analysis uses the announcement effect (CAR_i) of the respective company i determined in the event study as a dependent variable in the cross-sectional analysis and investigates the sources of this announcement effect. The rest of this section proceeds as follows: the event study methodology is outlined (Subsection 4.1.1) before the cross-sectional analysis methodology is introduced (Subsection 4.1.2).

4.1.1 Event Study Methodology

This section presents the technical aspects of the event study analysis.[145] Event studies use financial market data to investigate the impact of an economic event on the firm's stock price. It has to be noted that the focus is on the short-term stock market reactions only. As a matter of fact, such studies assume that the market is efficient in a way that new information will be reflected in the stock price immediately. Moreover, the short-term market reaction is able to measure the event's economic impact on the firm. Those studies have a long tradition and are one of the most accepted statistical designs in finance

[145] The following section extends the discussion of the respective chapter in my Diploma thesis from 2008 (Dragendorf, 2008).

(MacKinlay, 1997). While this section solely concentrates on the methodological issues as applied in my analysis, I refer to Binder (1998), Campbell et al. (1997, Chapter 4), Fama (1991), Kothari and Warner (2007, Chapter 1), and MacKinlay (1997) for further information on event study history, merits, and perils.

There is no unique design of an event study but rather a general flow of analysis (MacKinlay, 1997, p.14). For my applied analysis, the structure of the event study can be broken down into four *steps*. In the *first step*, the economic event of interest is identified and the time window for analyzing the stock market reaction is specified. Then, in the *second step,* the sample under investigation associated with the event of interest is derived. The description of my dataset and sample of the empirical analysis is discussed in Chapter 5. Afterwards, in the *third step*, the abnormal returns are calculated to measure the economic event's impact on the firm's stock price. Finally, in the *fourth step*, the stock market reaction is analyzed by aggregating the individual firm abnormal returns and applying statistical tests to examine whether the abnormal returns are statistically different from zero.[146]

The economic event of interest is the announcement of a partial stock acquisition of a new institutional investor in the German stock market over the seven-year period running from 2002 to 2008.[147] I deploy a 41-day event window comprised into 20 pre-event days and 20 post-event days. Accordingly, the event study methodology is used to examine the short-term[148] movements around the event day. The event study is simultaneously a test of the semi-strong form of market efficiency because it tests whether the market reacts to the new information instantaneously.[149] *Figure 4.1* illustrates the time line of the event study.

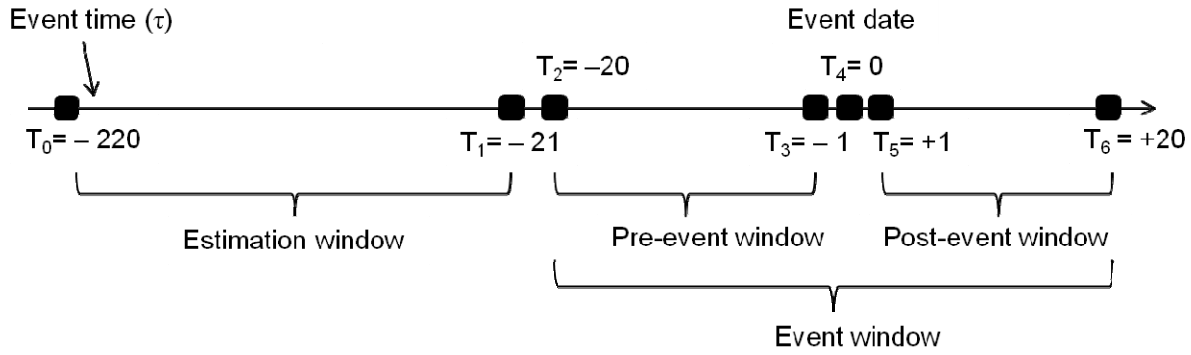
[146] For instance, MacKinlay (1997) outlines a comparable structure of an event study and Campbell et al. (1997, pp.150-151) decompose an event study in seven parts (i.e., event definition, selection criteria, normal and abnormal returns, estimation procedure, testing procedure, empirical results, and interpretation and conclusion).

[147] Partial stock acquisitions usually bring along *two* events of interest: *first*, the transaction day; *second*, the announcement day. These events do not usually fall on the same date. I focus on the announcement effects, which captures the stock market reaction following the release of the announcement of the partial stock acquisition—this is the economic event of interest. While the announcement day has the potential to move the market in the short-run because new information is becoming public, the transaction day is usually not publicly available for all market participants and thus is no new information.

[148] I analyze an event window of 20 days before and after the event. There are also many studies, which analyse the movements of AR in the medium- and long-term (event window of more than 20 days and up to 150 days) after the event day. These incorporate further problems in the investigation and decrease the power of the test (Brown and Warner, 1985). Moreover, the detection of consistent medium- or long-run AR are inconsistent with the efficient market hypothesis, which implies that stock prices adjust immediately within a short-time period (few days) (Ang and Zhang, 2004).

[149] I carry out all calculations for the event study analysis in Microsoft Excel 2007.

Figure 4.1: Time Line for the Event Study



Source: Following MacKinlay (1997, p.20).

In *Figure 4.1* two windows are displayed: the estimation window (left bracket) and the event window (lower right bracket). The event window is further divided into the (20-day) pre-event window, the (1-day) event date, and the (20-day) post-event window. Returns in the event study will be indexed in the event time using τ. In my analysis I define $\tau = T_4$ (= 0) as the event date—the announcement day of the partial stock acquisition. The estimation window runs from $\tau = T_0$ to $\tau = T_1$ whereas T_0 equals – 220 and T_1 equals – 21. Let L_1 be the length of the estimation window. In my analysis the estimation window includes 200 trading days ($L_1 = T_1 - T_0 + 1$). The estimation window has to be reasonably long both to allow for possible seasonal effects and at the same time to prevent possible influences on the parameter estimation (Dimson and Marsh, 1986, p.123; Rau, 2004, pp.137-140).[150] The event window is centered on the announcement day of the partial stock acquisitions $\tau = T_4$ where T_4 is 0. While the pre-event window runs from day $\tau = T_2$ to $\tau = T_3$ where T_2 is – 20 and T_3 equals –1, the post event window runs from $\tau = T_5$ to $\tau = T_6$ with T_5 equals +1 and T_6 equals +20. Let L_2 be the length of the event window. Accordingly, event window comprises 41-days ($L_2 = T_6 - T_2 + 1$) (MacKinlay, 1997, pp.19-20).

The abnormal returns are measured as:

(4.1) $$AR_{i,\tau} = R_{i\tau} - E(R_{i,\tau})$$

where $AR_{i,\tau}$, $R_{i,\tau}$, and $E(R_{i,\tau})$ are abnormal, actual, and expected (normal) returns, respectively.

The AR measure the difference between the actual ex post returns ($R_{i,\tau}$) of firm *i* realized on day τ and the normal returns $[E(R_{i,\tau})]$, as seen in (equation 4.1). The normal return presents the expected return of a company without the influence of the event taking place. Thus a counterfactual situation is

[150] For instance, the January effect would be one kind of a seasonal effect which might influence the return patterns.

usually modeled by a statistical or economic model.[151] Hence, AR measure the abnormal or unexpected component of a securities return (MacKinlay, 1997, p.15).[152]

Stock split adjusted and dividend adjusted end-of-day stock prices are used to calculate AR and are collected from Datastream:[153]

(4.2) $$P_{i,\tau} = P^*_{i,\tau} + d_{i,\tau}$$

$P_{i,\tau}$ is the stock price, adjusted for stock splits at time τ for company i. $P^*_{i,\tau}$ is the stock price, not adjusted for stock splits at time τ for company i, and $d_{i,\tau}$ is the dividend of company i at time τ. The adjustments[154] for stock splits and dividends are theoretically necessary to avoid significant price movements without fundamental impact. For instance, unadjusted prices can cause significant price movement on the day of the dividend payment (ex-dividend price), which could bias the event under investigation (Rau, 2004, p.129). Furthermore, the reference index CDAX is a performance index and hence is adjusted for stock splits and dividend payments. Hence, another reason to use adjusted prices is to facilitate comparability with the CDAX.

Furthermore continuous returns are used instead of discrete returns[155] for the event study:

(4.3) $$R_{i,\tau} = \ln\left(\frac{P_{i,\tau}}{P_{i,\tau-1}}\right)$$

This assumption better fits the normal distribution assumption in multiple period observations (Kritzman, 2003, pp.27-32; Spremann, 2003, pp.60-90).[156]

I use a statistical model, namely the market model, as a return-generating process to calculate the normal returns. The market model assumes a linear relationship between any security return and the return of the market portfolio (Campbell et al., 1997, p.155). The CDAX[157] is used as a proxy for the market portfolio because it represents the German stock market in total and hence is an exceptional gauge of Germany's equity market performance. This is why it is well suited for analytical purposes

[151] Statistical models dominate the use of economic models in event studies such as the CAPM and the APT models. The reason for that is that on the one hand, the results by using the CAPM seem to be heavily dependent on the CAPM restrictions, which have been questioned. This problem, however, can be avoided by using the market model, which explains why the use of the CAPM model has almost ceased. On the other hand, the benefit introduced by the APT model is the reduction of the biased introduced by the CAPM problem. This is also reached, however, by using the statistical models. These reasons explain the dominance of the statistical models in event studies, as discussed by MacKinlay (1997, p.19).

[152] See my discussion in Subsection 4.1.2 on the difference between economic impact and announcement effect.

[153] I used the Total Return Index—datatype (RI) from Datastream which are stock split adjusted and dividend adjusted end-of-day stock prices.

[154] For computation of the adjustment figures see Schmid and Trede (2006, pp.8-9).

[155] Thompson (1988, p.78) discusses the problem of using simple or continuously compounded returns, and he concludes, after carrying out an empirical investigation, that none of these models is analytically superior.

[156] Other studies, however, use discrete returns rather than continuous returns. For instance Dickgiesser and Kaserer (2008, p.15) use an argument by Dissanaike and Le Fur (2003) that for event study logarithmic returns may not be well specified. Nevertheless, it should be noted that there a different possibilities, but I used a standard procedure.

[157] The assumption to use the CDAX can problematically because it is a capital-weighted average index. This might increase the small firm problem, as discussed by Rau (2004, pp.134-137).

(Deutsche Börse, 2008a, p.10).[158] However, no better proxy seems to be available; therefore, I must use it as the second best option. Thus, using the market model, I calculate the expected return $E(R_{i,\tau})$ as follows:

(4.4) $$E(R_{i,\tau}) = \alpha_i + \beta_i \, R_{m,\tau}$$

$R_{m,\tau}$ and $R_{i,\tau}$ are the returns of the CDAX and the return of security *i* in period τ, respectively. An alternative model to the market model is the constant mean return model. The constant mean return model is also applied to check whether the results are sensitive to the model chosen.[159] This very simple model assumes that the expected return of the stock in the event period is the same like the stock's mean return over the estimation period.[160] Although it is one of the simplest models, it still produces similar results like the more sophisticated ones (Brown and Warner, 1980, p.249). However, the market model is a potential enhancement over constant mean return model because the variance of the AR is reduced by removing the variation which is explained by the market's returns (Campbell et al., 1997, p.155).[161]

The true parameters of the market model are unknown and hence in practice one has to use estimators, instead. Therefore ordinary least squares (OLS) estimators are used, which are consistent under the classical assumptions of OLS.[162] If asset returns are jointly multivariate normal, independently and identically distributed *(i.i.d.)* through time, then OLS is also an efficient estimator (MacKinlay, 1997, p.17).

The OLS regression is

(4.5) $$R_{i,\tau} = \alpha_i + \beta_i \, R_{m,\tau} + \varepsilon_{i,\tau} \, ,$$

where

(4.6) $$E\left(\varepsilon_{i,\tau} = 0\right)$$

and

[158] Unfortunately, the CDAX is a capital-weighted index rather than an equally-weighted index, which is a caveat to its use. A capital-weighted index does not rectify the problem emerging through the size effect but even might increase the effect, as stated by Dimson and Marsh (1986, p.134). The CDAX includes 690 companies across the German stock market and hence gives a good performance overview over the German equity market. However, the DAX30 companies have a weighting of 80.5% which highlights the skewed distribution in this capital-weighted index (own calculations, data Deutsche Börse (2008b)). Rau (2004, pp. 134-137) uses the DAFOX-GG which is an equally-weighted index but this index is not available for the whole observation period and hence is unfortunately not applicable.

[159] See Section 6.4 for results of sensitivity analysis.

[160] The derivation of AR by using the constant mean return model is presented in Appendix I.

[161] Campbell et al. (1997, pp.162-163) discuss that the benefit of using the market model over the constant mean-return model depends upon the correlation coefficient (R^2) of the market-model regression. Even though other empirical models can be used, Brown and Warner (1985, p.249) state, "beyond a simple, one factor model, there is no evidence that more complicated methodologies convey any benefit."

[162] The assumptions of the classical linear regression model and the properties of the OLS estimators are for instance discussed by Gujarati (2003, pp.65-76) and Brooks (2005, pp.55-58).

(4.7) $$Var(\varepsilon_{i,\tau}) = \sigma^2_{\varepsilon_\tau}.$$

Hereby $\varepsilon_{i,\tau}$ is by assumption a normally distributed disturbance term. The index τ refers to the event time. Moreover, the market model parameters α_i, β_i, and $\sigma^2_{\varepsilon_\tau}$ are contained in the formula (4.5). The market model parameters are estimated in the estimation window (see Figure 4.1). Thereby $R_{i\tau}$ is regressed on $R_{m\tau}$ during the 200-trading-day estimation period running from day –220 to –21.[163]

After market model parameters are derived, the AR can be calculated as the error term $\varepsilon_{i\tau}$ of the estimation regression. The error term presents the disturbance term of the market model estimated in the estimation period:

(4.8) $$AR_{i,\tau} = \varepsilon_{i,\tau} = R_{i,\tau} - (\hat{\alpha}_i + \hat{\beta}_i\, R_{m,\tau}).$$

For the use of statistical inference the AR are aggregated, across event time as well as across securities (MacKinlay, 1997).[164] What follows is that the average AR (AAR) are derived (Brown and Warner, 1985, pp.6-7):

(4.9) $$AAR_\tau = \frac{1}{N}\sum_{i=1}^{N} AR_{i,\tau}.$$

Hereby AAR_τ is the AAR on a specific event day (τ) across securities *i*. Then the cumulated AAR (CAAR) is derived by aggregating the AAR over a time interval [τ_1, τ_2] where $T_2 \leq \tau_1 \leq \tau_2 \leq T_5$:

(4.10) $$CAAR\,[\tau_1;\tau_2] = \sum_{\tau=\tau_1}^{\tau_2} AAR_\tau.$$

Now, the distributional properties of the AR under the null hypothesis (H_o) can be used to draw inferences over every period within the event window. The distributions of the sample AR and CAAR is assumed to be (MacKinlay, 1997, p.24): [165]

(4.11) $$AAR_\tau \sim N\left(0, \sigma^2(AAR_\tau)\right)$$

and

[163] I present the derivation of the OLS parameters in the Appendix II.

[164] According to MacKinlay (1997, p.21) "tests with one event observation are not likely to be useful so it is necessary to aggregate." In this subsection I show the calculation of the $CAAR_\tau$ using the aggregation across security and then across time. This is equivalent to first aggregate across time and then across security, as discussed by Campbell et al. (1997, p.161). The results are, in both cases, identical. For the cross-sectional analysis (see Subsection 4.1.2) I use the cumulated abnormal return (CAR_i) for a respective company *i* calculated as follows: $CAR_i[\tau_1, \tau_2] = \sum_{\tau=\tau_1}^{\tau_2} AR_{i,\tau}$ (MacKinlay, 1997, p.21).

[165] The conditional variance equals $\sigma^2(AR_{i\tau}) = \sigma^2_{\epsilon_\tau} + \frac{1}{L_1}\left[1 + \frac{(R_{m,\tau} - \hat{\mu}_m)^2}{\hat{\sigma}^2_m}\right]$ and consists of two components. The former one is the disturbance variance from the market model and the latter one presents the additional variance incorporated through the sampling error in α_i and β_i. When increasing the length of the estimation window (L_1), the second term in $\sigma^2(AR_{i\tau})$ approaches to zero as the sampling error of α_i, β_i vanishes. In applications the estimation window (L_1) can be chosen reasonably large so that the assumption that the contribution of the second term is zero is reasonable, as claimed by MacKinlay (1997, p.21). Hence, in my study the second term of the $\sigma^2(AR_{i\tau})$ equation set to zero and thus I mitigate this term. For AAR_τ the variance is calculated as $VAR(AAR_\tau) = \frac{1}{N^2}\sum_{i=1}^{N} \sigma^2_{\epsilon_\tau}$ and for $CAAR\,[\tau_1;\tau_2]$ the Variance is: $VAR(CAAR[\tau_1;\tau_2]) = \sum_{\tau=\tau_1}^{\tau_2} VAR(AAR_\tau)$.

(4.12) $$CAAR[\tau_1;\tau_2] \sim N\big(0, \sigma^2(CAAR[\tau_1;\tau_2])\big).$$

The hypotheses that the *AAR* and *CAAR*, respectively, are significantly different from zero are tested to investigate how the German stock market responds to the announcements of partial stock acquisitions. The H_0 postulates that the event under scrutiny has no impact on the behavior of the stock returns. The alternative hypothesis (H_1), however, postulates that the events have an impact on the stock return behavior (positive or negative). Hence, this test is a two-tailed test and H_0 and H_1 are:

(4.13) $$H_0: AAR_\tau = 0 \text{ respectively } CAAR[\tau_1;\tau_2] = 0$$

and

(4.14) $$H_1: AAR_\tau \neq 0 \text{ respectively } CAAR[\tau_1;\tau_2] \neq 0.$$

To test the null hypothesis that the *AAR* are equal to zero for my sample of *N* securities, I first use the common *t*-statistics which equals the individual event day's AAR divided by the estimation-period standard deviation[166] (MacKinlay, 1997, p.24).[167] It is sensible to check the robustness of my results by using alternative *t*-statistics, which are discussed later in this section. Henceforth the *AAR t*-test (t_{AAR})[168] becomes, for a given event day τ:

(4.15) $$t_{\text{AAR}}(\tau) = \frac{AAR_\tau}{\sqrt{\widehat{\sigma^2}(AAR_\tau)}}.$$

The estimation-period standard deviation (indicated by head $\hat{\sigma}$) is a consistent estimator for the true but unknown variance of the *AAR* (Brown and Warner, 1985; Campbell et al., 1997, Chapter 4).[169] Hence, the *t*-statistic follows the *t*-student distribution because the true variances of the *AAR* and *CAAR* are unknown, but they can be approximated by a standard normal because the estimation window is large and a large number of events is analyzed (MacKinlay, 1997, p.21).

To test the null hypothesis that *CAAR = 0*, a multi-day *t*-statistic is used (Brown and Warner, 1985, pp.28-29). The multi-day *t*-test (t_{CAAR}) is calculated[170] as follows:

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[166] In Excel you can use different functions to estimate the variance or standard deviations (for instance, the Varp and Var function). The difference between these two functions is that the former is the population variance and the latter is the sample variance. Benninga (2006, pp.374-376) claims that when using Excel, VarP is better than Var. I use Varp instead of Var for my calculations because this is in accordance with the slope calculations in excel, as shown by Benninga (2006, pp.374-376). He also states, however, that the differences between the two functions are miniscule.

[167] There is a difference between economic significance of the effect (size of effect) and the statistical significance (*t*-ratio) which is for instance discussed by Thorbecke (2004) and Ziliak and McCloskey (2004). These authors note among others that this difference may lead to wrong inferences.

[168] This test statistic (AAR *t*-test) is standard in the literature but is often called differently: e.g., Campbell and Wesley (1993, p.77) call this test statistic "Portfolio test statistic," Corrado (1989, p.386) calls it "*t*-test—mean excess returns". This situation is similar for the other parametric test introduced in this section namely the SAR *t*-test, which also has no standard name.

[169] Note that in the remainder of this subsection, I use $\hat{\sigma}(AAR)$ as opposed to $\sigma(AAR)$ to distinguish between the estimation-period standard deviation ($\hat{\sigma}$) and the event-period standard deviation (σ) of the respective abnormal returns.

[170] Asymptotically (as the estimation period increases) the variance of CAAR over the estimation window (L_1) can be calculated as follows: $\hat{\sigma}^2(\text{CAAR}[\tau_1;\tau_2]) = (\tau_2 - \tau_1 + 1)\,\hat{\sigma}^2(AR_{i\tau})$ (MacKinlay, 1997, p.21).

(4.16) $$t_{\mathrm{CAAR}[\tau_1;\tau_2]} = \frac{CAAR\,[\tau_1;\tau_2]}{\sqrt{\widehat{\sigma^2}(\mathrm{CAAR}[\tau_1;\tau_2])}}.$$

A number of critical issues accompany the performance of an event study such as the role of sampling interval, event-date uncertainty, and the robustness of results (MacKinlay, 1997).

The role of the *sampling interval*[171] emerges since stock return data is available at various frequencies (e.g., monthly, weekly, daily, hourly, and even shorter frequencies). I opt for using daily return data. Daily data seems to be more beneficial than less frequent data, and the use of high-frequency (less than daily) comes with benefits and costs (MacKinlay, 1997, p.35).

Event-date uncertainty (Ball and Torous, 1988)[172] contests the implicit assumption in event studies that the event date is certain. The widely used approach to deal with this issue is to apply event study methodology to multiday returns (Ball and Torous, 1988, p.124). I also follow this multiday approach which comes with benefits and costs (Ball and Torous, 1988). However, deploying a multiday approach is important in my study because there are severe problems in pinpointing the exact day when the news about the partial stock acquisition is distributed within the market (see further discussion in Section 5.2). The multiday approach is sensible to correct for missing the day (when the market hears of the transaction).

The robustness of results usually refers to problems occurring because of various assumptions that potentially afflict the event study methodology. Generally these are the assumption about the *non-normality* of abnormal returns, *non-synchronous trading*, *market model parameter estimation*, *event clustering*, *autocorrelation* of abnormal returns, and *event-induced change in variance* problems (Brown and Warner, 1985; MacKinlay, 1997). As a consequence, to verify the robustness of the results I conduct *three* alternative well-known test statistics in addition to the commonly used *t*-statistics outlined above, namely the *standardized test* (Patell, 1976), the *standardized cross-sectional test* (Boehmer et al., 1991), and the *non-parametric rank test* (Corrado, 1989) which I outline below.

In the *standardized test* proposed by Patell (1976) the abnormal returns are standardized by its estimation-period standard deviation before being aggregated across security and time ($SAR_{i,\tau} = \frac{AR_{i,\tau}}{\hat{\sigma}(AR_i)}$) (Boehmer et al., 1991; Campbell et al., 1997, Chapter 4). What follows is that the average $SAR_{i\tau}$

[171] The role of the sampling interval emerges since stock return data is available at various frequencies running from yearly, monthly, weekly, or daily to high-frequency data, which is available almost every second. Accordingly, the question arises, what are the gains from using more frequent sampling (MacKinlay, 1997). The advantage of sampling daily data over less frequent sampling data seems clear in terms of the power of the test statistics (MacKinlay, 1997). Morse (1984) examines the trade-offs of using monthly data versus daily data in events studies. Morse (1984, p.619) concludes that usually daily data is preferable compared to monthly except in the case of serious event uncertainty regarding the announcement date of the event under investigation.

[172] The usual assumption in event studies that the event date is certain is unfortunately unrealistic. Especially in financial studies (including my own study) the event date is not certain but rather brings along various uncertainties, because it is less clear when the market was informed about the transaction (Ball and Torous, 1988; MacKinlay, 1997). The common procedure to address this issue of event uncertainty is to use multiday abnormal returns (Ball and Torous, 1988). There is a trade-off, however, since in the aggregating procedure information gets lost and thus the efficiency and statistical power of the applied tests diminish (Ball and Torous, 1988). Ball and Torous (1988) tackle the problem of event uncertainty and find that expanding the event window to two days is sensible and thus the multiday approach is robust as applied in my investigation.

($\overline{\mathrm{SAR}}_\tau$) on a specific event day τ is derived as follows: $\overline{\mathrm{SAR}}_\tau = \frac{1}{\mathrm{N}}\sum_{i=1}^{N} \mathrm{SAR}_{\mathrm{i},\tau}$). The test statistics, henceforth t_{SAR}, on a single event day τ is then calculated as follows:

(4.17) $$t_{\mathrm{SAR}}(\tau) = \sqrt{\frac{\mathrm{N}(\mathrm{L}_1-4)}{\mathrm{L}_1-2}}\,\overline{\mathrm{SAR}}_\tau.$$

L_1 is the length of the estimation period (in my case 200 trading days) and N the number of events. This test statistic assumes that securities abnormal returns have cross-sectional independence and that the event-induced variance is insignificant (Boehmer et al., 1991).

For the analysis of multiday intervals the $\overline{\mathrm{SAR}}_\tau$ are aggregated across event time (cumulated $\overline{\mathrm{SAR}}_\tau$ or, henceforth $\overline{\mathrm{CSAR}}[\tau_1;\tau_2]$) and the standardized test, henceforth t_{CSAR}, is calculated as follows (Campbell and Wesley, 1993; Campbell et al., 1997, Chapter 4):

(4.18) $$t_{\mathrm{CSAR}[\tau_1;\tau_2]} = \frac{\sqrt{\frac{\mathrm{N}(\mathrm{L}_1-4)}{\mathrm{L}_1-2}}\,\overline{\mathrm{CSAR}}[\tau_1;\tau_2]}{\sqrt{\mathrm{L}_\tau}}.$$

L_1 is again the length of the estimation period, and N is the number of events, $\overline{\mathrm{CSAR}}[\tau_1;\tau_2]$ are the cumulated $\overline{\mathrm{SAR}}_\tau$ over the event period from τ_1 to τ_2. Additionally, L_τ represents the length of the multiday interval in the event period $[\tau_1;\tau_2]$ used for calculating $\overline{\mathrm{CSAR}}[\tau_1;\tau_2]$. If the event date's *SAR* are independent across securities, this *t*-statistic can be approximated by a standard normal distribution (Campbell and Wesley, 1993, p.78). Campbell et al. (1997, p.162) discuss the differences between t_{CAAR} and t_{CSAR}, and state that the choice between the two *t*-statistics depends on the assumptions regarding the variance of the *AR*.[173] If the *AR* are larger for securities with higher variance, the *AAR t*-test would be the better choice because it gives equal weight to the realized cumulated *AR* of each security. Moreover, they state that the *SAR t*-test would be the better choice if the true *AR* is constant across securities because it gives more weight to the securities with the lower AR variance. Campbell et al. (1997, p.162) states, however, that the results are not likely to be affected heavily by the choice of *t*-statistics because the variance of the cumulated *AR* is usually of a similar magnitude across securities.

The *cross-sectional standardized test* by Boehmer et al. (1991) is a hybrid test combining the standardized test (Patell, 1976) and the common cross-sectional test[174] (Boehmer et al., 1991). The hybrid test forms the standardized abnormal returns in same manner as in the standardized test (Patell, 1976). However, compared to the standardized test (equation 4.17), the event period standard

[173] Campbell et al. (1997, p.162) use another notation for these two test statistics. When using their notation, t_{CAAR} is J_1 and t_{CSAR} is J_2.

[174] I do not apply this test in my empirical study. However, the test statistic is discussed by Boehmer et al. (1991) and is calculated by dividing the respective abnormal returns by its contemporaneous event-period standard errors. Accordingly, one crucial difference between the traditional method (Brown and Warner, 1985) applied here and the standardized test (Patell, 1976) is that the event-period standard deviation are used instead of the estimation period standard deviation.

deviation across events is used instead of the estimating period standard deviation. The resulting test statistic, henceforth t_{SCAR}, for a given event day τ is:

(4.19)
$$t_{\text{SCAR}}(\tau) = \overline{\text{SAR}}_{\tau} \Big/ \sqrt{\sigma^2(SAR_{\tau})}.$$

The numerator in equation 4.19 is average standardized abnormal returns on event day τ as in equation 4.17. The denominator is the event period cross-sectional standard deviation $\sigma(AR_i)$.[175]

For multiday analysis the test statistics (henceforth t_{CSCAR}) is calculated by adding up the average SCAR across time over the event window, divided by sum of the cross-sectional event period standard deviation across the event time (Friederich et al., 2002; Hillier and Marshall, 2002):

(4.20)
$$t_{\text{CSCAR}} = \sum_{\tau=\tau_1}^{\tau_2} \overline{SAR_{\tau}} \Bigg/ \sqrt{\sum_{\tau=\tau_1}^{\tau_2} \sigma^2(\overline{SAR}_{\tau})}$$

The standardized cross-sectional test discussed above, addresses the problem of event-induced variance,[176] which is a possible bias in event studies. Brown and Warner (1985) discuss that, indeed, evidence exists for event-induced increase in variance; but, Brown and Warner (1985, p.25) state simultaneously that the cross-sectional test is well specified under induced-variance shifts. Boehmer et al. (1991) propose, however, a standardized cross-sectional test which is more powerful than the usual cross-sectional test, and this test works well if event-induced variance increase takes place. Accordingly, using the standardized cross-sectional as seen in equation 4.19 and 4.20 serves as a robustness of possible misspecification because of event-induced variance. Moreover, Boehmer et al. (1991, p.268) conclude that clustering does not influence their results.

The standard methods for testing the null hypothesis (t_{CAAR}, t_{SAR}, t_{SCAR}) are parametric in nature and hence need a specific assumption concerning the distribution of the abnormal return. Brown and Warner (1985) analyze daily NYSE/ASE security AR and deduce that non-normality creates no serious problems for the correct test statistic specification. In another study Campbell and Wesley (1993) analyze daily NASDAQ security AR and find opposite results. Hence, an often used alternative in event studies, in conjunction with their parametric counterparts, are non-parametric tests. These tests are free of specific assumptions concerning the distribution of the AR and help check the robustness and conclusion of the results based on the standard tests, as discussed by Campbell et al. (1997, Chapter 4) and Kritzman (2003). I employ a non-parametric rank test, as proposed by Corrado (1989), to verify the robustness of the results. According to Campbell and Wesley (1993) the test is

[175] Note this time without head over σ because I use standard deviation of *SAR* over the event period as opposed to estimation period. The standard deviations is calculated as: $\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}(\text{SAR}_{i,\tau} - \sum_{i=1}^{N}\frac{\text{SAR}_{i,\tau}}{N})^2}$ (Boehmer et al., 1991, pp.269-271).

[176] The release of new information could have an impact on the moments of the distribution of the abnormal returns around the announcement day and might lead to increase induced variance (Boehmer et al., 1991, pp.254-255).

well specified under event-clustering and event-induced variance; and, it is the best in the presence of infrequent trading. They conclude that the test, "is consistently the best-specified and most powerful test statistic across the numerous event conditions" (Campbell and Wesley, 1993, p.91).

Conducting the rank test requires transforming each event's time series of AR into their respective ranks, as discussed by Corrado (1989):

(4.21) $$K_{i,\tau} = rank\left(AR_{i,\tau}\right) \ , \tau = -220, \dots, +20.$$

Hereby $K_{i\tau}$ symbolize the rank of the abnormal return $AR_{i\tau}$ in the security *i's* time series of all 241 AR. Hereby $AR_{i,\tau 1} \geq AR_{i,\tau 2}$ implies $K_{i,\tau 1} \geq K_{i,\tau 2}$ and $241 \geq K_{i,\tau} \geq 1$. The rank-statistic on a given event day τ ($t_{\text{rank (day } \tau)}$) is calculated as:

(4.22) $$t_{rank\ (day\ \tau)} = \frac{\frac{1}{N}\sum_{i=1}^{N}(K_{i,\tau} - E(K_i))}{\sigma(K)},$$

whereby

(4.23) $$\sigma(K) = \sqrt{\left(\frac{1}{241}\right)\sum_{\tau=-220}^{\tau=+20}\left[\frac{1}{N}\sum_{i=1}^{N}(K_{i,\tau} - E(K_i))\right]^2}.$$

Hereby $K_{i\tau,}$ is the rank of the $AR_{i,\tau}$ on day τ and N is the number of events under consideration. $E(K_i)$ is the average rank which is by construction half the number of observed returns plus one-half,[177] as stated by Corrado (1989, p.37).

According to Campbell and Wesley (1993, p.85), a multiple-event periods rank statistic (t_{rank} (multiple days)) is calculated as follows whereby L_2 is the number of days in the event period:

(4.24) $$t_{rank\ (muliple\ days)} = \frac{\sum_{\tau=\tau_1}^{\tau_1+L_2}\overline{K_\tau}}{\sqrt{\sum_{\tau=\tau_1}^{\tau_1+L_2}\sigma^2(\overline{K_\tau})}},$$

where

(4.25) $$\overline{K_\tau} = \frac{1}{N}\sum_{i=1}^{N}(K_{i\tau} - E(K_i)).$$

By using the ranking procedure the distribution of the AR will be converted into a uniform distribution across the possible rank values despite any asymmetry in the original distribution (Corrado, 1989, p.37).

Three further problems not addressed yet are *non-synchronous trading*, *event clustering,* and *autocorrelation* of abnormal returns.

The *non-synchronous trading* effect occurs if share prices are assumed to be recorded at intervals with one length, but the length of the interval varies or is irregular across events. This effect may

[177] In my case the average rank is 121 or (241/2+1/2). The observed returns which are the numerator in the first term are all returns over the estimation period (-220 to -21) and the event period (-20 until +20).

induce bias to the event study's ordinary least square estimators (Brown and Warner, 1985; MacKinlay, 1997). Particularly with daily trading data the non-trading effect might be detrimental to the beta estimates (Dimson, 1979; Scholes and Williams, 1977). Scholes and Williams (1977) and Dimson (1979) present methods to estimate consistent beta in the presence of non-synchronous trading. However, Campbell and Wesley (1993, p.90) discuss that the modification of the estimation suggested by Scholes and Williams (1977) does not significantly enhance the power of the test. Jain (1986, p.94) addresses the issue of thin trading and concludes that Scholes and Williams (1977) method for estimating beta does not substantially affect distribution of abnormal returns (see also Fidrmuc, 2003; Fidrmuc et al., 2006; MacKinlay, 1997). The rank test serves as a robustness check in the presence of thin or non-synchronous trading (Fidrmuc, 2003; Fidrmuc et al., 2006).

Event clustering is another common issue in event studies. When aggregating the variance of the abnormal returns within the event study (i.e., equation 4.17), it is implicitly assumed that there is no cross-sectional dependence between the events. In other words, it is assumed that the included securities do not overlap in calendar time because then the covariances between the abnormal returns are zero and the variance can be calculated without concern. When this assumption does not hold, the covariances between abnormal returns will not be zero, the common procedure of handling abnormal returns is no longer applicable, and the parametric test might be biased (Fidrmuc, 2003; MacKinlay, 1997). Bernard (1987), for instance, discusses problems of cross-sectional dependence and the implication for research if it is not accounted for. Simulation studies (e.g., Bernard, 1987; Brown and Warner, 1985) report that the problem of event clustering in event studies on a single date generally reduces when using daily data as opposed to using monthly data. The non-parametric rank test addresses the problem of event clustering by accounting for cross-sectional dependence (Fidrmuc, 2003), and thus serves as a robustness check regarding the possibility of clustering.

Autocorrelation of the abnormal returns is another concern with respect to event studies. Not accounting for serial dependence among abnormal returns may lead to misspecification of the variance of the aggregated abnormal returns (Fidrmuc, 2003). However, Brown and Warner (1985, p.25) and Campbell and Wesley (1993, p.91) conclude that the benefits of the autocorrelation adjustment procedure seem to be limited.

Another problem in event studies is the *joint-hypothesis problem.*[178] Inferences regarding market efficiency are difficult because it must be always tested jointly with a statistical or economic model.[179] Hence, precise inferences about the degree of market efficiency are likely to remain impossible

[178] An economic model never can account for all the complexities that we face in the real world and that statistical inference about such a model needs structure. Thus, the concept of market efficiency is everything else than a "well-posed and empirically refutable hypothesis" Lo (2000, p.x). To apply this concept and make it operational, one has to specify additional structure (e.g., utility functions, information structure, model of equilibrium, human behavior) Yet, here is the caveat: the additional structure makes this beautiful concept of market efficiency per se not testable because it is always a test of other auxiliary hypotheses (i.e., the assumptions of the model and the market efficiency itself). A rejection of such a joint-hypothesis problem can be caused by either of the tested hypothesis and hence, tells us little which aspect is inconsistent with the data (Campbell et al., 1997, Chapter 1; Lo, 2000).

[179] The Capital Asset Pricing Model (CAPM) or the Arbitrage Pricing Theory (APT) are economic models, whereas the market model or constant mean return model are statistical model (Campbell et al., 1997).

because of the joint-hypothesis problem, as discussed by Fama (1991) and Campbell et al. (1997, p.24).[180] Another problem is the *selection bias* which emerges among others because the sample is not randomly selected from all securities and that the sample eventually selected may have certain not representative characteristics as discussed by Ahern (2009) and Holmen and Nivorozhkin (2009).

In sum, the conducted methodology is standard in event studies and is also commonly used in the corporate finance literature (and is more or less similarly used by all studies dealing with event study analysis on partial stock acquisition announcements). This section focused on the general framework in my event study and the procedure for measuring and for analyzing the abnormal returns, inherent problems, and critical issues that emerge when carrying out an event study.

4.1.2 Cross-Sectional Methodology

The cross-sectional analysis is used to examine the drivers for abnormal returns calculated within the event study analysis. Simply put, while the event study measures the magnitude, the cross-sectional analysis examines the sources of the announcement effect.[181] Two types of models are deployed—additive multiple-regression and multiplicative multiple-regression (with first-order product interaction terms). This section starts by introducing the simple additive cross-sectional model. Afterwards, multiplicative multiple regression models are treated and the key difference between the two types of models (additive and multiplicative) is discussed.

The cross-sectional regression is applied to gain insights into the relation between the magnitude of the announcement effect (CAR_i) for a specific security i and the respective characteristics of interests (X_i) specific to the event observation (Campbell et al., 1997, Chapter 4).[182] MacKinlay (1997, p.33) states that the cross-sectional analysis is especially helpful if multiple hypotheses exist to explain the abnormal returns (as is the case in my investigation). Equation 4.26 defines the generic (additive) cross-sectional regression model:

$$CAR_i = \beta_0 + \beta_1 x_{1,i} + \beta_2 x_{2,i} + \cdots + \beta_Z x_{Z,i} + \varepsilon_i \tag{4.26}$$

[180] Fama (1991, p.1576) discussed the joint-hypothesis problem and states: "Does the fact that market efficiency must be tested jointly with an equilibrium-pricing model make empirical research on efficiency uninteresting? Does the joint-hypothesis problem make empirical work on asset-pricing models uninteresting? These are, after all, symmetric questions, with the same answer. My answer is an unequivocal no. The empirical literature on efficiency and asset-pricing models passes the acid test of scientific usefulness. It has changed our views about the behavior of returns, across securities and through time. Indeed, academics largely agree on the facts that emerge from the tests, even when they disagree about their implications for efficiency. The empirical work on market efficiency and asset-pricing models has also changed the views and practices of market professionals."

[181] For more information regarding fundamentals of multiple regression analysis see for instance (Greene, 2006, Chapter 2; Gujarati, 2006, Chapter 8).

[182] Note that this time I focus on the cumulated abnormal return (CAR_i) of the respective security i rather than on the cumulated average abnormal return ($CAAR_\tau$), which is calculated for the use of statistical inference in the event study. The calculation of the $CAAR_\tau$ is given in the preceding subsection using the aggregation across security and then across time. As discussed in Subsection 4.1.1 and discussed by Campbell et al. (1997, p.161) this is equivalent to first aggregate across time and then across security. The results are, in both cases, identical. For the cross-sectional analysis I use the cumulated abnormal return (CAR_i) for a respective security i calculated as follows: $CAR_i[\tau_1, \tau_2] = \sum_{\tau=\tau_1}^{\tau_2} AR_{i,\tau}$ (MacKinlay, 1997, p.21).

On the left hand side of equation 4.26 CAR_i represents the dependent variable, i.e., cumulated abnormal return of security *i*. On the right hand, $X_{Z,i}$ *(z=1,...,Z)* captures both the *parameter of interests* which are expected to explain the announcement effect (see Subsection 4.2.2 for derivation of hypotheses) and *other control variables* such as time and industry fixed effects (see Section 4.3). While the regression coefficients and the explanatory variables are the deterministic components of the model (explained part of the variance of the dependent variable), the disturbance term ε_i represents the random component of the model (non-explained part of the variance of the dependent variable). By assumption, ε_i is uncorrelated with *X* and its mean is zero ($E(\varepsilon_i) = 0$) (Greene, 2006, Chapter 2; Gujarati, 2006, Chapter 8).[183] I estimate equation 4.26 by the OLS method.[184]

The 11-day window CAR, running from day –5 to day +5, is chosen as a dependent variable in the cross-sectional analysis to capture the announcement effect. This decision is based on the following considerations: given that the market reacts instantly to the announcement of the partial stock acquisition (and there is no uncertainty over the announcement day or other important factors), the AR relates to the exact day of the announcement. In practice, however, the announcement day is uncertain (see Section 5.2 for construction of event study sample); hence, it is not clear when the market first incorporates the new information. In empirical studies there arises the following trade-off: if the chosen CAR time window is too narrow, one may miss an important part of the announcement effect; however, if the window is too wide, other influences might bias the result since it is not only the announcement effect of the particular event that is measured. A detailed inspection of the germane literature does not reveal a standard procedure, so I chose CAR [-5;+5] as a good compromise to the aforementioned trade-off. To check whether the results are sensitive to the choice of the CAR time window, the sensitivity analysis in Section 6.4 relaxes this assumption and provides results for different time windows used to calculate CAR.

The results of the regression analysis are assessed by comparing the predictions of the empirical framework derived in Subsection 4.2.2 with the *partial regression coefficients* of the respective models and by using the *overall significance* of the model. The *partial regression coefficients* β_Z measure the change in CAR, per unit change in X_Z ($\frac{\partial CAR}{\partial X_Z}$). The usual two-tailed *t*-test is then used to test whether one can reject the null hypothesis that the coefficient for the explanatory variable has no effect on the announcement effect.[185] The *overall significance* of the linear regression model is

[183] I derive the hypotheses for these explanatory variables in Subsection 4.2.2. I conduct the model specification in Section 4.3 and evaluate the results in Section 6.3. More precisely I evaluate the results for the simple additive cross-sectional models in Subsection 6.3.1 to 6.3.4, whereas Subsection 6.3.5 deals with the results of the multiplicative cross-sectional model.

[184] See Subsection 4.1.1 for OLS assumption.

[185] The hypotheses in the two-tail test are as follows: $H_0: \beta_1 = 0$ and $H_1: \beta_1 \neq 0$ and under H_0 hypothesis the partial regression coefficient β_l has no effect at all on the abnormal returns. However, under the alternative H_1 hypothesis the regression coefficient β_l has some effect on the abnormal returns—positive or negative. This hypothesis test can be conducted for any partial regression coefficient (β_z, *z*=1, ..., *Z*) individually. Incorporating this to the null hypothesis it follows that the *t*-statistics is: statitics $= \frac{\beta_1}{\sqrt{\sigma^2(\beta_1)}} \sim t_{n-k}$. Whereas the *t*-statistic follow the *t*-distribution with *n-k* degrees of freedom (n is the sample size and k is the number of explanatory variables including the intercept).

measured by R^2 or adjusted R^2, respectively.[186] The *F*-test then tests whether the dependent variable is (significantly) linear related to the independent variables. This is a joint-hypothesis test which tests the null hypothesis that all coefficients of the explanatory variables in the multiple-regression model are simultaneously zero which is the same as R^2 equals zero.[187]

After having discussed *additive multiple-regression models* (equation 4.26), I proceed with *multiplicative multiple-regression model*s. A key difference between these two types of models is the assumption that the explanatory variables in the *additive multiple-regression model* are additive in their impact on the explained variable. This means that the impact of one explanatory variable on the explained variable (i.e., CAR) is assumed to be constant across the values of the other explanatory variables (Brambor et al., 2006, p.11; Gujarati, 2006, Chapter 8).[188] In contrast *multiplicative multiple-regression model*s account for interaction between different explanatory variables. I apply an interaction model with product term,[189] which is the most widely used approach to model interaction, where one explanatory variable (conditioning variable)[190] is multiplied with other explanatory variables (Jaccard and Turrisi, 2003). For a more comprehensive overview of interaction effects in multiple regression models I refer to Cohen et al. (2003), Jaccard and Turrisi (2003), and Aguinis (2004).

Equation 4.27 defines the generic multiplicative multiple-regression model:

(4.27)
$$\mathrm{CAR}_i = \beta_0 + \beta_1 x_{1,i} + \beta_2 x_{2,i} + \cdots \beta_Z x_{Z,i} + \beta_{\mathrm{Z+1}}\left(x_{1,i} * x_{2,i}\right) + \cdots + \beta_{\mathrm{Z+W}}\left(x_{Z,i} * x_{2,i}\right) + \varepsilon_i$$

The explanatory variable values in equation 4.27 are additive (e.g., x_{1i}) and multiplicative (e.g., $x_{1i} * x_{2i}$). The interaction terms (the non-additive or rather multiplicative part) in this equation and are the product of the conditioning variable x_{2i} with the parameters of interest $x_{1i} \ldots x_{Zi}$ (excluding x_{2i} and excluding the other control variables). These interaction terms depict the difference between equation 4.27 and 4.26. In this specific case the conditioning variable is dichotomous in nature and the other explanatory variables are dichotomous as well as quantitative in nature (more see Sections 4.2 and 4.3). In the multiple-regression models the inclusion of the interaction term converts a general statement (x_1 on CAR) of relationship into a conditional statement (x_1 on CAR conditional on value of

[186] An important property of R^2 is that it rises with the number of explanatory variables and thus do not take the varying number of degrees of freedoms into account. Accordingly, it is important to adjust for the number of explanatory variable in the model to compare different models with the same dependent but differing numbers of independent variables. If two models do not have the same dependent variable we cannot compare the models based on R^2 as discussed by (Gujarati, 2006, p.229)

[187] The multiple coefficient of determination denoted by the symbol R^2 states the proportion of the total sum of squares of the dependent variables (in my case the abnormal returns) that is explained by the X_{zi} explanatory variables (Gujarati, 2006, p.217).

[188] This is most likely one of the most common simplifications in quantitative analysis (Friedrich, 1982, p.797).

[189] Interaction models, however, can take various forms and can be include quadric interaction terms and different orders of interactions (Aguinis, 2004, Chapters 1 to 3; Brambor et al., 2006).

[190] There are other notions for conditioning variables such as the moderator or modifying variable. This variety of notions possible reflects that in social sciences there is no general accepted conceptualization for interaction effects but rather various competing concepts exist, as discussed for instance by Jaccard and Turrisi (2003, p.3).

x_2) (Friedrich, 1982, p.804). Hence, if the conditional variable, as in this case, is dichotomous in nature, the marginal effect of x_{1i} on CAR_i is as follows:

(4.28)
$$\frac{\partial CAR}{\partial X_1} = \begin{cases} \beta_1 & \text{if } x_{2,i} = 0 \\ \beta_1 + \beta_{z+1} & \text{if } x_{2,i} = 1 \end{cases}$$

Equation 4.28 demonstrates that the marginal effect of x_1 on CAR depends on the value of x_2. However, whether there is a significant interaction between x_1 and x_2 is measured by the coefficient β_{z+1}. The results of the most widely-used statistical programs do not provide relevant values for the standard errors needed to calculate whether the marginal effect depending on the conditional variable is statistically significant (Brambor et al., 2006). Using notions from equation 4.28 the relevant conditional standard error is as follows:

(4.29)
$$\sigma_{\frac{\partial CAR}{\partial X_1}} = \sqrt{var(\beta_1) + x_{2,i}{}^2 var(\beta_{z+1}) + 2x_{2i}\mathrm{cov}(\beta_1 * \beta_{z+1})}$$

Apart from this, the same evaluation procedures as in the additive cross-sectional regression model apply. This means that the overall significance and the (conditional) partial regression coefficients are used to evaluate the estimation quality.

There are various problems when applying cross-sectional analysis methodology for instance with the usual OLS assumptions discussed in the last subsection. For instance, I apply heteroskedasticity-consistent *t*-statistics as suggested by White (1980), since MacKinlay (1997, p.33) states that there is no reason to expect the residuals of equation 4.26 and 4.27 having homoskedastic variance.[191]

Other problems arise, for instance, through *causality issues* and *specification errors*.

The *causality issue* is a general empirical problem.[192] For the interpretation of regression results it is important to remind that regression does not necessarily imply causation. Hence, for causal explanation one needs theory. In general, this problem emerges in *two* forms: *first*, reverse causality, and *second*, unobserved firm heterogeneity (Köke, 2002a, Chapter 2). With respect to studies on corporate governance and firm performance, a typical example of a reverse causality problem is the relationship between ownership and firm performance. Higher concentration, on the one hand, of ownership could indeed enhance the governance system and thus cause a better performance. On the other hand, better performance could also simply attract more large shareholders and thus the reverse could be true (Köke, 2002a, Chapter 2). The endogeneity of ownership structure (Demsetz, 1983) is an issue in the empirical corporate governance studies since Demsetz and Lehn (1985) provide evidence for this problem. The subsection on methods used to examine ownership and performance (Subsections 2.3.2 and 2.3.3) revealed that this might be a problem particularly within the static and comparative static literature on ownership and firm value. With respect to my methodology (comparative dynamic approach), the causality problem of the dependent variable is less severe since

[191] Consequently, by using this White's (1980) heteroskedasticity-consistent *t*-statistics, one can continue to apply *t*-tests and *F*-tests which are now valid asymptotically (that is, in large samples) (Gujarati, 2006, Chapter 13).
[192] For a discussion on the causality issue see for instance Gujarati (2006, Chapters 1 and 6)

event studies are able to isolate the market response to specific events (Thomsen et al., 2006).[193] It is still questionable, however, whether the explanatory variable truly causes the dependent variable. Additionally, problems of reverse causality and endogeneity could be a product of unobserved firm heterogeneity. Thereby it is important to incorporate control variables into the models such as size fixed-effect, time fixed-effect, trading volume fixed-effect, and industry fixed-effect to take into account firm heterogeneity and therefore to adjust possible unobserved firm characteristics. Following this lesson, I will derive the hypotheses in Section 4.2 mainly based on theory or other reasoning, will incorporate control variables into my models to reduce the potential bias because of unobserved firm heterogeneity problem, and will conduct a sensitivity analysis (see Section 6.4).

Specification errors (e.g., omission of relevant variables, inclusion of unnecessary variables, adoption of wrong parametric assumption, or measurement errors) are another general problem in econometrical models which lead to estimation bias (Gujarati, 2003, Chapter 11).[194] It is also a well-known problem afflicting empirical studies on corporate governance and firm value because data availability is a common culprit, and linearity is often deployed if little is known about the functional forms (Köke, 2002a, Chapter 2). Hence, it is important to include all theoretical relevant variables from a corporate governance perspective within the econometrical model; yet, the model should be parsimonious—meaning that one should include all core variables while neglecting peripheral variables (Gujarati, 2006, Chapter 11).[195] One variable which is often missing in research on corporate governance and firm performance is for example competition (Köke, 2002a, p.27). For instance, none of the other relevant German studies on partial stock acquisition and firm value considers an explanatory variable to account for degree of competition in their cross-sectional models (see literature review in Section 3.1). In my analysis, however, a variable measuring target firm's competition is used (see Subsection 4.2.2). Furthermore, I deploy various model specifications, continuous as well as qualitative variables, to address problems emerging from incorrect model specification and linearity of parameters. Additionally, I incorporate various control variables to reduce the omitted variable bias, e.g., unobserved firm heterogeneity. Measurement error is another specification error that could bias the estimation results (Köke, 2002a). This includes problems of measuring the involved variables (e.g., performance, firm value, ownership). One problem with respect to performance is that it is not clear how to measure it (see Subsection 2.3.2). Likewise problems also exist for explanatory variables and their proxies used in the econometrical analysis. Another issue is that studies in corporate governance and firm performance, especially studies on partial stock acquisition and its impact on firm value, are usually independent and hand-collected datasets. This circumstance makes the measurement error perhaps even more severe. Unfortunately, there is no straightforward solution to this problem. Nevertheless, the presentation of the process in which I derived my database is comprehensive by

[193] However, event studies of course have other shortcomings as discussed by Thomsen et al. (2006, pp.250-252).
[194] Harvey (1981) formulates five reference criteria that give guidelines when specifying the econometrical model and they are parsimony, identifiability, goodness of fit, theoretical consistency, and predictive power, as discussed by Gujarati (2003, p.336).
[195] For a discussion on corporate governance mechanisms see Section 2.3

making all inputs transparent and by describing the construction of the final sample. I find that this comprehensive process helps us understand the problem with regard to measurement errors.

The explained problems (causality issue and specification errors) are rather general problems to all kinds of cross-sectional analysis. Nonetheless, there are also particular problems when using cross-sectional analysis methodology to examine the determinants of abnormal returns. For instance, a bias can occur from using the abnormal return as a dependent variable because it can be partitioned in at least *two* components, namely the valuation effect and the announcement effect. *First*, the valuation effect or economic impact as termed by Malatesta and Thompson (1985) is the change in the present value of the firm attributed to the event's occurrence. *Second*, the announcement effect is the present value effect because of the event's announcement ("resolution of uncertainty" regarding the event's timing) (Malatesta and Thompson, 1985, p.238). Accordingly, the valuation effect and the economic impact effect are identical if the announcement is totally unanticipated, that is, the market thought the event was not possible prior to the announcement. However, given that the event is at least partially anticipated reduces the announcement effect relatively to the valuation effect. This can bias the results and their prediction since I am interested in the valuation effect and use the announcement effect to proxy the former one. If the latter one is strongly attenuated by the partial anticipation, the magnitude of the valuation impact might not be assessed reliably (Malatesta and Thompson, 1985). MacKinlay (1997, p.33) states that the anticipation of the event could occur because of the investors' use of the firm characteristics to predict the likelihood of an event. This in turn, will bias the linear relationship between the economic impact and firm characteristics because of the discrepancy between economic impact and announcement effect.[196] Solutions are suggested, for instance, by Prabhala (1997) and Acharya (1988), as discussed by MacKinlay (1997, pp.33-34).[197]

In this section, the applied cross-sectional methodology in my empirical analysis is briefly introduced. This procedure is standard in the germane corporate finance literature and comparably applied by the other relevant studies. To begin with, the simple additive multiple-regression model is described before the multiplicative multiple-regression model is introduced. Thereby the focus was on succinctly discussing the specification, estimation, and examination of such models. Afterwards, some inherent problems in estimating econometrical models such as the causality problem, missing variables, and measurement errors are discussed. While the next section (Section 4.2) will develop the hypotheses for the empirical analysis, Section 4.3 will build the econometrical models.

[196] For further discussion on this issue see Campbell et al. (1997, Chapter 4), Kothari and Warner (2007, Chapter 1), and MacKinlay (1997).

[197] Wruck (1989) further decompose the abnormal return into two components—one reflecting the between announcement effect because of the new information and the anticipated value enhancement and the other reflecting the investors compensation for value enhancing activism or entrenchment.

4.2 DEVELOPMENT OF HYPOTHESES

This section presents the development of the hypotheses into the magnitude and determinants of the announcement effect of partial stock acquisitions. A crucial message of both Chapters 2 and 3 is that partial stock acquisitions and new institutional investors certainly have the potential to create value by reducing agency costs. Whether these investors, indeed, meet the potential can be measured using empirical evidence.

The hypotheses discussed in the remainder relate to the magnitude of the announcement effect (Subsection 4.2.1.) and further extend to a cross-sectional analysis of the determinants of the announcement effect (Subsection 4.2.2).

4.2.1 Magnitude of Announcement Effect—Event Study Analysis

This subsection develops testable hypotheses in the context of an event study analysis. An event study methodology can be used to measure the valuation consequences in a target firm by calculating CAAR (i.e., announcement effect) around the event day. In particular, the effect of a partial stock acquisition announcement by a new institutional investor in a German public corporation will be investigated. It can be determined therefore whether the announcement of the partial stock acquisition has a positive, negative, or unrelated effect on the target firm's valuation.

The semi-strong form of market efficiency holds if any new public information will be impounded in the stock price immediately (see Subsection 2.2.5). The announcement of a partial acquisition of a new institutional investor in the German stock market is an example of this. Accordingly, if the semi-strong form of market efficiency holds and the partial acquisition reveals new material information, which is related to the firm value, this information will be reflected in the stock price instantly. The market response depends on the average expectations of the market participants, which are conditional on what the event brings to the firm. The events under scrutiny are partial stock acquisitions. These acquisitions have the potential to create value by enhancing the corporate governance system (see Subsection 2.2.4). Moreover, partial acquisitions may not only address Agency Problem I but also could help to alleviate the conflict of interest between large controlling shareholders and minority shareholders (Agency Problem II). This may be particularly important for German public corporations that are usually characterized as having a high concentration of ownership (see Subsection 2.2.4). The impact of this event depends certainly on the potential opportunities of the target firm (e.g., leeway for reduction of agency costs). However, these potentials also have to be identified and used, which at least partially will depend on the partial acquirers ability to realize these gains. It is proposed that partial stock acquisitions by a new institutional investor could tackle the corporate governance problem and thus create value for the target firm by reducing agency costs (see Subsections 2.2.4 and Subsection 2.3.4).

I present different hypotheses associated with the announcement of a partial stock acquisition. Principally, there are *three possibilities* in relation to how the market can react to such an announcement:

1) A *negative* response
2) A *neutral* response
3) A *positive* response

The *first possibility* is that the market reacts negatively to the partial stock acquisition announcement. This suggests:

$H_{ES}1$: $CAAR < 0$

A possible explanation for this negative response is the *raiding hypothesis* (Barclay and Holderness, 1989). This hypothesis predicts that corporate raiders will decrease the wealth of the target's stockholders by extracting corporate resources.[198] Generally large shareholders may extract private benefits of control at the expense of the remaining shareholders (Bebchuk, 1999; Shleifer and Vishny, 1997). This may exacerbate the Agency Problem II between a large controlling shareholder and remaining shareholders (Villalonga and Amit, 2006). If the market is semi-strong efficient, and the market expects that new institutional investors are corporate raiders and/or extract other private benefits, the market reaction will be negative.

The *second possibility* is that the market does not react to the announcement of the partial stock acquisition at all. This implies the following:

$H_{ES}2$: $CAAR = 0$

There are at least a few explanations for this outcome. To begin with, the market may simply not be semi-strong efficient. If the market were efficient in the weak form only, it would not incorporate new public information disclosures (e.g., announcement of the partial stock acquisition) immediately. Alternatively, if the market is efficient in the strong form, and the reason for the increase is based on non-public information, this information might be priced in before the announcement of the partial stock acquisitions. If the market were not efficient at all, it would also not react to the announcement.[199] Additionally, the partial stock acquisition could be simply irrelevant to the value of the target firm. If this is the case, the market could be efficient in the semi-strong form but still would not react to the announcement.

The *third possibility* is that the market responds positively to the announcement. Partial stock acquisitions can be viewed from a number of perspectives such as activism, portfolio investments, or

[198] There is no precise definition of corporate raiding. However, it certainly reduces the wealth of the shareholders. Besides this, it is everything between looting the corporate cash to greenmail transactions (Holderness and Sheehan, 1985, p.556).
[199] For a discussion on market efficiency, see Subsection 2.2.5.

strategic alliance; and, the valuation consequences can be explained by three coexisting hypotheses: the control transfer hypothesis, the undervaluation hypothesis, and the anticipated takeover bid hypothesis (see Subsection 2.2.4). The use of the terms is not consistent but rather various authors use slightly different notations to describe these three hypotheses. On top of that, some authors differentiate only between two hypotheses and neglect the third hypothesis (anticipated takeover bid hypothesis) or subsume it under the control transfer hypothesis.[200] In the following, I use the control transfer hypothesis under the name *corporate governance enhancement hypothesis*. These three hypotheses imply the following:

$H_{ES}3$: $CAAR > 0$

These hypotheses are not mutually exclusive (Holderness and Sheehan, 1985). This fact makes the analysis of the determinants a difficult task and should be kept in mind.

This discussion shows that there are three possible responses to the announcement of the partial acquisitions (positive, neutral, or negative). It is important to note that even if the market reacts positively there is more than one explanation for this reaction. These hypotheses are not mutually exclusive. To get a greater understanding of the stock market reaction, an investigation into the causes of the market reaction is required.

4.2.2 Determinants of Announcement Effect—Cross-Sectional Analysis

The theory of the firm, agency theory, and theory of control rights all suggest that corporate governance can create value for firms (see Subsection 2.2.1). There is also empirical support for the view that corporate governance does matter and indeed creates value. How this value is created, however, is less understood.[201] Theory is helpful to structure this problem but theory alone is unlikely to provide a comprehensive answer. Instead, empirical evidence is required to help answer the question of whether partial stock acquisition by new institutional investors will indeed enhance the firm's corporate governance system and thus create value for the firm. Accordingly, an econometrical model can be constructed to shed light on the determinants of the announcement effect. The idea is that corporate governance enhancement does have an impact on the value of the firm. As outlined in the previous section (4.2.1), corporate governance enhancement is not the only hypothesis explaining a positive announcement effect. Hence as a second step, a cross-sectional model can be used to analyze the determinants for this effect.

[200] For instance, Holderness and Sheehan (1985) distinguish two hypotheses namely the improved management hypothesis and the superior security analysis hypothesis. Choi (1991) uses three hypotheses namely control transfer hypothesis, anticipated takeover bid hypothesis, and the undervaluation hypothesis. Park et al. (2008) distinguished between monitoring effect, takeover anticipation effect, and undervaluation signaling effect. Croci (2007) uses the corporate governance champion hypothesis and the superior stock-picking hypothesis to examine a positive announcement effect.

[201] For instance, see Sections 2.2 and 2.3 and Sections 3.1 to 3.3.

In this section, I briefly discuss three coexisting hypotheses. The framework of testable hypotheses is then developed for the empirical analysis on the determinants of the announcement effect. *Table 4.1* summarizes the thirteen (unconditional) hypotheses and twelve (conditional) hypotheses related to the cross-sectional analysis.

According to Choi (1991), the positive announcement effect is usually explained by *three* hypotheses: the *monitoring hypothesis* (or corporate governance enhancement hypothesis), the *undervaluation hypothesis*, and the *anticipated takeover bid hypothesis* (see Subsection 2.2.4). The main research hypothesis is concerned with corporate governance enhancement; and, thus I ask whether the positive announcement effect is because of (expected) enhancements in the current corporate governance system. These hypotheses are not mutually exclusive, and it is hard to isolate their effects (Bethel et al., 1998; Croci, 2007; Holderness and Sheehan, 1985). Accordingly, the announcement effect is decomposed into *three parts*: corporate governance enhancement, undervaluation, and anticipated takeover effects. To disentangle the three coexisting hypotheses, and to understand whether the corporate enhancement hypothesis does explain the announcement effect, the analysis further extends to conditional hypotheses. Therefore, the holding period is used as an innovative tool to distinguish transactions. This factor is more likely to drive the announcement effect through enhancement of the governance system (i.e., corporate governance enhancement hypothesis) rather than merely undervaluation (i.e., undervaluation hypothesis). This simply implies that the corporate governance enhancement hypotheses are conditional on the level of HPERIOD. Consequently, the thirteen hypotheses (H_M1- H_U13) are re-examined but this time conditional (i.e., based on a third discrete grouping variable) on HPERIOD ($H_{cond}14$-25). As a result, twelve additional hypotheses conditional on HPERIOD are incorporated into the analysis to investigate the drivers of the announcement effect.[202]

[202] In Section 5.3, I define the variables and explain how I derived them.

Tabelle 4.1: Hypotheses for Empirical Analysis

	Hypothesis	Definition	Sign	Explanation
$H_{CGE}1$	PE	*Private Equity Dummy*: Accounts for the type of investor; distinguishes between private equity firms and hedge funds	+	CGE[(1)]
$H_{CGE}2$	TOEHOLD	*Toehold Dummy*: Indicates whether the partial acquirer has a toehold in the target company	+	CGE
$H_{CGE}3$	BLOCK	*Block Size*: Measures the size of the shareholdings of the partial acquirer	+	CGE
$H_{CGE}4$	HPERIOD	*Holding Period Dummy*: Indicates whether the partial acquirer holds long- (at least 1 year) or short-term (less than 1 year)	–	CGE
$H_{CGE}5$	CONCENTRATION	*Concentration of Ownership*: Measures the ratio of the sum of the 3 largest shareholders to the ten largest shareholder in the target company	–	CGE
$H_{CGE}6$	CONTROLLING	*Ownership Control Dummy*: Indicates whether the target company has a controlling shareholder (>25%)	+	CGE
$H_{CGE}7$	INSTITUTIONAL	*Institutional Ownership*: Measures the percentage of institutional shareholding in the target company	–	CGE
$H_{CGE}8$	MOWNERSHIP	*Managerial Ownership*: Measures the percentage of managerial ownership in the target company	–	CGE
$H_{CGE}9$	SBOARD	*Supervisory Board*: Accounts for the ratio of supervisory board members to management board members	–	CGE
$H_{CGE}10$	COMPETITION	*Product Market Competition*: Assesses competition in the target firm's industry (HHI)[(2)]	+	CGE
$H_{CGE}11$	DEBT	*Leverage*: Measures financial leverage in term of total debt as percentage of common equity	–	CGE
$H_{AT}12$	TO	*Takeover Dummy*: Indicates whether the target companies experience a control-event following the initial partial acquisition	+	AT[(3)]
$H_{U}13$	UV	*Undervaluation*: Assesses the valuation level of the target company measured by the market-to-book value	–	UV[(4)]
$H_{cond}14\text{-}25$	Conditional	Conditional Hypotheses: For long-term investments, corporate governance enhancement variables are more important to explain the announcement effect than for short-term investments.		Conditional Hypotheses

(1) CGE:= Corporate Governance Enhancement; (2) keep in mind that I measure competition based on the Herfindahl index (HHI); and, thus an increase in HHI generally indicates a decrease in competition and vice versa; (3) AT:= anticipated takeover; (4) UV:= undervaluation. The derivation of the explanatory variables, which are used to proxy the hypotheses shown above, is presented in Section 5.3.

In this subsection, eleven testable hypotheses linked to the *corporate governance enhancement* hypothesis are developed. Furthermore, two additional hypotheses (with respect to the undervaluation and the anticipated takeover hypotheses) are constructed to account for the coexisting explanation of the positive announcement effect. Finally, twelve conditional hypotheses are presented to analyze the determinants of the announcement effect.

The potential for *corporate governance enhancement* depends upon *partial acquirer block characteristics* as well as the quality of the *corporate governance system in place* in the target company (Akhigbe et al., 2004; Park et al., 2008). Notably, by using stock market reactions, only expectations about future enhancement in corporate governance can be assessed rather than

assessments of actual corporate governance enhancements.[203] Accordingly, a framework of eleven testable hypotheses is set up whereby four hypotheses are related to the partial acquirer characteristics ($H_{CGE}1$- $H_{CGE}4$), and the remaining seven hypotheses are linked to the target's corporate governance system in place ($H_{CGE}5$- $H_{CGE}11$).

Partial acquirer characteristics are important in measuring the potential of partial acquirers to achieve control over the partial target or rather redistribute control rights and thus enhance management efficiency (Akhigbe et al., 2004). The focus is on one particular type of large shareholders, and these are new institutional investors that have high potential to create value by reducing agency costs in the public corporation. Particularly, *four variables* relate to the potential of the partial stock acquirer: *first*, dummy variable which measure whether the acquirer is a private equity firm or hedge fund *(PE)*; second, a dummy variable which indicates whether the acquirer already has a stake in the targets prior to the transaction *(TOEHOLD)*; *third*, the size of the partial acquirer post transaction *(BLOCK)*; and fourth, a dummy variable indicating the holding period of the partial acquirer (*HPERIOD)*.

In my dissertation, new institutional investors are defined as private equity firms or hedge funds that make a minority acquisition in public equity. Both investors have the qualifications to be excellent corporate monitors because of their business models and organizational structure, differentiating themselves from traditional institutional or other investors (see Subsection 2.3.4). In fact, while both have the potential to be excellent shareholder activists, their business models traditionally also differ. The key differences often proposed are the *time horizon* of the investment and the *investment strategy*. Principally, it is argued that private equity firms are more long-term orientated and try to enhance the target's governance system as opposed to hedge funds, which are more short-term orientated and try to exploit trading opportunities. Different signals are transmitted to the market because the investors follow various strategies (e.g., long-term and value increasing vs. short-term and trading profit), carry different incentives, and implement various skills. Therefore, the market reaction could depend on whether the acquirer is a private equity firm or a hedge fund. Consequently, a private equity dummy (*PE*) is incorporated to investigate this connection. Whereas it might be difficult to capture the difference between these two investment classes empirically, traditionally private equity characterized to be more interested and able to increase corporate governance. Accordingly, this implies the following:

$H_{CGE}1$: *There is a positive correlation between PE and announcement effect*

[203] Assuming that the partial stock acquirers have potential to improve monitoring, the factors that influence performance are at least two fold: actual monitoring events (ex post factors) and potential for future improvements in monitoring (ex ante factors) (Akhigbe et al., 2004). This distinction is not clear-cut because they are both interrelated. Since the stock market is forward looking in nature, it is still sensible to distinguish these two factors because it makes clear what can be evaluated directly on the day of the announcement and what not. Actual monitoring events, e.g., takeovers, proxy fights, shareholder activism, board turnover are not certain on the day of the announcement of the partial stock acquisition. However, the market will incorporate the likelihood of such events in its reaction to the announcement. Accordingly, it is important that that by using stock market reactions I only evaluate expectations about enhancement in corporate governance rather than actual enhancement.

The stock market reaction can further depend on whether the partial acquirer has a *TOEHOLD*. A toehold is defined as the first transaction of a series of at least two transactions of a partial acquirer within the investigation period. Generally, a toehold is one solution to the free-rider problem (Grossman and Hart, 1980) because gains on the toehold may sufficiently cover (at least) some monitoring costs (Shleifer and Vishny, 1986). Moreover, the likelihood of a successful takeover increases with the toehold position (Shleifer and Vishny, 1986). Evidence also suggest that takeovers are more frequent if acquirers hold a toehold prior to acquisition (Choi, 1991). Additionally, the acquisitions of more shares could underline the willingness to enhance monitoring and thus the intention to engage in shareholder activism. The additional commitment of the large shareholder may also send a positive signal to the market. Alternatively, Park et al. (2008, p.532) argue that decreasing marginal benefits would suggest a negative relation between toehold and announcement effect because the gains from a new shareholder are larger than from an existing one. I weigh, however, the first arguments higher than the latter one. Thus, I posit the following hypothesis:

$H_{CGE}2$: There is a positive correlation between TOEHOLD and announcement effect

Quality of monitoring is likely to depend on the *BLOCK* held by the large shareholder. A larger stake is likely to give the shareholder a higher incentive and power to engage in shareholder activism because the benefits are more likely to exceed the costs of monitoring. At the same time large shareholders are more likely to mitigate the free-rider problem in the public corporation. Moreover, a liquidity reason could increase the incentives of the large shareholder to engage in costly monitoring. The line of argument is that the costs of selling the block may increase with size of the block, and this simultaneously affects the probability of engaging in costly monitoring positively (Maug, 1998; Park et al., 2008). Additionally, with increasing block size the likelihood of a takeover increases (Hirshleifer and Titman, 1990; Shleifer and Vishny, 1986). The higher the shareholdings, the easier it is to influence corporate decision. For instance according to §122 German Stock Corporation Act (AktG) shareholders have the right to duly convene a general meeting if their shareholdings are at least 5%. The above reasoning suggests the following:

$H_{CGE}3$: There is a positive correlation between BLOCK and announcement effect

HPERIOD of the investment could give interesting insights into the intentions of the investor, with respect to the particular investment. Particularly for the German stock market, this information might be germane because unlike US regulation, where the investor has to state a purpose of the transactions in every Schedule 13D filing, the German regulation has, in the relevant period, no comparable

regulation (see Chapter 3).[204] Hence, the filing itself does not reveal information about the investment horizon of the investor, but the holding period does. As discussed above, there are *three* coexisting hypotheses that try to explain the announcement effect: *first*, the enhancement of corporate governance; *second,* anticipated takeover; and, *third*, the undervaluation hypothesis. Enhancement of corporate governance needs time because the influence on a firm's policy and decision-making processes cannot be implemented quickly. Hence active investors, who aim to enhance the corporate governance system in place, should have a long holding period because they need some time to reduce agency costs and to realize the gains from these investments.[205] Passive investors, who aim to make gains from undervaluation, are likely to sell the stock as soon as possible. On the contrary, one could argue that a passive investor who wants to hold a diversified portfolio would also have a long holding period; thus, there is no relation between length of the holding period and corporate governance. However, the focus of my analysis is on new institutional investors who are highly unlikely in becoming passive investors or in holding a diversified portfolio. Accordingly, it is assumed that for active new institutional investors a long holding period indicates the willingness to reduce agency costs and thus enhances the corporate governance system. A short holding period, on the other hand, indicates that the investor is trying to exploit short-term misevaluations of the markets. One could be tempted to expect a positive relationship between the length of holding period and the announcement effect because of the long-term commitment of the investor to the target company, which may indicate the interest in the fundamental value (including corporate governance enhancement and other value increasing activities). A long holding period, however, does by no means go concurrently along with stronger announcements effect. Rather the opposite might be the case for *two* reasons. *First*, the adjustment of the stock price is quicker if the driver is undervaluation rather than monitoring because the former just implies a redistribution of information whereas the latter is conditional on the activities of the investor, which is likely to come with more uncertainty. *Second*, an investor who tries to exploit undervaluation (short-term investor) is likely to sell their share as soon as possible. Accordingly, there is some kind of a reverse causality problem, because investments with pronounced announcement effects are more likely to be short-term. The reasoning is that investors are more likely to realize their return on their investment in the short-term if they aim to make a profit on misevaluation. Weighting the above discussion, I use the following hypothesis:

$H_{CGE}4$: There is a negative correlation between HPERIOD and announcement effect

[204] Since the enforcement of §27a WpHG was included through the risk limitation act (Risikobegrenzungsgesetz) on the 12 August 2008, Germany has comparable regulations to the US. Pursuant Section 27a WpHG investors have to inform the issue about their intentions and objectives if their shareholding achieves or exceeds the 10% threshold or an upper threshold according to Sections 21, 22 WpHG et seq.

[205] Dai (2007) argues that the length of the holding period indicates undervaluation rather than monitoring because it signals a commitment to the market. However, I think this only holds if one considers passive investors. Since new institutional investors are notorious for being active investors I think his claim does not hold because these investors are more likely to become active in the target firm if they invest their money for the long-term.

Now attention is turned to hypotheses associated with the *corporate governance systems in place* in the target firm. The potential of an investor to increase value in a firm, of course, does not only depend on their own potential but also on the potential of the firm to be improved. The corporate governance framework (Subsection 2.2.1), the internal (Subsection 2.2.2), and external corporate governance mechanisms (Subsection 2.2.3) have been discussed extensively. I also have highlighted that it is a complex and intertwined system depending on various mechanisms. In my analysis, it is implicitly assumed that the enhancement of corporate governance attributed to large shareholders and the remaining corporate governance mechanism are (imperfect) substitutes (Agrawal and Knoeber, 1996; Cremers and Nair, 2005; Ward et al., 2009).[206] Accordingly, there is a positive relationship between the existing corporate governance system and the additional benefit from a change in ownership structure because of a partial stock acquisition of a large shareholder (Park et al., 2008). Based on my discussion in Subsection 2.1, I decompose the corporate governance system into three *internal* mechanisms (supervisory board, remuneration, and capital structure) as well as three *external* mechanisms (capital market, product and factor market competition, and regulatory systems) to corporate governance. For the empirical analysis I assume that the regulatory mechanism is fairly equal across all firms. This assumption is not too strong, because the focus of the analysis is on a sample of public corporations listed in Germany that comply with more-or-less similar laws and enforcement regulations.

For the sake of clearness and because the ownership structure is of special interest in the analysis, the hypotheses related to the existing corporate governance structure are decomposed into *two groups*: *first*, the target ownership characteristics and *second*, the other corporate governance characteristics. The former one comprises hypotheses associated with the ownership structure whereas the latter one consists of residual corporate governance mechanisms.

The potential of the change in ownership structure (because of the partial stock acquisition) is likely to depend on the *target's ownership characteristics*. The relationship between ownership structure and corporate performance within the corporate governance literature has been regarded with high interest, at least since the pivotal book by Berle and Means (1932). Shareholders are one crucial channel to mitigate this agency problem, because they have the potential to monitor and control management if they have the incentives, capabilities, and power to do so (Shleifer and Vishny, 1986; Shleifer and Vishny, 1997). Notably, multiple dimensions of ownership (concentration and type of shareholder) are important for the effectiveness of large shareholders as corporate governance provision (see Subsection 2.3.3). Additionally, a large controlling shareholder may also consume private benefits (Bebchuk, 1999) at the expense of the remaining shareholders (Villalonga and Amit, 2006). Hence, the size of the block (CONCENTRATION) is only one element alongside the type of large shareholder.

[206] As discussed in Subsection 2.2.1, substitutability means that one mechanism can substitute another without affecting the overall effectivity of the corporate governance system (Cremers and Nair, 2005; Ward et al., 2009).

To grasp the target ownership characteristics a set of three variables is applied: a simple concentration ratio (CONCENTRATION) variable, a measure of ownership control (CONTROLLING) variable, and a variable that measures the type of ownership (INSTITUTIONAL) in the target company.

Equity can act as one mechanism to mitigate the corporate governance problem. Large shareholders have the incentive to monitor and control the management (Shleifer and Vishny, 1986). For a large shareholder, monitoring and controlling costs might be a rewarding and prudent investment because they have a large amount of money at stake. Accordingly, this motivates large shareholders to some kind of activism and thereby mitigates the traditional free-rider problem (Shleifer and Vishny, 1997). Thus, a higher degree of concentration (CONCENTRATION) shall go along with a more efficient governance system because they have the incentive to address the agency problem and enough control rights to enforce their interest in shareholder value maximization. As a corollary I use the following hypothesis:

$H_{CGE}5$: There is a negative correlation between CONCENTRATION and announcement effect

There are also costs of large shareholders. Principally, large shareholders are motivated by two benefits, namely shared and private benefits. The former accrues to all shareholders at the same time; the latter accrues only to the large shareholder, most likely at the expensive of the remaining shareholders (Holderness, 2003).[207] Accordingly, two agency problems exist—on the one hand, between managers and owners (Agency Problem I); on the other, between large shareholders and remaining, smaller shareholders (Agency Problem II) (Holderness, 2003; Shleifer and Vishny, 1997). New institutional investors may be superior agents by creating value not only through reducing conflicts of interest between managers and shareholders but also between controlling shareholders and minority shareholders (Achleitner et al., 2010b) by pursuing shareholder value maximization. Particularly in Germany, the Agency Problem II may have an exceptional importance because of the relative high ownership concentration (Andres, 2008). Hence, a simple linear relationship between concentration of ownership and announcement effect is unlikely. To account explicitly for the non-linear relationship, a control dummy (controlling shareholder with more than 25%) is included. This dummy considers that if the large shareholder gets too powerful, this increases the likelihood of Agency Problem II. Or to put it differently, this variable should account for the fact that simply more concentration is not always better. If an existing large shareholder holds more than 25% of equity, a new large shareholder might be beneficial because he or she may act as a kind of countervailing power to the large shareholder and thus may transmit a positive signal to the market. This leads to following hypothesis:

[207] Private benefits of control can be pecuniary (e.g., synergies in production for a corporate large shareholder or excess salary for an individual large shareholder) or they can be nonpecuniary (e.g., the amenities arising from controlling corporations like newspapers or sports teams) (Holderness, 2003, p.55).

$H_{CGE}6$: There is a positive correlation *between CONTROLLING and announcement effect*

There are two dimensions of ownership: concentration and type of ownership. The importance of the identity of the shareholder has been influenced by the two dimensions approach (see Subsection 2.3.3). To account explicitly for the type of ownership in the target company, an explanatory variable measuring the percentage of institutional ownership (INSTITUTIONAL) is introduced. Institutional investors might be important in mitigating agency problems (Park et al., 2008). There is also some discussion, however, that institutional investors are passive investors and thus do not engage in monitoring Zhang et al. (2008) and Park et al. (2008). If this were true, a relation between announcement of partial stock acquisitions and degree of institutional ownership would be not expected. However, I posit that higher degree in institutional ownership goes along with a more efficient governance structure. This suggests the following:

$H_{CGE}7$: There is a negative correlation between INSTITUTIONAL and announcement effect

The potential of the change in ownership structure also depends on the quality of the remaining governance mechanisms in place—*other target corporate governance characteristics*. Four hypotheses that measure the remaining corporate governance provisions are developed. These are a measure of managerial ownership (MOWNERSHIP), a measure of the effectivity of the supervisory board (SBOARD), a proxy for the competitiveness of the targets industry (COMPETITION), and the measure for the leverage of the target company (DEBT).

Managerial ownership[208] is generally considered to be a good instrument to align the interests between board members management and supervisory board members (i.e., managers and shareholders). I use both the shareholdings of managerial as well as supervisory board members since both are likely to have a conflict of interest with shareholders and recently the compensation of supervisory board members has gained importance (see Subsection 2.2.2). If board members hold a larger stake in the firm, their incentives are more aligned with the interest of the shareholders (Jensen and Meckling, 1976). Overall, I assume that a higher degree of managerial ownership goes along with a better quality of the corporate governance system.[209] This logic implies the following:

$H_{CGE}8$: There is a negative correlation between MOWNERSHIP and announcement effect

The board is at the top of the corporation's hierarchy and is, in principle, the first channel to solve the corporate governance problem (Allen and Gale, 2000b; Kim and Nofsinger, 2007, Chapter 4). Accordingly, I use SBOARD to measure board effectivity. The supervisory board is an important internal corporate governance mechanism because it has the function to monitor and to control

[208] Other type of managerial remuneration (i.e., bonus, options) of course also plays an important role in addressing the agency conflicts between managers and shareholders (see Subsection 2.2.2). However, data about the remuneration such as bonus and options is difficult and cumbersome to collect.

[209] At this point, I want to point out that some other studies posit a quadric relation rather than a linear relationship between performance and managerial ownership (Achleitner et al., 2010a; Köke, 2002a).

management behavior. Principally, there is a positive correlation between effectivity of the supervisory board and the quality of the governance system. However, the effectivity of the board is difficult to capture. The literature usually uses *board size* and *board composition* to measure the effectiveness of this corporate governance provision (Andreas et al., 2010; Denis, 2001; Hermalin and Weisbach, 2003). With respect to the board size, the usual assumption is that there is a negative correlation between board size and board effectivity. The reasoning is, in comparison to large boards, smaller boards communicate better, are faster in decision making, and are less likely to be controlled by management (Denis, 2001; Hermalin and Weisbach, 2003). Regarding the board composition hypothesis, it is assumed that outside directors are more effective in mitigating agency problems than insider directors are (Denis, 2001; Hermalin and Weisbach, 2003). However, Bhagat and Black (2001) suggest that there is no linear relationship between outside directors and the corporate governance system, meaning that more outside directors are not necessarily better (Park et al., 2008). The hypotheses discussed so far usually refer to the one-tier board system and not to the two-tier board system as enforced in Germany consisting of management board and supervisory board.[210] Additionally, in Germany, the supervisory board consists of shareholder as well as employee representatives (co-determination). Moreover, the size of the management board (§76 AktG) and supervisory board members (§§95, 96 AktG)[211] is required by law depending on the nominal share capital. Furthermore, as mentioned earlier, the supervisory board members are only delegated monitors and thus may introduce further conflict of interests between supervisory board members and shareholders (see Subsection 2.3.2). However, I use the ratio of supervisory board members to management board members as a proxy to measure SBOARD effectiveness. This posits that the monitoring and control of the supervisory board members (SBM) is better the larger it is in comparison to the management board members (MBM). Hence, I posit the following:

$H_{CGE}9$: There is a negative correlation between SBOARD and to announcement effect

Another corporate governance mechanism is COMPETITION. At least since Adam Smith (1776) it is a commonly-held belief that competition is the main driver of economic efficiency. The conflict of interest between managers and shareholders might be especially problematic in an organization in less competitive industries because management has more leeway to squander resources. In competitive industries, on the other side, it is argued that forces of competition drives management towards efficiency because otherwise they will not survive (Giroud and Mueller, 2008). Indeed, the internal corporate governance system is unlikely to be the only driver for management to use corporate resources efficiently. External factors such as the competitive environment of the firms are also likely to discipline managements to use resources efficiently. Hence, competition might be an important

[210] Andreas et al. (2010) for instance provide a discussion and empirical analysis of the German two-tier board system.
[211] Pursuant to Section 95 AktG the minimum size is 3 members and the maximum size depends on the nominal share capital and is 9 for € 1.5 million, 15 for € 1.5 to 10 million, and 21 for more than € 10 million.

external corporate governance mechanism (Tirole, 2006, Chapter 1).[212] Köke (2002a, Chapter 2) discusses, however, that competition is often not considered (missing variable) in estimation models on corporate governance. Indeed, inspecting the other German studies on partial stock acquisition and firm value (see Section 3.1) reveal that none of the studies considers competition as an explanatory variable in their cross-sectional analysis. I measure competition based on the Herfindahl-Hirschman-Index (HHI)[213] and thus an increase in HHI generally indicates a decrease in competition and vice versa. Therefore, it follows that:

$H_{CGE}10$: There is a positive correlation between COMPETITION and announcement effect

Debt can also work as an effective corporate governance mechanism. On the one hand, monitoring activity of large creditors can control management (Fama, 1985; Shleifer and Vishny, 1997). The agency problem between managers and shareholders can also be mitigated by financial leverage. The steady stream of interest payments required by debt can function as a (self-)disciplining device for management, which for instance mitigates the overinvestment by managers (Jensen, 1986). Grossman and Hart (1982) and Jensen (1986) for instance argue that debt could function as a disciplining device and thus help to organizational efficiency. The power of creditors stems also from the control rights they obtain when the company goes bankrupt or when the company breaks credit agreements (debt covenants). Additionally, many banks give short-term credits and thus increase their influence because of regular credit renegotiations (Shleifer and Vishny, 1997). On the other hand, one could argue that debt is a double-edged sword since leverage increases both the risk of bankruptcy and the power of the creditor, which may have other interest than shareholders (Milgrom and Roberts, 1992, Chapter 15). I put more emphasis on the former argument and posit that debt is an effective corporate governance mechanism. This logic implies the following:

$H_{CGE}11$: There is a negative correlation between DEBT and announcement effect

In a second step, the *other hypotheses*—the *anticipated takeover hypothesis* (*$H_{AT}12$*) and the *undervaluation hypothesis* (*$H_{U}13$*)—are outlined.

As already discussed earlier, it is questionable whether one considers takeovers as a monitoring device of investors (i.e., corporate governance enhancement hypothesis) or a separate hypothesis (Park et al., 2008). However, if the market expects a possible future takeover following the partial stock acquisition, it would impound this information into the stock price instantly by announcement of the partial acquisition. If this is the case, a positive relation between a following takeover and the partial stock acquisition announcement would be expected because the takeover premium earned in case of a subsequent takeover will be impounded (at least partially) into the stock price (Choi, 1991). The TOEHOLD variable already accounts for this possible premium. To extend this analysis, I use a

[212] See for instance the paper by Kadyrzhanova and Rhodes-Kropf (2010).
[213] See Subsection 5.3.2 for further discussion on HHI.

control event variable (TO). This variable explicitly account for a subsequent control event according to the Securities Acquisition and Takeover Act (WpÜG).[214] If a subsequent takeover takes place after the initial transaction announcement, this might be already at least partially expected at the day of the announcement and thus leads to a stronger market reaction (Akhigbe et al., 2007). This suggests the following:

$H_{AT}12$: There is a positive relation between TO and announcement effect

The other hypothesis is the undervaluation hypothesis. If the partial acquisition is motivated by undervaluation, the acquirer tries to exploit temporarily undervaluation by its private information or superior stock picking ability (Holderness and Sheehan, 1985). The partial acquisition discloses new information to the market, which unlike the information of the first two hypotheses is not conditional on future actions but rather reveals new information about a previous undervalued target share price (Choi, 1991). The market-to-book ratio is a commonly used measure for a firm's undervaluation. This implies the following:

$H_{U}13$: There is a negative relation between UV and announcement effect

Until now, unconditional hypotheses are discussed. In my analysis, an interaction term (see Section 4.3) is used to formally test if there is a difference between the explanatory variables and the announcement effect conditional on whether the acquirer is a short- or long-term investor. To put it differently, in my analysis it is tested whether the value of the slope coefficients of each independent variable on the dependent variables (announcement effect) varies according to the level of HPERIOD. The modifying variable HPERIOD is dichotomous in nature and equals one if the investment is long-term, and equals zero[215] if the investment is short-term.[216] While the first thirteen hypotheses are unconditional hypotheses, the next twelve hypotheses are conditional hypotheses.

Two reasons lead to the inclusion of HPERIOD as an indicator of the intention of the investors. *First*, the review of the germane literature of partial stock acquisitions and firm value has shown that there are crucial reporting differences with regard to Schedule 13D filing and reporting with respect to §§21 WpHG—in the investigation period. Contrary to US regulations, in Germany, investors do not have to state their intention or goals when filing mandatory block acquisitions. This is especially troublesome because US studies have found that this mandatory information about the intention of the investor (beside the type of large shareholders) and the success rate of the stated goals are important for explaining the magnitude of the valuation effect (see Section 3.2). This makes empirical analysis

[214] According to WpÜG investors have to publish information about takeover bids. The BaFin publishes a list on the homepage, which comprises simple acquisition offers; takeover bids and mandatory bids of the target by any investor in the investigation period (see Chapter 5).
[215] The group with all zeros is known as reference group.
[216] At this point, a word of caution is in order because one has to be careful with the expression of a modifying or conditioning variable because all interaction models are symmetric in nature. This implies in turn that if for instance HPERIOD modifies the effect of CONCENTRATION on CAR, then CONCENTRATION must modify the effect of HPERIOD on CAR (Berry et al., 2009; Brambor et al., 2006; Kim and Franzese, 2007).

of the magnitude and drivers of the announcement effect much more cumbersome and more difficult in Germany because new institutional investors are not likely to publish this kind of information voluntarily. Accordingly, when investigating the announcement effect to partial stock acquisitions in Germany, indicators can help to gauge the intention of the investors. While in my analysis I use the holding period of the investment as an indicator, the interaction model is used as the tool to test whether this indicator is meaningful to explain cross-sectional variation of the announcement effect. *Second*, new institutional investors have potential to create value by enhancing the target firm's corporate governance system because they have strong incentives and are nimble investors with the right skills to monitor and control management. Evidence from US studies (see Section 3.2) suggests that the intention does matter, even among new institutional investors as large shareholders.

Accordingly, the interaction term is included to test my *two hypotheses*: *first*, for long-term investments corporate governance enhancement variables are more important to explain the announcement effect than for short-term investments. This simply implies that the corporate governance enhancement hypotheses are conditional on the level of HPERIOD. *Second*, for the undervaluation variable there is a constant effect on CAR unconditional of HPERIOD. Consequently, the unconditional hypotheses are re-examined but this time conditional on HPERIOD. My idea is based on the assumption that a long-term holding period indicates that new institutional investors are more likely to create value thorough corporate governance. Hence, if this were true, it would have impact on the interaction between HPERIOD and the other explanatory variables. In other words, the interaction between HPERIOD and at least some corporate governance variables should be significant because these measures should be relatively more important if the new institutional investors are a corporate governance champion than otherwise. For the same reason, there should be no interaction effect observable between HPERIOD and the Other Hypotheses (i.e., undervaluation and takeover hypothesis). Hence, the idea is that given there is an interaction effect, this would indicate that, indeed, corporate governance enhancement has a substantial contribution for the shareholder wealth effect of the target company. The above reasoning implies the following:

H_{Cond}14-25: Long-term orientated new institutional investors are more likely to enhance firm value through corporate governance enhancement than through undervaluation

The purpose of this subsection was to develop the empirical framework for my analysis into the determinants of the sources of the announcement effect of partial stock acquisitions. First, thirteen testable (unconditional) hypotheses are derived that explain the announcement effect, which are used to design cross-sectional models to examine the determinants of the announcement effect of partial stock acquisitions. The corporate governance enhancement hypothesis is the main research hypothesis and eleven predictions have been developed (*H_{CGE}1- H_{CGE}11)*. The other two coexisting hypotheses namely the anticipated takeover hypothesis (*H_{AT}12*) and the undervaluation hypothesis *(H_U13*) account for the coexisting explanations for the announcement effect. Moreover, to extend the analysis, an

additional twelve conditional hypotheses are developed. These hypotheses may help to disentangle the coexisting hypotheses explaining the announcement effect. Consequently, they may help to examine whether long-term investments by new institutional investors are driven by corporate governance enhancement rather than undervaluation reasons.

4.3 DESIGN OF ECONOMETRICAL MODELS

This section conceptualizes the econometric models, which are used to analyze my research question. I start with a brief overview of the models, and I then use a stepwise model building approach to unfold the different model specifications (*Model 1-Model 5*).

As discussed in Section 4.2, the literature offers *three hypotheses* to explain the announcement effect (Monitoring, Undervaluation, and Anticipated Takeover Hypothesis). Based on these hypotheses, the framework is built consisting of thirteen unconditional as well as twelve conditional testable hypotheses to analyze my research question empirically (see *Table 4.2*). Thus, to find out whether the expected enhancement of corporate governance is responsible for the announcement effect, five pairs of models are estimated (see *Table 4.3*).

My research focuses on the corporate governance system of public corporations. It is investigated whether the stock market reactions following partial stock acquisition announcements relate significantly to expected enhancements in the respective corporate governance system of a target company. To explore expected corporate governance enhancement empirically, the hypotheses linked to corporate governance enhancement are decomposed into *three parts*:

1) *Partial Acquirer Characteristics* (PAC)
2) *Target Ownership Characteristic* (TOC)
3) *Other Target Corporate Governance Characteristics* (OTCGC)

The first part measures the potential of the partial acquirer to enhance the governance system. The other two parts capture the governance structure in place in the target company prior to the acquisition announcement. Hypotheses associated with corporate governance enhancement encompass hypotheses $H_{CGE}1$-$H_{CGE}11$ as seen in *Table 4.2*.[217]

PAC comprises four variables namely private equity dummy (PE)[218], toehold dummy (TOEHOLD), block size (BLOCK), and holding period dummy (HPERIOD). Specifically, it should be pointed out at this stage that in the analysis I distinguish between PAC and PACH. The former comprises the first three variables, whereby the latter one consists of all four variables including HPERIOD. The reasoning behind this composition is that the HPERIOD is used to distinguish the intentions of the acquirer. This idea will be amplified later.

[217] This table is an enlargement of Table 4.1, extended for the coefficients of the explanatory variables as well as for the various groups of explanatory variables.
[218] In Section 5.3, I define the variables and describe the derivation procedure.

TOC includes three variables namely concentration of ownership (CONCENTRATION), ownership control dummy (CONTROLLING), and institutional ownership (INSTITUTIONAL).

OTCGC consists of four variables: managerial ownership (MOWNERSHIP), supervisory board (SBOARD), product market competition (COMPETITION), and leverage (DEBT).

CONDITIONAL comprises twelve additional variables which are interaction terms. The interaction terms constitute the product of the explanatory variables (except the HPERIOD) with HPERIOD. By incorporating the conditional hypotheses into my model, it transforms from an additive cross-sectional model into a multiplicative cross-sectional model.

To isolate the corporate governance enhancement hypothesis, variables linked to the *Other Hypotheses* (OH) are incorporated. Hypotheses related to them comprise $H_{AT}12$ and $H_{U}13$. Two variables are used to account for the other hypotheses, one measuring undervaluation (UV) and the other a possible future control event (TO).

To control for omitted variables, and particularly for firm heterogeneity, a set of control variables is used to control for size effect (SIZE), volume effect (VOL), industry fixed effect (INDUS), and time fixed effect (TIME).

Tabelle 4.2: Hypotheses for the Econometrical Models

Hypothesis	Name	Brief Description	Coeff	Sign of β_i	Group
$H_{CGE}1$	PE	*Private Equity Dummy*	β_1	+	PAC
$H_{CGE}2$	TOEHOLD	*Toehold Dummy*	β_2	+	PAC
$H_{CGE}3$	BLOCK	*Block Size*	β_3	+	PAC
$H_{CGE}4$	HPERIOD	*Holding Period Dummy*	β_4	–	PACH
$H_{CGE}5$	CONCENTRATION	*Concentration of Ownership*	β_5	–	TOC
$H_{CGE}6$	CONTROLLING	*Ownership Control Dummy*	β_6	+	TOC
$H_{CGE}7$	INSTITUTIONAL	*Institutional Ownership*	β_7	–	TOC
$H_{CGE}8$	MOWNERSHIP	*Managerial Ownership*	β_8	–	OTCGC
$H_{CGE}9$	SBOARD	*Supervisory Board*	β_9	–	OTCGC
$H_{CGE}10$	COMPETITION	*Product Market Competition*	β_{10}	+	OTCGC
$H_{CGE}11$	DEBT	*Financial Leverage*	β_{11}	–	OTCGC
$H_{AT}12$	TO	*Takeover Dummy*	β_{12}	+	TO
$H_{U}13$	UV	*Undervaluation*	β_{13}	–	UV
$H_{cond}14\text{-}26$	INTVAR	*Interaction Variables*	β_{14-25}		CONDITIONAL

CGE:= Corporate Governance Enhancement; AT:= Anticipated Takeover; U:= Undervaluation. PAC:= Partial Acquirer Characteristics (without HPERIOD), PACH:= Partial Acquirer Characteristics (including HPERIOD); TOC:= Target Ownership Characteristics; OTCGC:= Other Target Corporate Governance Characteristics; TO:= Future Control Events; UV:= Undervaluation.

In what follows, five different pairs of econometric models are presented. A stepwise model building is performed to assemble the different specifications of the econometric models. Each model specification is carried out both with (Model B) and without (Model A) control variables. Hence, for each model there exists an A and a B version. Accordingly, five different pairs of models are used: *Model 1.A-B*, *Model 2.A-B*, *Model 3.A-B*, *Model 4.A-B* and *Model 5.A-B*. *Table 4.3* summarizes the stepwise model building approach and gives an overview of the different models.

In the models, I argue the idea that the expected corporate governance enhancements are significant drivers of the announcement effect. Whether the argument finds support in the data will be analyzed later (Chapter 6). In this section, however, the framework is set for this empirical analysis. To start, a

PARTIAL ACQUIRER MODEL (M1) is presented which tests the influence of PAC variables on the announcement effect. Then, a *CORPORATE GOVERNANCE MODEL* (M2) is discussed which uses, in addition to the PAC variables of M1, the TOC and OTCGC variables, which measure the target corporate governance system in place. Afterwards, an *ANNOUNCEMENT EFFECT MODEL* (M3) is unfolded, which uses the OH variables in addition to the previous introduced variables in the last model (PAC, TOC and OTCGC). Subsequently the *HOLDING PERIOD MODEL* (M4) adds a holding period variable to M3 but everything else stays unchanged. Finally, an *INTERACTION MODEL* (M5) is specified, where interaction variables between HPERIOD and the other explanatory variables are introduced to disentangle the coexisting hypotheses of the announcement effect.

Tabelle 4.3: Overview of Empirical Models—Step Wise Model Building Approach

Model	Name	Explanatory Variables
M1	PARTIAL ACQUIRER MODEL	PAC
M2	CORPORATE GOVERNANCE MODEL	M1+ TOC + OTCGC
M3	ANNOUNCEMENT EFFECT MODEL	M2 + TO + UV
M4	HOLDING PERIOD MODEL	M3 + HPERIOD
M5	INTERACTION MODEL	M4 + interaction terms

Where PAC comprises *H_m1-H_m3),* TOC contains H_m5-H_m7 and OTCGC comprises H_m8-H_m11, TO and UV are $H_{AT}12$ and H_U13), interaction terms are the product of the holding period dummy with the other explanatory variables ($H_{cond}14$-25).

My *starting point* is the PARTIAL ACQUIRER MODEL *(M1)*, a simple model linking announcement effect to PAC. As highlighted earlier, the quality of shareholder activism depends not only on the size of the block but also on the type and intention of the shareholder. This set of variables measures the characteristic of the partial stock acquirer and specific deal characteristics. At the beginning, the HPERIOD variable is not considered, which will be introduced later. In particular, three variables are used to measure the potential of the partial stock acquirer: *first*, PE is included to account for differences between private equity firms and hedge funds associated with their potential to enhance the respective governance system in place in the target company. *Second*, the TOEHOLD variable is incorporated into the model to account for differences in market reaction for toehold and toehold-less transactions. *Third*, BLOCK is an important variable since it is expected that larger ownership gives shareholders higher incentives and power to increase monitoring and control. In that case M1 expresses *Model 1* as follows:[219]

(M1) $$CAR_i = \alpha + \boldsymbol{\Lambda_1 PAC_i} + \boldsymbol{\Lambda_6 CONTROLS_i} + \varepsilon_i$$

where $$\boldsymbol{\Lambda_1 PAC_i} := \beta_1 PE_i + \beta_2 TOEHOLD_i + \beta_3 BLOCK_i$$
$$\boldsymbol{\Lambda_6 CONTROLS_i} = \delta_1 SIZE_i + \delta_2 VOLUME_i + \delta_3 INDUSTRY_i + \delta_4 TIME_i$$

The framework used for my analysis suggests that coefficients β_1, β_2 and β_3 will be positive. As discussed above various pairs of models are specified distinguishing one another through the inclusion

[219] Note that $\boldsymbol{\Lambda_1}$ and $\boldsymbol{\Lambda_6}$ and **PAC** and **CONTROLS** are row and column vectors, respectively. Thus $\boldsymbol{\Lambda_i}$ is not estimated in the multiple regression analysis but rather the relevant β_i and δ_i of the explanatory variables and control variables, respectively, as seen in equation M1.

(Model B) and exclusion (Model A) of control variables. Accordingly, while Model 1.A is estimated without CONTROLS, Model 1.B includes CONTROLS, which is a set of control variables controlling for size fixed effects, volume fixed effects, industry fixed effects, and time fixed effects.

In a *second step*, the partial acquirer model is extended by introducing target corporate governance variables to specify the *CORPORATE GOVERNANCE MODEL* (*M2*). The potential for the future enhancement of the corporate governance system in place in the target company is probably not only linked to PAC (PE, TOEHOLD, and BLOCK) but also to the quality of the target corporate governance system in place; that is, that large outside shareholders with the intention to create value through improvements of the corporate governance system are likely to create more value the more they can improve the existing corporate governance system at the target firm. For this line of reasoning it is important to assume that the corporate governance mechanisms are (imperfect) substitutes (see Subsection 2.2.1). To explicitly account for a target firm's corporate governance system pre-transaction, I continue to specify *M2* presenting the announcement effect as a function of PAC and TCGC variables. TCGC is decomposed in TOC and OTCGC. Specifically, I account for five corporate governance mechanisms: ownership structure, incentive of management, supervisory board, debt, and product market competition. TOC comprise *three variables* namely CONCENTRATION, CONTROLLING, and INSTITUTIONAL. Additionally, the OTCGC variables contain *four variables*: MOWNERSHIP, SBOARD, COMPETITION, and DEBT. I depict Model 2 in equation M2 as follows:

(M2) $$CAR_i = \alpha + \boldsymbol{\Lambda_1 PAC_i} + \boldsymbol{\Lambda_2 TOC}_{\boldsymbol{i}} + \boldsymbol{\Lambda_3 OTCGC_i} + \boldsymbol{\Lambda_6 CONTROLS_i} + \varepsilon_i$$

where
$$\boldsymbol{\Lambda_1 PAC_i} := \beta_1 PE_i + \beta_2 TOEHOLD_i + \beta_3 BLOCK_i$$
$$\boldsymbol{\Lambda_2 TOC_i} := \beta_5 CONCENTRATION_i + \beta_6 CONTROLLING_i + \beta_7 INSTITUTIONAL_i$$
$$\boldsymbol{\Lambda_3 OTCGC_i} := \beta_8 MOWNERSHIP_i + \beta_9 SBOARD_i + \beta_{10} COMPETITION_i + \beta_{11} DEBT_i$$
$$\boldsymbol{\Lambda_6 CONTROLS_i} = \delta_1 SIZE_i + \delta_2 VOLUME_i + \delta_3 INDUSTRY_i + \delta_4 TIME_i$$

Coefficients β_1, β_2, β_3, β_6 and β_{10} will be positive and coefficients β_5, β_7, β_8, β_{10} will be negative according to the framework applied in this empirical analysis. In a uniform manner as in M1, Model 2.B includes CONTROLS whereas Model 2.A does not include this set of control variables.

In the *third step*, the ANNOUNCEMENT EFFECT MODEL (*M3*) is built, which extends the analysis by taking the two other coexisting hypotheses (OH) into account. The undervaluation hypothesis is captured with UV. The anticipated takeover hypotheses is considered with one variable namely TO. Model 4 is presented in M3 as follows:

(M3) $$CAR_i = \alpha + \boldsymbol{\Lambda_1 PAC_i} + \boldsymbol{\Lambda_2 TOC_i} + \boldsymbol{\Lambda_3 OTCGC_i} + \boldsymbol{\Lambda_4 OH_i} + \boldsymbol{\Lambda_6 CONTROLS_i} + \varepsilon_i$$

where
$$\boldsymbol{\Lambda_1 PAC_i} := \beta_1 PE_i + \beta_2 TOEHOLD_i + \beta_3 BLOCK_i$$
$$\boldsymbol{\Lambda_2 TOC_i} := \beta_5 CONCENTRATION_i + \beta_6 CONTROLLING_i + \beta_7 INSTITUTIONAL_i$$
$$\boldsymbol{\Lambda_3 OTCGC_i} := \beta_8 MOWNERSHIP_i + \beta_9 SBOARD_i + \beta_{10} COMPETITION_i + \beta_{11} DEBT_i$$
$$\boldsymbol{\Lambda_4 OH_i} := \beta_{12} TO_i + \beta_{13} UV_i$$
$$\boldsymbol{\Lambda_6 CONTROLS_i} = \delta_1 SIZE_i + \delta_2 VOLUME_i + \delta_3 INDUSTRY_i + \delta_4 TIME_i$$

According to the three hypotheses presented to explain the announcement effect, it is likely that the additional two hypotheses (i.e., TO and UV) should matter. The framework implies that β_1, β_2, β_3, β_6, β_{10} and β_{12} will be positive and β_5, β_7, β_8, β_9 and β_{13}will be negative. Again, Model 3.A does not include CONTROLS, whereas Model 3.B does include them.

In a *fourth step*, an additional PAC variable is introduced into the model to build the HOLDING PERIOD MODEL (*M4*). The additional variable is holding period (HPERIOD), which captures the holding period of the large shareholders investment, which may give interesting insights into the intention of the investor. The holding period model differs from the announcement effect model only in the inclusion of HPERIOD variable; this is a methodological tool to proxy the intention of the acquirer. Hence, equation M4 is as follows:

(M4) $$CAR_i = \alpha + \boldsymbol{\Lambda_1 PACH_i} + \boldsymbol{\Lambda_2 TOC_i} + \boldsymbol{\Lambda_3 OTCGC_i} + \boldsymbol{\Lambda_4 OH_i} + \boldsymbol{\Lambda_6 CONTROLS_i} + \varepsilon_i$$

where
$$\boldsymbol{\Lambda_1 PACH_i} := \beta_1 PE_i + \beta_2 TOEHOLD_i + \beta_3 BLOCK_i + \beta_4 HPERIOD_i$$
$$\boldsymbol{\Lambda_2 TOC_i} := \beta_5 CONCENTRATION_i + \beta_6 CONTROLLING_i + \beta_7 INSTITUTIONAL_i$$
$$\boldsymbol{\Lambda_3 OTCGC_i} := \beta_8 MOWNERSHIP_i + \beta_9 SBOARD_i + \beta_{10} COMPETITION_i + \beta_{11} DEBT_i$$
$$\boldsymbol{\Lambda_4 OH_i} := \beta_{12} TO_i + \beta_{13} UV_i$$
$$\boldsymbol{\Lambda_6 CONTROLS_i} = \delta_1 SIZE_i + \delta_2 VOLUME_i + \delta_3 INDUSTRY_i + \delta_4 TIME_i$$

If HPEROID is a useful tool, it should significantly add to the explanatory power of the model. In addition, the other variables previously significant should stay significant. Hence, the framework suggests that β_1, β_2, β_3, β_4, β_6, β_{10}, and β_{12}will be positive and β_4, β_7, β_8, β_9, and β_{13} will be negative. In the exact same manner as discussed previously, M4.A does not include CONTROLS, while M4.B does include them.

In a final step, the INTERACTION MODEL (M5) is specified. This is a multiplicative rather than an additive multiple-regression model as M1 to M4 (for more details on the differences between these two models see Section 4.1.2). As a conditioning variable, HPERIOD is used. This is a dichotomous variable, and is taking zero for all short-term investments and one for all long-term investments (see Subsection 5.3.1). Then, twelve interaction variables (INTVAR) are created with the remaining explanatory variables. The interaction variable for PE, for instance, is defined as the product of the PE variable times HPERIOD variable (i.e., PE*HPERIOD). The coefficient for this term measures the interaction effect and thus formally tests whether there is a difference in the interaction (value of the slope) of the explanatory variables (PAC, TOC, OTCGC, and OH) in relation to the announcement effect conditional on the holding period (short-term or long-term). Equation M5 depicts the model as follows:

(M5) $$CAR_i = \alpha + \boldsymbol{\Lambda_1 PACH_i} + \boldsymbol{\Lambda_2 TOC_i} + \boldsymbol{\Lambda_3 OTCGC_i} + \boldsymbol{\Lambda_4 OH} + \boldsymbol{\Lambda_5 INTVAR_i} + \boldsymbol{\Lambda_6 CONTROLS_i} + \varepsilon_i$$

where

$$\boldsymbol{\Lambda_1 PACH_i} := \beta_1 PE_i + \beta_2 TOEHOLD_i + \beta_3 BLOCK_i + \beta_4 HPERIOD_i$$

$$\boldsymbol{\Lambda_2 TOC_i} := \beta_5 CONCENTRATION_i + \beta_6 CONTROLLING_i + \beta_7 INSTITUTIONAL_i$$

$$\boldsymbol{\Lambda_3 OTCGC_i} := \beta_8 MOWNERSHIP_i + \beta_9 SBOARD_i + \beta_{10} COMPETITION_i + \beta_{11} DEBT_i$$

$$\boldsymbol{\Lambda_4 OH_i} := \beta_{12} * TO_i + \beta_{13} * UV_i$$

$$\begin{aligned}\boldsymbol{\Lambda_5 INTVAR_i} := {} & \beta_{14}(PE_i * HPERIOD_i) + \beta_{15}(TOEHOLD_i * HPERIOD_i) \\ & + \beta_{16}(BLOCK_i * HPERIOD_i) + \beta_{17}(CONCENTRATION_i * HPERIOD_i) \\ & + \beta_{18}(CONTROLLING_i * HPERIOD_i) + \beta_{19}(INSTITUTIONAL_i * HPERIOD_i) \\ & + \beta_{20}(MOWNERSHIP_i * HPERIOD_i) + \beta_{21}(SBOARD_i * HPERIOD_i) \\ & + \beta_{22}(COMPETITION_i * HPERIOD_i) + \beta_{23}(DEBT_i * HPERIOD_i) \\ & + \beta_{24}(TO_i * HPERIOD_i) + \beta_{25}(UV_i * HPERIOD_i)\end{aligned}$$

$$\boldsymbol{\Lambda_6 CONTROLS_i} = \delta_1 SIZE_i + \delta_2 VOLUME_i + \delta_3 INDUSTRY_i + \delta_4 TIME_i$$

The interaction term captures the interaction between the HPERIOD and the other explanatory variables. Or to put it differently, it is the product of the HPERIOD with one of the respective twelve explanatory variables (PAC, TOC, OTCGC, and OH). Accordingly, this tool allows analyzing empirically whether there is a difference in interaction between the explanatory variables (H_1CGE-H_{11}CGE, $H_{AT}12$, and H_U13, except H_4CGE) and announcement effect depending on whether the partial acquirer has a long holding period. This means that in M5 there are twelve INTVAR terms, for each explanatory variable except the HPERIOD itself. If the holding period is associated with the intention to enhance corporate governance, the interaction terms between HPERIOD and corporate governance variables should be significant whereby the interaction terms with the coexisting hypotheses should be insignificant. The key idea is that a long holding period is an indication that the large shareholder is interested in enhancing the corporate governance system in place in the target company. At the same time if there is a relationship between potential corporate governance enhancements and the announcement effect, there should be an interaction effect for the corporate governance variables. This implies also that the interaction term for UV should be insignificant. Once again, as mentioned above, two models are estimated, one with (5.B) and one without (5.A) CONTROLS.[220]

In this section the econometrical models for my empirical analysis have been introduced. Based on the framework derived in Section 4.2, the models are developed in a stepwise model building approach to examine the question whether corporate governance creates value. Thereby thirteen hypotheses are used to scrutinize the determinants of announcement effect of partial stock acquisitions. In particular, five different models have been unfolded namely the PARTIAL ACQUIRER MODEL (M1), the CORPORATE GOVERNANCE MODEL (M2), the ANNOUNCEMENT EFFECT MODEL (M3), the HOLDING PERIOD MODEL (M4), and the INTERACTION MODEL (M5). Based on these models, my empirical investigation tries to find evidence for the question whether partial stock acquisitions by new institutional investors indeed use their potential to create value by enhancing the

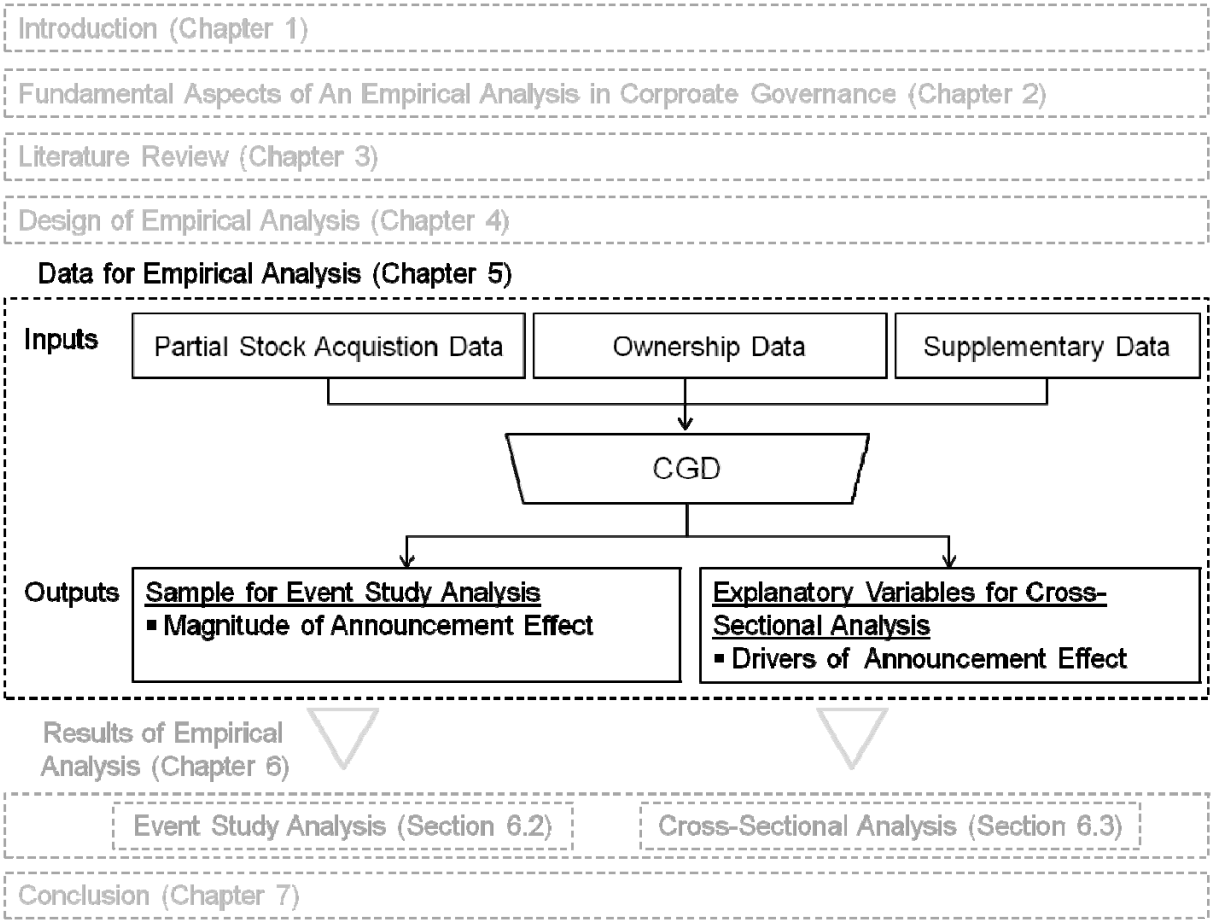
[220] For more details on interaction models difference to the additive models, see Section 4.1.2.

corporate governance system. Therefore, it is investigated whether the signs of the variables in the models presented in this section can be confirmed and are statistically significant.

5 DATA FOR EMPIRICAL ANALYSIS

The empirical analysis of my dissertation examines partial stock acquisition announcements of new institutional investors in the German stock market. A drawback to empirical studies in partial stock acquisitions is that there is no central database for partial stock acquisitions in Germany. The same applies to the explanatory variables in the cross-sectional analysis, which have to be collected independently. With this in mind, I construct a novel and independent database named *Corporate Governance Database (CGD)* for the purpose of conducting an empirical analysis on corporate governance.

Figure 5.1: Data for Empirical Analysis



Note: The data for the CGD is stored in various Excel sheets. I call the accumulation of all Excel sheets containing CGD data CCG 2010. The overall DVD where all data is stored is called Data for Empirical Analysis 2010.

Figure 5.1 shows the data input and output for the data gathering process of my empirical analysis, and I integrate the process into the whole structure of my dissertation. The data gathering process for my empirical analysis is broken down into inputs used to create the CGD, the CGD itself, and the outputs which I obtain from the CGD to collect the data for the event study (Section 6.2) and the cross-sectional analysis (Section 6.3). The goal of this chapter is to state and to describe accurately

which data sources are used (*input*) to create the CGD for my empirical analysis.[221] Then the CGD is used to derive the final datasets (*outputs*) for the empirical analysis.[222] As a consequence, this chapter is a sort of technical report. Nevertheless, it is sensible to make the inputs and outputs comprehensible and point out some inherent data problems.

The plan of this chapter is as follows: first, I investigate the different inputs that are used for the construction of the unique CGD (see Section 5.1); second, I examine the sample for the event study analysis under investigation and the examination leads to the presentation of, the cleaning and derivation procedure of the sample for the event study analysis (see Section 5.2); and third, I outline and describe the derivation of the explanatory variables for the cross-sectional analysis (see Section 5.3).

5.1 CORPORATE GOVERNANCE DATABASE

The objective is to construct a database that allows for a platform to conduct my empirical analysis. This section focuses on the inputs of the CGD and describes and discusses data sources used for the construction of my own database.

Figure 5.2 presents the structure of CGD and shows that it can be partitioned into three general types of data: partial stock acquisition data, ownership data, and supplementary data. These main groups in turn encompass different data sources which, in conjunction, allow for deriving the sample under investigation, which in turn consist of the sample for the event study analysis (see Section 5.2) and the explanatory variables for the cross-sectional analysis (see Section 5.3).

The CGD contains partial stock acquisition announcements of new institutional investors during the investigation period January 2002 and July 2008. The final event study sample is derived starting with three primary data sources namely BaFin datasets, Thomson ONE Banker, and Dealogic M&A. These three data sources are described carefully in Subsection 5.1.1. Since there is not one standard data source for empirical analysis on partial stock acquisitions, it is helpful to start with more than one data source. This helps to reduce the likelihood of missing relevant events with respect to my research question.

CGD contains information for the various corporate governance mechanisms (see Subsection 2.2.2 and Subsection 2.2.3) namely board structure, managerial ownership, ownership structure, takeovers, and competition. The consideration of all theoretically relevant corporate governance mechanisms is important with respect to the missing variable problems in empirical analysis (Börsch-Supan and Köke, 2002, p.321). For collecting data associated with the various corporate governance mechanisms, Thomson ONE Banker Ownership (T1BO), company information (e.g., financial reports), financial

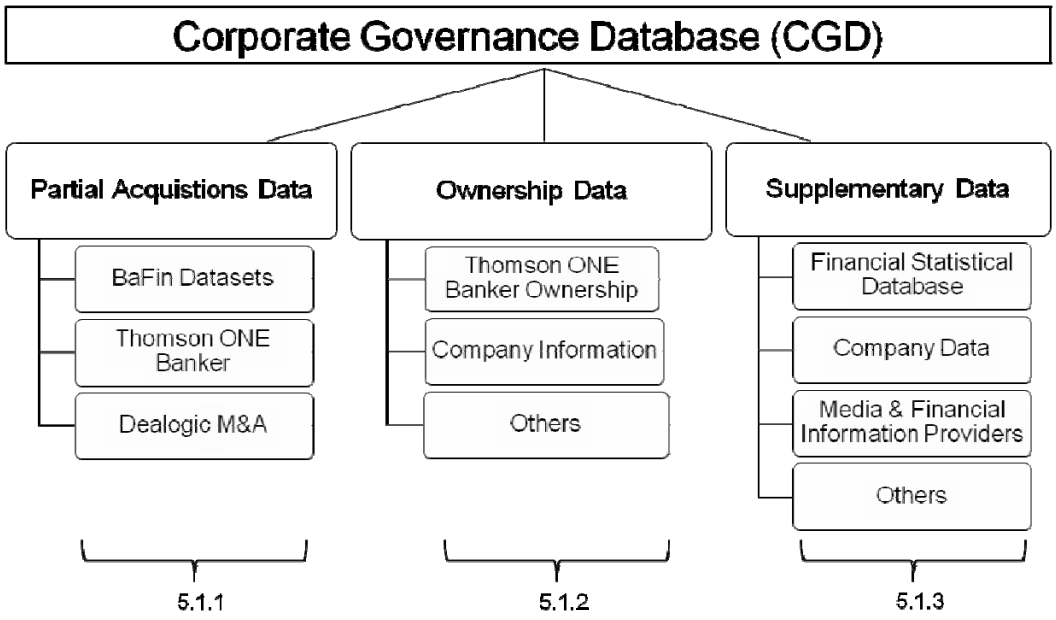
[221] Köke (2002a) also constructs an independently developed database within his dissertation on empirical studies on corporate governance which he calls The German Corporation Database (GCD).

[222] I compiled the data for my empirical analysis through access to the data sources of collaborative Research Center 649: Economic Risk at Humboldt-Universität zu Berlin, and the data sources of Universtät St. Gallen. Additionally, both BaFin and UBS provided some data.

statistical databases, data from media and financial data providers, data from the internet, and data from various other sources are used (see Subsection 5.1.2 and 5.1.3).

One of the key lessons drawn from reviewing the literature pertaining to my research question, and from conducting my own empirical analysis, is that researchers need more standardized and reliable data to enhance empirical research—thus enhancing the results and their implications for both researchers and practitioners.[223] The quality of the data used is important for the success of any empirical study and therewith for the added value it may produce. Accordingly, a critical discussion of problems and limitations of data will help to explain some questions within my study and may help future researchers to find better ways in addressing these issues. Nevertheless, economic data is typically not experimental in nature and thus is commonly not generated as a result of a controlled experiment. Economists usually take data as given and thus cannot directly control this data (Gujarati, 2006, Chapter 1).

Figure 5.2: Structure of Corporate Governance Database



I start by presenting partial stock acquisition data (5.1.1), where three main sources are used namely BaFin datasets, Thomson ONE Banker, and Dealogic M&A. I then focus on ownership data, which is mainly based on Thomson ONE Banker Ownership, company information, and other input (e.g., BaFin datasets) (5.1.2). Finally, supplementary data is shown which encompasses all data which is not subsumed within one of the previous groups. These data sources can be subsumed into financial statistical database, company data, media and financial information provider, and others (5.1.3).

[223] Hence, a word of caution might be in order: even though the CGD is constructed carefully and data is verified at every step for consistency, I do not want to be too optimistic. I can only claim my best effort as measure of consistency and the CGD will by no means be flawless and has in turn also be treated with the proper caution.

5.1.1 Partial Stock Acquisition Data

For the purpose of my empirical investigation a novel dataset of partial stock acquisition announcements, from January 2002 to July 2008, in German public corporations is constructed. While this subsection introduces the data sources, Subsections 5.2.1 to 5.2.3 describe the derivation procedure.

As mentioned earlier, one specific problem within the empirical literature on partial stock acquisitions is that there are no standard data samples to be used for econometrical studies. On the upside, this allows studies to always use unique and new datasets which may reveal new and interesting insights. This comes, however, at the costs of varying data samples which might be biased and ill chosen. Accordingly, this reduces the econometrical reliability and hence the usefulness of the results for statistical inferences. To build a standard data source would be a great solution but that is unfortunately beyond the scope of this dissertation. Hence, it is important to diligently outline the derivation procedure to make the study as intersubjectively verifiable as possible. Partial stock acquisition data in my investigation is mostly based on *three* data sources:

1) *BaFin* datasets (*BaFin-Sample* and *BaFin-Database*)
2) Thomson ONE Baker Deal Transactions (*Thomson-Sample*)
3) Dealogic M&A *(Dealogic-Sample)*

The *first* data source are the *BaFin datasets, which* comprises transactions reported to the German Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, henceforth BaFin) with respect to the disclosure standards associated with changes in the major holdings of voting rights in stock listed companies as regulated by section 21 of the *German Security Trading Act (*Wertpapierhandelsgesetz, henceforth WpHG). This standard has been implemented by the European Union's Large Holdings Directive (88/727/EEC) and is administered by the BaFin that was in turn established under the Security Trading Act in May 2002.[224]

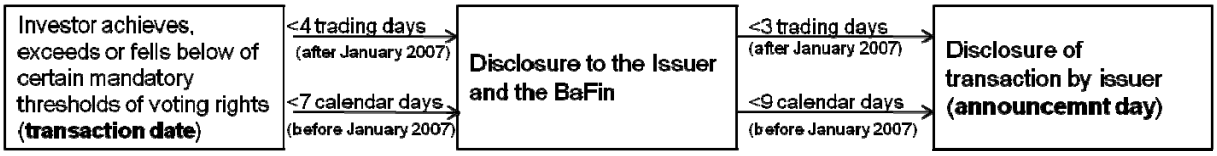
Pursuant to sections 21 et seq. WpHG (major holdings of voting rights), investors are obliged to disclose transactions in voting rights to the issuer and the BaFin if they achieve, exceed, or fall below certain mandatory thresholds of voting rights (i.e., 3%, 5%, 10%, 15%, 20%, 25%, 30%, 50%, 75%) immediately—no later than four days after the transaction. The issuers of voting rights have to disclose information according to §21 (1) sentence 1 of the WpHG immediately—no later than three trading days after receiving the information. The regulations according to sections 21 et seq. WpHG require mandatory disclosure for direct holdings as well as indirect holdings (BaFin, 2010a; Becht and Boehmer, 2003).

The thresholds and announcement period were changed following the "Transparenzrichtlinie-Umsetzungsgesetzes" (Germany's Transparency Directives Implementation Act), which came into

[224] The BaFin was established from a merger of Bundesaufsichtsamt für das Kreditwesen (BAKred) with the Bundesaufsichtsämtern für den Wertpapierhandel (BAWe) and Bundesaufsichtsamt für Versicherungswesen (BAV) (BaFin, 2010c).

force on January 20th, 2007. Previous to this amendment, the mandatory thresholds were 5%, 10%, 25%, 50% or 75%. Moreover, the announcement period to the issuer and BaFin was 7 trading days and issuers had to disclose no later than nine days. *Figure 5.3* summarizes the time window between transaction day and announcement day for the different regulation before and after the amendment of the announcement period in January 2007. Accordingly, before the amendments in 2007 the time window between transaction days was below 16 calendar days (lower arrow), and after the amendments it was below 7 trading days (upper arrow).

Figure 5.3: Time Window of Announcements Pursuant to sections 21 et seq. WpHG



Source: Based on Stadler (2010, p.111)

The BaFin compiles historical data every 14 days on the 1st and 15th of each month since August 1st, 1997. The information for this database rests exclusively on data which BaFin has taken from the information published in national newspapers for statutory stock exchange announcements (BaFin, 2010a). Because of technical problems (and other reasons), there can be gaps within the historical dataset. Additionally, the dates vary slightly depending on whether or not the 1st or the 15th of the respective month is a trading day (if this is the case, usually the next possible trading day is taken). Hence, the BaFin sheets are always rendered to a particular reference date.

The latest BaFin sheet is always publicly available on BaFin's website. The whole historical database is not publicly available, but researchers can request the historical Excel sheets for empirical investigations. For the derivation of the final event study sample, the Excel sheet rendered to the 15th of August 2008 is used as a primary data source (I name it *BaFin-Sample*). Moreover, the historical data sheets during the derivation procedure are also used. The BaFin provided historical Excel sheets ranging from January 1st, 2002 to August 15th, 2008. I created a database consisting of all entries within the sample (I term it *BaFin-Database*). This database has been used to complete and check the final dataset (see derivation process Section 5.2).

The historical dataset compiled to a specific date (i.e., *BaFin-Sample*) contains all announcements pursuant to §§21 WpHG at that date and is administered especially for statistical research analysis.[225] The raw dataset provided by the BaFin is an Excel data file and contains the following information (whereas *C* stands for criteria and subscribed *BF* stands for BaFin):

$C_{BF}1$: Company name/Registered office—Column 1-2

$C_{BF}2$: Notifying party/Domicile or registered office—*Column 3-4*

$C_{BF}3$: Holding of voting rights/single rights (direct holdings)—*Column 5-6*

[225] This data is publicly available on BaFin's website.

$C_{BF}4$: Additional counted percentage/single rights (indirect holdings)—*Column 6-7*

$C_{BF}5$: Total percentage/single rights (total holdings)—*Column 8-9*

$C_{BF}6$: Publication in Germany (official stock exchange gazette)/announcement date—*Column 10-11*

$C_{BF}7$: Publication in foreign countries (official stock exchange gazette)/Country—*Column 12-13*

$C_{BF}8$: Announcement date—*Column 14*

The basic structure of the BaFin-Sample is illustrated in Appendix III.

The historical database consisting of all BaFin sheets within the observation period (i.e., *BaFin-Database*) is almost similar to aforementioned dataset but contains two more columns, namely one within the respective reference date and the number of the BaFin file serially numbered, whereby the starting point is the first sheet in 2002 compiled to the 18thof January 2002.

The *second* data source is *Thomson ONE—Deal Module*. This is a commercial data provider and provides comprehensive and in-depth authoritative intelligence on various M&A and corporate transactions around the world. The data is accessible via a deal module and retrievable as an Excel file. For the raw dataset the following criteria are used (whereas *C* stands for criteria and subscribed *T-R* stands for Thomson ONE raw dataset criteria):

$C_{T\text{-}R}1$: All Merger & Acquisitions

$C_{T\text{-}R}2$: Target Nation: Germany

$C_{T\text{-}R}3$: Target Public Status: Public

$C_{T\text{-}R}4$: Date Announced between January 1st, 2002 and July 31st, 2008

The output is then aggregated within one Excel sheet which is organized according to the following criteria (whereas *C* stands for criteria and subscribed *T-O* stands for Thomson ONE output criteria):

$C_{T\text{-}O}1$: Date Announced/Date Effective—*Column 1-2*

$C_{T\text{-}O}2$: Target Name/Target Primary SIC Code/Target Primary SIC Code Descriptions[226]—*Column 2-4*

$C_{T\text{-}O}3$: Acquirer Name/Acquirer Primary SIC Code/Acquirer Nation—*Column 5-7*

$C_{T\text{-}O}4$: % of Shares Acquirered/% owned after transaction/Sought %—*Column 8-10*

$C_{T\text{-}O}5$: History File Event/Status—*Column 11-12*

$C_{T\text{-}O}6$: Synopsis—*Column 13*

The raw dataset consists of 1,051 transactions and I term it *Thomson-Sample*.

There is a basic structural difference between the BaFin data source and Thomson ONE Banker, which shall be briefly discussed. On the one hand, the BaFin consists of transactions that reached, exceeded, or fell short of mandatory thresholds (e.g., 3%, 5%, 10%) but does not ultimately say anything about the acquired stake—only about the stake owned after the transaction. On the other

[226] SIC Code stands for Standard Industrial Classification Codes (SIC Code, 2010).

hand, the Thomson ONE and Dealogic M&A data source consists of block transactions of at least 3% voting rights, which do not necessarily coincide with mandatory announcements; nevertheless, they might coincide. I label the difference between these data sources *block acquisitions versus threshold acquisitions*. The disparity between the data sources should be kept in mind and will be discussed later again.

The *third* data source is *Dialogic M&A Analytics.* This database provides data on wide-ranging activities of corporate transactions, M&A, and block deal transactions. The data is accessible via a deal module and retrievable as an Excel file.[227] For the raw dataset the following criteria are used (whereas *C* stands for criteria and subscribed *D-R* stands for Dealogic M&A raw data criteria):

$C_{D\text{-}R}1$: Announcement Date between January 1st, 2002 and July 31st, 2008

$C_{D\text{-}R}2$: Target Nationality (German)

$C_{D\text{-}R}3$: Target Public Status (Public)

$C_{D\text{-}R}4$: Acquired Stake % (greater than 3%)

The output is then aggregated within one Excel sheet which is organized according to the following criteria (whereas *C* stands for criteria and subscribed *D-O* stands for Dealogic M&A output data criteria):

$C_{D\text{-}O}1$: Announcement Day/Deal Status/Completion Date

$C_{D\text{-}O}2$: Deal Value Euro (m)

$C_{D\text{-}O}3$: Target/Target Primary SIC Code

$C_{D\text{-}O}4$ Divestor/Divestor SIC Code

$C_{D\text{-}O}5$: Acquirer/Acquirer SIC Code

$C_{D\text{-}O}6$: Initial Stake %/Acquired Stake %/Final Stake %

$C_{D\text{-}O}7$: Dealogic Deal Note

The raw dataset consists of 729 entries and I term it *Dealogic-Sample*.

Dealogic M&A has basically the same structure as the Thomson ONE data source. Accordingly, dialogic M&A and BaFin have the same structural differences (block acquisition versus threshold acquisition) as the Thomson ONE and BaFin.

5.1.2 Ownership Data

My goal was to construct a shareholder ownership database, which gives information across time and companies with respect to the ownership structure of German public corporations. Ownership structure has different dimensions (see Subsection 2.3.3) such as concentration and type of ownership. Par-

[227] You can set your own deal report and include the criteria you are most interested in.

ticularly, *two* datasets of ownership data are constructed namely the *Ownership Matrix* and the *Managerial Ownership Dataset,* which I use as inputs for the explanatory variables in my cross-sectional analysis (see Subsection 5.3.2). In the following section, the construction of the Ownership Matrix and Managerial Ownership Dataset, and its primary sources, is outlined.

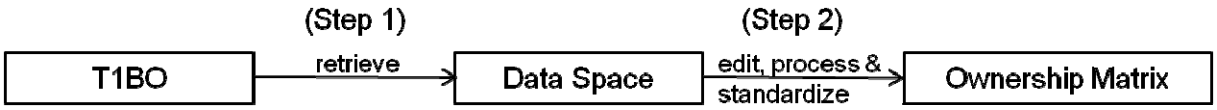
Three main *sources* are used to obtain information for the *Ownership Matrix* and the *Managerial Ownership Dataset*:

1) Thomson ONE Investment Banking Ownership (henceforth *T1BO*)
2) Annual Report
3) Others

To begin with, the *Ownership Matrix* is constructed. The primary data source for this dataset is T1BO which is a module of Thomson ONE Banker that provides detailed and up-to-date information on ownership structure across global share ownership structure back to 1997. The share ownership data is updated quarterly (March 31st, June 30th, September 30th, and December 31st of the respective year) and contains various information, e.g., regarding the investor profile and position.[228] T1BO is updated by using various filling types. Accordingly, this data source has several important advantages: *first*, the ownership data is frequently updated; *second*, various additional information regarding investors is available; *third*, the retrieving process of the data is relatively easy and standardized which has the great advantage of almost eliminating retrieving errors; and, *fourth*, because of the Excel format of the retrieved data files, the data handling process is simplified and reduces possible errors.

Figure 5.4 shows the derivation procedure of the Ownership Matrix. A *2-step* procedure is used to derive the Ownership Matrix. At first, the information with respect to the firms' ownership structures is retrieved and stored within the data space *(Step 1)*. Then, the information in the data space is edited, processed, and standardized to eventually compile the Ownership Matrix.

Figure 5.4: Derivation Process of Ownership Matrix



To compile the data space *(Step 1),* the information about the ownership structure is retrieved with respect to the investor name, the investor type, and the percentage of ownership for all corporations of interest; after retrieval, the data is stored in these sheets in separate Excel files. I label this accumulation (all Excel files) of information regarding the firms' ownership structure data space (*Step 1*). Appendix IV contains a sample sheet of a T1BO sheet which represents a single Excel file with ownership information in the data space.

[228] The specific report settings can be set manually and the data can be retrieved as an excel document. However, the download option into excel is limited to twelve quarters per download.

To create the Ownership Matrix *(Step 2)* the retrieved data is edited, processed, and standardized within a single Excel file. The Ownership Matrix contains all information with respect to the shareholdings, names of the ten largest shareholders, and the type of shareholder in the company of interest. *Table 5.1* displays the structure of the ownership matrix by using 4SC as an illustrative example.

Table 5.1: Basic Structure of Ownership Matrix

Company:4SC	31.12.2007 ...	30.09.2007 ..	30.06.2007 ...	31.03.2007 ...
LSH1	31.94%	30.20%	...	
LSH2	15.52%	15.52%		
...				
LSH10				
LSH1.NAME	Santo Holding	Santo Holding	...	
LSH2.NAME	Weiblen (Martin)	Weiblen (Martin)		
.....				
LSH10.NAME		...		
LSH1.TYPE	Corporation	Corporation		
LSH2.TYPE	Individual Investor	Individual Investor		
.....				
LSH10.TYPE	...	...		

LSH:= large shareholder; Extract from Ownership Matrix based on own calculations; see CGD 2010 Excel files.

The data from T1BO was checked for consistency and reliability. If some obvious flaws were indicated (e.g., ownership structure larger than 100%), it was corrected manually by using alternative sources such as company's annual report, WGZW, and the BaFin-Database (see Subsection 5.1.1).

To construct the *Managerial Ownership Dataset* the company's annual report in the fiscal year preceding the announcement of the transaction is used as a primary data source to obtain the data. Where I did not find information within the annual reports, I used Commerzbank's "Wer Gehört zu Wem" (henceforth WGZW) as alternative data source. One crucial problem with collecting the managerial ownership data is that it is not mandatory to publish information on managerial ownership in the annual report. According to 6.6 of the Deutsche Corporate Governance Kodex *(DCGK)*[229] the companies *should* make notes in the consolidated financial statement on the managerial ownership separately for management and supervisory board if the shareholdings exceed 1% directly or indirectly. This is, however, not obligatory and hence the reporting is likely to be biased. It is sensible to assume managerial ownership if the shareholdings exceed 1% (otherwise set to zero) to standardize the sample because of possible differences in reporting.

Table 5.2 exemplifies the basic structure of the Managerial Ownership dataset. The annual report preceding and following the announcement of the partial stock acquisition is used to extract data on total managerial board, management board, and supervisory board shareholdings.

[229] DCGK is the abbreviation for Deutsche Corporate Governance Kodex.

Table 5.2: Basic Structure of Managerial Ownership Dataset

Target	Source	MB-Ownership(1)	SB-Ownership(2)	TM-Ownership(3)
4SC	GB2006	10.5%	0%	10.5%
....				
Klassik Radio	GB 2004/2005	66.75%	2.36%	69.11%

(1) MB-Ownership:= Management Board Ownership, (2). SB-Ownership:= Supervisory Board Ownership, (3) TM-Ownership:= Total Managerial Board-Ownership; Extract from Managerial Ownership Dataset based on own calculations, see CGD 2010.

For constructing both the Ownership Matrix and the Managerial Ownership as a last data source, other data is used. These *supplementary data* are used not only to cross-check reliability and validity but also to complete some missing data. Especially two supplementary data sources are used; that is, the BaFin-Database (see Subsection 5.1.1) and the WGZW. WGZW is another source for ownership information on German companies. Access to this database is possible through the "Wer gehört zu Wem-Analyse-CD," an online book, and through an online database. The database contains ownership and participation information on about 12,000 companies located in Germany with at least nominal capital of €0.5 million. The database is updated twice a year (WGZW, 2010). Unfortunately, the download settings are inconvenient and cumbersome, and it is not possible to download more than one company and period at the same time. Hence, one has to gather the information manually and for each event and moment in time separately.

At this point it might be sensible to point out that there are some other alternative sources to retrieve ownership data for German corporations. The most common data sources in the academic literature are T1BO, Hoppenstedt Aktienführer, WGZW, BaFin, Börsen-Zeitung, and the company's annual report.

Hoppenstedt could be alternatively used to T1BO as a source to construct the Ownership Matrix. It provides different products that contain information with respect to ownership structure such as Hoppenstedt Aktienführer (CD-edition), Hoppenstedt Aktienführer (hard copy edition), and the Konzernstruktur-Datenbank (Internet access) (Hoppenstedt, 2010). The Konzernstruktur-Datenbank is an extensive data source that provides direct and indirect shareholdings and participation in other companies and encompasses up to 300,000 companies, people, and pubic bodies (Konzernstruktur-Datenbank, 2010). Konzernstruktur-Datenbank updates its database continuously by using all publicly disclosed documents and direct contacts to the covered companies. Unfortunately, the online database has a crucial drawback for empirical research, as it does not contain historical information but rather offers current information on the covered companies. Hoppenstedt Aktienführer releases a hard cover and CD-edition every year. Accordingly, one could use the year book and the CD-edition to retrieve the needed data manually every year (Aktienführer, 2010).[230] Nevertheless, the main reasons against Hoppenstedt are that the online source (Konzernstruktur-Datenbank) does not contain historical data, hence the process of retrieving data has to be done manually and the CD and hard cover editions are less frequently updated in comparison to the T1BO. Accordingly, with respect to the goal to construct

[230] Rapp et al. (2008) give further information with respect to Hoppenstedt Aktienführer.

an ownership database, the T1BO data source is more suitable than the Hoppenstedt data source especially with regard to the following criteria: time, accuracy, measurement error susceptibility, and data handling.

BaFin-Database consists of all ownership changes that exceed or fall below a certain legal threshold (see Subsection 5.1.1). The BaFin data is updated bi-monthly and thus more frequently than the T1BO; however, it is a raw database, which is only structured rudimentarily. Hence, BaFin-Database, which is constructed for my dissertation, has the potential to be used as a primary ownership source but only with substantial costs in terms of time. Additionally, bringing structure into the BaFin-Database also increases the probability of decreasing reliability. Hence, I decided to use T1BO.

The "Börsen-Zeitung" (Boersen-Zeitung, 2010) is another alternative source for ownership data but is less widely used in the literature. One explanation for the rare use of this data source is that it only provides current—and no historical—information. The company's annual report usually also contains information with respect to ownership data of investors. However, for the Ownership Matrix, T1BO provides more reliable and more frequently updated data.

For deriving the Managerial Ownership Dataset I decided to use the company's annual report in the fiscal year preceding the announcement of the transaction. The annual report is used rather than one of the alternative data sources because this is the original data source provided by the company itself and gives more detailed information than the other ownership data providers. The major shortcoming of the alternative sources is that they usually only contain information on board shareholdings if the large shareholders hold at least more than 5%. The use of the annual reports allows me to determine the board ownership data more accurately because annual reports usually provide managerial shareholdings if executives hold more than 1% of the company's shares and distinguish between executive and supervisory board shareholdings.[231]

5.1.3 Supplementary Data

This section focuses on supplementary data of the CGD. This is a sort of residual data group, which contains inputs which cannot be subsumed in the previous two groups. This data was either used as supplementary data sources in the derivation or performance of the event study or for the derivation of the explanatory variables for the cross-sectional analysis.

The supplementary data can be summarized into four types of data sources namely:

1) Financial Statistical Database
2) Company Data
3) Media & Financial Information Providers
4) Others

[231] For example, Deutsche Corporate Governance Kodex number 6.6 recommends that corporations shall provide information within the notes of the consolidated accounts associated with managerial ownership including options if the shareholdings exceed 1%.

The *first* group consists of financial statistical databases and comprises Datastream and Thomson ONE Banker. These sources provide for instance market data such as stock returns, indices returns, market value, and trading volume. This data is needed for the event study (e.g., stock and indices returns) and cross-sectional analysis (e.g., market value, trading volume). Moreover, this source also contains a company's financial data. Information for event study and cross-sectional analysis is provided by different sources. The financial information such as balance sheet, profit-loss statement, cash flow statement, and key financial ratios is provided by Thomson ONE Banker.

The *second* group the company data consists of documents published by the company or information disclosed on the company's website. This data comprises annual reports and annual documents according to section 10 of the German Securities Prospectus Act (Wertpapierprospektgesetz, WpPG), information from the website of the company (e.g., investor relation, company's profile), and ad hoc news on the company's website.

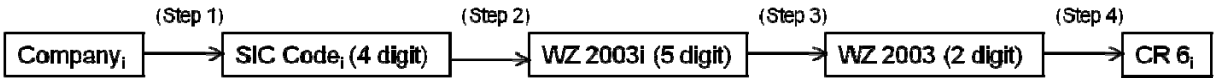
The *third* group consists of data from media and financial information providers, and the Internet. The financial information providers that I use are LexisNexis and Factiva. Moreover, sources such as Presseportal, Handelsblatt, Aktiencheck, and DGAP are deployed as media information providers or internet sources. On these websites, ad hoc information and other information regarding the transaction or ownership structure are published.

The *fourth* group others, which is a residual group, comprises data on the degree of product market competition, ad-hoc messages, data with respect the investor's type, and data associated with the Securities Acquisition and Takeover Act (Wertpapiererwerbs- und Übernahmegesetz*,* henceforce *WpÜG*)

I gathered data on the degree of product market competition from the biennial report of the German Federal Antitrust Commission as reported in the 17th survey of the Monopolkommission 2006/2007 (Monopolkommission, 2008). To classify the concentration ratios from Monopolkommission 2006/2007 to each target company, a four-step procedure is applied as depicted in *Figure 5.5*. This procedure is necessary because the concentration ratios are based on the Wirtschaftszweig (WZ) 2003 classification (German classification of Economic Activities) of the Statistische Bundesamt (Federal Statistical Office of Germany)[232] and the industry classification of Datastream, which is my main data source, is based on SIC codes. Hence, I had to match SIC codes with WZ 2003 as reported in the report of the Monopolkommission 2006/2007. Therefore, convergence tables are used to translate SIC codes into WZ 2003 codes (step 2).[233] In the end I only used the first two digits of the WZ to classify each company to an industry and thus to the concentration measures.

[232] For further information on WZ 2003 and Federal Statistical Office of Germany see Statistische Bundesamt Deutschland (2010).
[233] For correspondence tables see for instance U.S. Census Bureau (2010), Statistische Bundesamt Deutschland (2010) and United Nations Statistic Division (2010).

Figure 5.5: Convergence of Industry Classifications



Note: (Step 1) Datastream, (Step 2) Convergence Tables; (Step 3) converge 5 digit into 2 digit codes, (Step 4) extract data from Monopolkommission (2008).

It should be mentioned that there are problems when assigning the competition measures to each target company which may bias the classification (Januszewski et al., 2002). There are particularly two reasons worth pointing out: *first*, there are classification errors in large companies because of various market segments; and, *second*, industry classifications used by Monopolkommission 2006/2007 (WZ 2003) differ from classifications used by Datastream (SIC Codes). Therefore, convergence tables had been used, which may lead to inaccuracy.[234]

I gained ad-hoc messages from Deutsche Gesellschaft für Ad-hoc-Publizität (DGAP) which is an electronic information system where issuers can undertake ad-hoc messages officially authorized by the stock exchanges in Germany. This data is publicly available (DGAP, 2010). Furthermore, if I was not able to find data with DGAP, I accessed a company's website, searched for annual reports, and used the Internet to search for ad-hoc news.

Information regarding the investor's type is obtained from four sources namely Eurekahedge, Thomson ONE Private Equity, Thomson ONE Ownership, and other sources (i.e., LexisNexis, Factiva, and investor's website). Eurekahedge is a commercial data provider and covers information on the global alternative fund industry. Its database includes a list of 23,075 funds (e.g., including 9,056 hedge funds and funds of hedge funds, and 7,461 private equity funds) across all strategies and asset classes (Eurekahedge, 2010). Thomson ONE private Equity is a module of Thomson ONE offering detailed and global coverage of more than 20,000 venture, buyout, and mezzanine funds (Thomson-ONE-Private-Equity-Module, 2010).

I retrieve data with respect to published offer documents from BaFin datasets on section 14 of the *WpÜG,* which are publicly available on the BaFin website. The Act distinguishes between takeover bids, mandatory bids, and simple acquisition offers. Generally, investors have to submit mandatory bids (pursuant to sections 35 et seq. WpÜG) to the target firm if they exceed the threshold of 30% of voting rights without having made a takeover bid in advance (BaFin, 2010b).

5.2 CONSTRUCTION OF EVENT STUDY SAMPLE

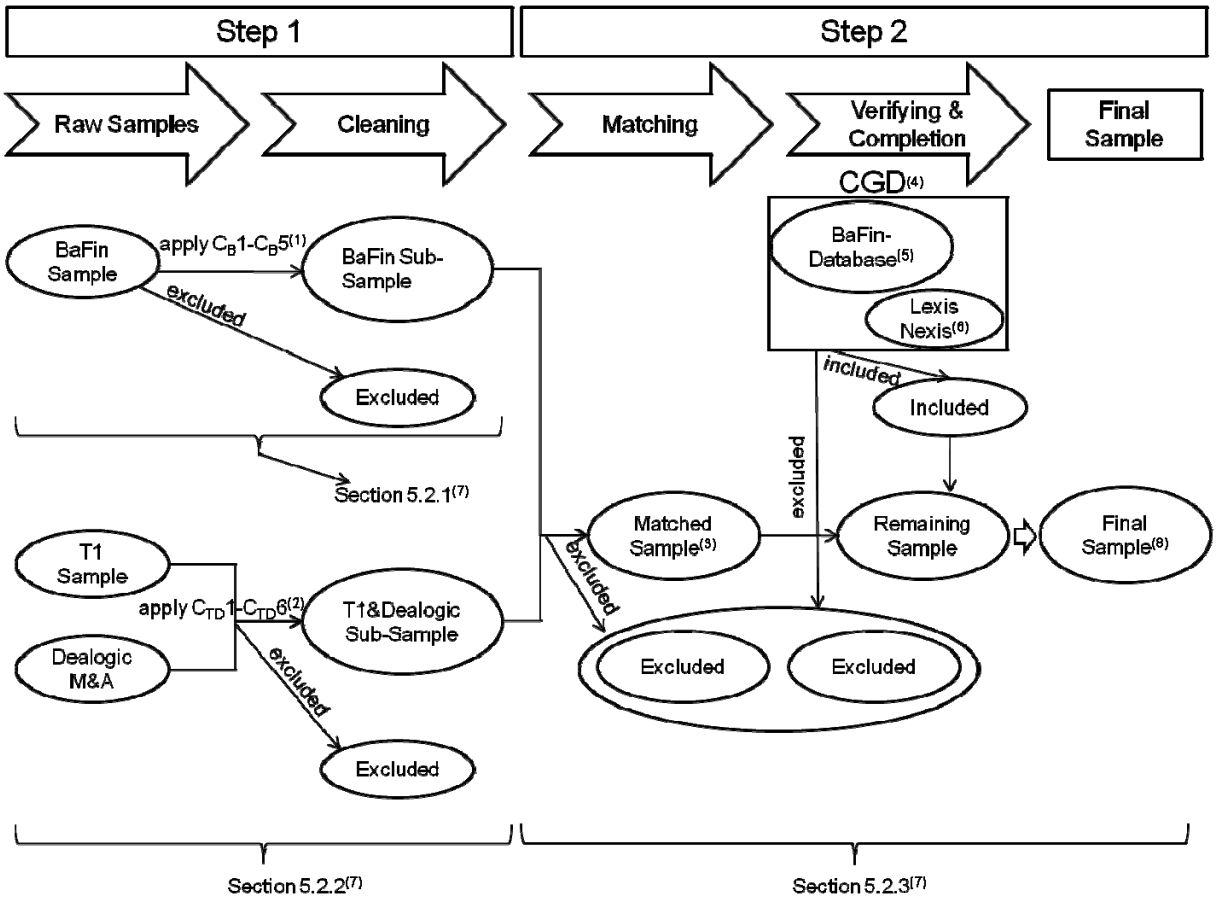
This section outlines the derivation procedure of the sample used for conducting an event study analysis on partial stock acquisition announcements by new institutional investors in the German stock market from January 2002 to July 2008. One crucial drawback of studies on partial stock acquisitions in the German stock market, as already discussed in Subsection 5.1.1, is that there is no standard data

[234] For a discussion of similar problems (Januszewski et al., 2002).

sample for the purpose of conducting an econometrical analysis. Accordingly, the three most reliable data sources—BaFin-Sample, Thomson-Sample, and Dealogic-Sample—are used to derive my data sample. Based on these three primary data samples, my data collection comprises a *two-step procedure* as depicted in *Figure 5.6*.

As a first step, starting with the three primary raw samples (e.g., BaFin, Thomson ONE, and Dealogic M&A raw sample) I derive two subsamples, i.e., BaFin subsample (see Subsection 5.2.1) and Thomson-Dealogic subsample (see Subsection 5.2.2). During the cleaning and derivation procedure, however, the raw samples are consistently checked, processed, and verified by using supplementary data (see Subsection 5.1.3) such as target companies' information (annual report, company's webpage, ad-hoc announcements) and electronic information provider (Factiva, LexisNexis, Ad-hoc news provider). Because the BaFin-Sample is structurally different in comparison to the Thomson-Sample and the Dealogic-Sample, I decided to separate the data collection process in the first step into two data collection procedures. Accordingly, at the end of step one I have two *subsamples.*

Figure 5.6: Overview of Derivation and Cleaning Procedure of Event Study and Cross-Sectional Samples



(1) **Five Selection criteria are applied**: C_B1. Transaction has to lay within the investigation period, C_B2. Transaction has to be a partial acqusition (3-30%), C_B3. Acquirer has to be identified as a new institutional investor, C_B4. Transaction has to be relevant and meaningful with regard to the question under investigation, C_B5: Full stock return data has to be available; transactions that do not meet these criteras are excluded; (2) **Six selection criteria are applied**: $C_{TD}1$. Transaction must be completed, $C_{TD}2$. Acquirer is not allowed to be a financial institution, $C_{TD}3$. Transaction has to be a partial acquisition, $C_{TD}4$. Acquirer has to be a new institutional investor, $C_{TD}5$. All relevant information regarding the transaction has to be given, $C_{TD}6$. Complete return data has to be available; transactions that do not meet these criteras are excluded; (3) **Matched Sample**: in this step the doubles are excluded; 4) **CGD (Corporate Governance Database)**: this is the database used and constructed for my dissertation and includes various sources as thoroughly described in 5.1. CGD; (5) **BaFin-Database**: is used to complete and check the previous chosen transaction and specifically search for previosu transaction where other thresholds are exceeded; (6) **LexisNexis**: is a news provider database; (7) For detailed information regarding the different steps the reader is refered to the respective section 5.2.1 for BaFin Subsample derivation, 5.2.2 for Thomson ONE and Dealogic Subsample derivation and 5.2.3 for the matching, verifying, and completion procedure.

In the *second step,* the two subsamples (i.e., BaFin subsample, Thomson-Dealogic subsample) are *matched, verified, and completed*. To start with, two subsamples are matched to compile a matched sample which does not consist of any identical transaction. Then, the matched sample is verified and completed. During this step transactions are included, excluded, and processed. *Verification* is sensible and important because the meaningfulness of the transaction regarding the research question and reliability especially of the announcement day is of outmost importance for any event study. For the verification, various sources from CGD were used but two sources were primary data sources at this stage namely the BaFin-Database and LexisNexis. At this stage transactions are excluded or processed (e.g., announcement day, deal specific). *Completion* of the matched sample is sensible and important. This is because the BaFin datasets are always compiled to a specific reference data and thus do not include historical transactions, because the BaFin datasets always include the most recent

announcement regarding substantial voting rights only (see Subsection 5.1.1). Additionally, the Thomson-Sample and Dealogic-Sample do not perfectly compensate this shortcoming of the BaFin datasets. Indeed, these two datasets include historical transactions, which are not in the BaFin-Sample and thus are complementary in nature. However, there are still various interesting and important transactions missing which can be included into the sample by using the BaFin-Database which is compiled for my dissertation. This database contains almost all BaFin datasets in the observation period and thus gives a very comprehensive overview of mandatory block transactions. Because this database is too large, complex, and unstructured, it is sensible to use it complementarily rather than as primary data source. Additionally, LexisNexis is used to verify the announcement data of each transaction and thereby some additional transaction announcements were found, which actually had to be included in the BaFin-Database. When this is not the case, these transactions are included. By processing the matched sample thoroughly, and verifying and completing the sample, the remaining sample comes out, which depicts the final event study sample for my investigation of partial stock acquisitions in the German stock market (for details see *section 5.2.3*).

The remainder will present and discuss the data collection procedure starting with the three primary samples and ending with the final sample for the event study analysis. To begin with, the derivation of BaFin subsample (see Subsection 5.2.1) is described before the derivation of the Thomson-Dealogic subsample (see Subsection 5.2.2) is presented. Afterwards, the final sample is derived and the matching, verifying, and completing procedure is outlined (see Subsection 5.2.3).

5.2.1 Derivation of BaFin Sub-Sample

In compliance with sections 21 et seq. WpHG any investor is obliged to disclose his shareholding on a German public listed company if its voting rights reach, exceed, or fall below specific thresholds. The BaFin restores all transactions announced in accordance with §21 WpHG in a specific database, which is compiled bimonthly and is available upon request for research purposes (see more in *Subsection 5.1.1*). I use a raw dataset provided by the BaFin compiled as of August 15th, 2008. It consists of transactions between April 3rd, 1995 and August 6th, 2008 and includes initially a complete list of 5,068 transaction announcements. The dataset, however, was cleaned and processed because the focus is on a specific question namely the impact on the share price following the announcement of a partial stock acquisition by a new institutional investor. The cleaning and processing procedure is discussed below and summarized in *Table 5.3*.

To be included in the *BaFin subsample,* the transaction has to fulfill the following sample selection criteria cumulatively (henceforth I use the abbreviation C_BI, whereby *C* stands for criterion, *subscript B* for BaFin-Sample selection process and *capital I* indicates the i_{th} criteria in the derivation process whereas *i* runs from *1* to *5*).

(C_B1) transaction has to lay within the investigation period under investigation

(C_B2) it has to be a partial acquisition (%-of shareholdings no more than 30 % post transaction)

(C_B3) acquirer has to be identified as a new institutional investor (i.e., private equity firm, hedge fund)

(C_B4) transaction has to be relevant and meaningful to the specific question under investigation (e.g., no sales transactions, no confusing transaction)

(C_B5) full stock return data for estimation/event period has to be available

In a first step *criterion C_B1* makes sure that all transactions lay within the investigation period, running from January 1st, 2002 to July 30th, 2008. Hence, 85 transactions are excluded.

In a second step *criterion C_B2* ensures that all transactions are partial stock acquisitions. There is no standard definition regarding partial stock acquisitions, and literature uses different cut-off points, e.g., 50% or 90%[235] to differentiate partial from full acquisitions (Park et al., 2008, p.533). The threshold of 30% is used because Germany requires investors to make a mandatory bid pursuant to sections 35 et seq. WpÜG, when exceeding this threshold. The threshold of 30% is chosen because shareholdings of more than 30% usually imply de facto control in the target firm according to §29 (2) WpÜG. Accordingly, my criterion tries to ensure that the investor is a large shareholder and thus hold significant shareholding but does not have (de facto) full control. Therewith, it is attempted to make certain that partial control rather than de facto full control acquisitions are investigated. Accordingly, 1,545 transactions do not meet this criterion and are excluded.

In applying *criterion C_B3, I exclude* all acquirers which are non-new institutional investors (hedge funds or private equity). For this purpose all acquires had to be identified to make sure whether a new institutional investor was entering the firm. The problem is that it is less clear whether an investor is a hedge fund or a private equity firm because no clear definition exists, and acquirers have no identifiers which makes it impossible to use a standard classification. The problem is not to distinguish between financial and non-financial institutions but rather to differentiate between classical institutional investors and new institutional investors. Therefore, four data sources are used to define the investor's type in a logical and comprehensive way: Eurekahedge, Thomson One Private Equity database, Thomson One Ownership data, and various other data sources such as LexisNexis, Factiva, and the company's website (for a detailed description see Subsection 5.1.3). This procedure is, of course, a second-best solution to the problem. Nonetheless, given that no clear classification exists, it seems to be a sensible one.

I identified hedge fund and private equity firms by going through all notifying parties in the BaFin-Sample in a case-by-case approach by using the definition of the respective data source. Thereby, the first three databases were used as *primary data* sources to classify the acquirers. The remaining sources were used to identify the investor if no information was included in the primary databases or if

[235] Amoako-Adu and Smith (1993, pp.1097-1098) for instance define partial acquisition as transactions where the investor acquirers less than full control of the target firm, that is to say less than 90% of the target company's voting rights. Choi (1991) on the other hand uses 50% as the cut-off point for partial stock acquisition (Park et al., 2008, p.533).

the information was not clear enough. After deleting all non-new institutional investors, 353 events remain in the BaFin-Sample and 3,085 are excluded accordingly.

Table 5.3: Derivation of BaFin-Sample

(C_Bi)	Description	Deletion	Remaining
	Raw Data		5,068
C_B1	Outside investigation period 2002-2008	85	4,983
C_B2	No Partial Block Acquisition (%-of stake acquired > 30%)	1,545	3,438
C_B3	Acquirer no institutional investor (HF & PE)	3,085	353
C_B4	Irrelevant transactions (e.g., sales, unidentified, uncertain, foreign company)	147	206
C_B5	Missing stock data	29	177
	BaFin Subsample		177

C_Bi:=criterion i whereas i runs from 1 to 5; HF:= hedge funds; PE:= private equity firms.

Applying *Criterion* C_B4 ensures that the transactions in the final sample are relevant and meaningful regarding the specific question under investigation. The BaFin-Sample provides only little information regarding the transaction and is structured only sparsely, which makes it necessary to make an extensive news run to gain additional information. For instance, the BaFin-Sample does not contain any information on whether the transaction is a buy or sale transaction, which makes it necessary to identify whether a transaction is either a buy or sale. Additionally, some transaction announcements simply revise previous incorrect announcements only; yet, these announcements are not based on a new transaction. Furthermore, sometimes the difference between trading day and announcement day (henceforth called delta) is sometimes very large, which is likely to reduce the validity of this transaction and is practically impossible because the law requires reporting immediately and no later than sixteen trading days (according to the law previous to January 2007, notifying party 7 trading days, issuer 9 trading days). Hence, it is necessary to do the tedious news run for each transaction individually. To gather the missing information, I tried to find the original ad-hoc news belonging to the announcement included in the BaFin-Sample because these announcements state whether the threshold was exceeded or fell short and give other useful information, e.g., trading day. If this news was unavailable, I tried to find alternative adequate information regarding the transaction, e.g., information in annual report or website of the respective target company.

Various sources were used to get the needed information: the website of the DGAP, the company's website and annual report, LexisNexis, and Factiva (see Subsection 5.1.3 for description). The DGAP website stores ad hoc news of German companies and covers many announcements. Unfortunately, DGAP is helpful only for the last two years because earlier ad hoc news are available only very rarely. As an alternative source I used a professional news data provider namely LexisNexis and Factiva to find the ad-hoc announcements or other information with respect to the transaction. If it was not possible to obtain adequate information of the transaction, I used the investor relation part of the company's website (investor relation section) or the annual report to get additional information. If this news were not published directly on the website it is possible to go through the company's annual report of the relevant year to find information with respect to the transaction.

After carefully identifying almost all transactions, the irrelevant and less meaningful transactions were deleted. In connection with *criterion C_B4* the following *subcriteria* (henceforth abbreviated with *S-C_Bi*, whereby *S-C* stands for subcriteria and the rest is used as previously) lead to an exclusion of an event:

S-C_B1: sale announcements

S-C_B2: unclear transaction (e.g., if the transaction is a correction announcements and has a large delta)

S-C_B3: missing information with respect to the transaction (e.g., kind of transaction, WpHG)

S-C_B4: deceptive transactions (buy/sale announcements in a short period of time)

S-C_B5: the acquirer and target is the same company (directors' dealings)

S-C_B6: target is a foreign company according to ISIN

S-C_B7: similar transaction was already announced some days earlier.

After application of *criterion (4),* 205 transactions remain in the sample.

Applying *criterion (5)* deletes all transactions with incomplete return data for the event study analysis. For 29 transactions no stock data is available. Accordingly, the final BaFin subsample consists of 176 transactions.

To summarize, this section has described the derivation of the subsample by using BaFin-Sample at the reference date August 15th, 2008. Five different sample selection criteria are used to process and clean the used sample as accurately as possible. The next section will discuss the derivation of the other subsample by using alternative data sources.

5.2.2 Derivation of Thomson ONE and Dealogic M&A Sub-Sample

The professional data providers *Dealogic M&A Analytics* and *Thomson ONE—Deals* cover a broad range of merger and acquisition transactions around the world. There is a difference between these data sources and the BaFin datasets as mentioned earlier (see Subsection 5.1.1) labeled as block acquisitions versus threshold acquisitions. This disparity should be kept in mind but will be discussed later (5.*2.4*).

At the beginning of the data derivation procedure, I started by retrieving suitable datasets from both the Thomson ONE and Dealogic database, as discussed in 5.1.1. In both cases the *request criteria* were *(1)* M&A transaction announcements from January 1st, 2002 to July 30th, 2008, whereby *(2)* the target company is a German public corporation and *(3)* the stake acquired amounted to at least to 3%. Accordingly, the raw dataset generated through this request contains 1,051 transactions for the *Thomson ONE* dataset and 729 for the *Dealogic M&A* dataset. These datasets, however, have to be processed because they include transactions which are irrelevant to the questions under investigation. *Table 5.4* and *Table 5.5* present the different steps within the cleaning procedure.

To be included in the *final sample* a transaction has to meet the following *sample selection criteria* whereby *criteria (1-3)* are applied to the Thomson-Sample and Dealogic-Sample separately before the two samples are merged and the remaining *criteria (4-6)* are applied to the merged sample (i.e., Thomson-Dealogic-Sample) afterwards. (Henceforth I use the abbreviation $C_{TD}i$, whereby *C* stands for criterion, *subscript TD* for Thomason-Dealogic-Sample selection process and *capital I* indicates the i_{th} criteria in the derivation process).

$C_{TD}1$: the transactions must be completed

$C_{TD}2$: the acquirer is not allowed to be a non-financial company

$C_{TD}3$: transaction has to be a partial acquisition.

After this step the two samples (*Thomson-Sample* and *Dealogic-Sample*) are merged and two further criteria are applied:

$C_{TD}4$: requires that only new institutional investors (private equity and hedge fund) remain in the sample

$C_{TD}5$: all information with respect the transaction has to be given (e.g., stake acquired)

$C_{TD}6$: complete return data has to be available for the estimation as well as event period

Table 5.4: Cleaning of Thomson ONE and Dealogic M&A Sub-Sample Separately

		Thomson-Sample		Dealogic-Sample	
($C_{TD}i$)	Description	Excluded	Remaining	Excluded	Remaining
	Raw Data		1,051		729
($C_{TD}1$)	Non-complete	442	609	43	686
($C_{TD}2$)	Non-Financial	296	313	310	376
($C_{TD}3$)	Non-Partial Acquisitions (x>30%)	108	205	164	212
		Thomson subsample	**205**	Dealogic subsample	**212**

$C_{TD}i$:= criterion *i* whereas *i* runs from 1 to 3.

Criterion $C_{TD}1$ ensures that all transactions which do not have the status "complete" are deleted because the transactions were never fully realized or had not been completed to date. The Dealogic M&A dataset only distinguishes between the status "completed" and "pending" whereas the Thomson ONE dataset includes transactions with the statuses "pending," "rumor," "intended," "search buyer," "search buyer withdrawn," and "completed". However, only transactions which have the status "completed" are included in the sample and the others are excluded. After removing non-complete transactions, the Thomson-Sample reduces to 609 and the Dealogic-Sample reduces to 686 transactions. It is obvious that in the former data source, more transactions are deleted, which means that Thomson One deal analysis includes more non-completed transactions.

In connection with *criterion* $C_{TD}2$ all acquirers which are non-financial are deleted. Both databases classify the acquirers as financial or non-financial according to the SIC Code. After deleting all non-financial acquirers in the Thomson-Sample and Dealogic-Sample 313 and 376 transactions remain, respectively.

Applying *criterion* $C_{TD}3$ ensures that all transactions are partial stock acquisitions. Identically to the derivation of the BaFin-Sample the 30% threshold is used as the cut-off point (see Subsection *5.2.1*). Following this step the Thomson-Sample amounted to 205 and the Dealogic-Sample amounted to 212 transactions (see *Table 5.4*).

In a *next step*, I merge the two databases to gain the Thomson-Dealogic subsample. Therefore, *criterion* $C_{TD}4$ makes certain that only private equity and hedge funds remain in the sample and the non-new institutional investors are removed. Thereby I encountered the same difficulties as described in Subsections *5.2.1* namely that there is no proper definition of private equity firms and hedge. The same approach is used to complete this step as described in *Subsections 5.2.1* (criterion 4) namely using four data source to comprehensibly identify investors. This procedure reduces the sample size to 80 events.

Table 5.5: Matching of Thomson ONE and Dealogic M&A Sub-Sample

		Thomson ONE and Dealogic M&A	
($C_{TD}i$)	Description	Excluded	Remaining
	Thomson ONE & Dealogic		417
($C_{TD}4$)	Merged & deleted non-HF & non-PE firms	337	80
($C_{TD}5$)	Missing info according to transaction	3	77
($C_{TD}6$)	Missing stock data	5	72
	Thomson-Dealogic subsample		72

$C_{TD}i$:= criterion i whereas i runs from 4 to 6

According to *criterion* $C_{TD}5$ all transactions with missing information are deleted. For three events no information could be found regarding the size of the acquired stake and thus they were deleted. Accordingly, the sample is reduced to 77 events.

Using *criterion* $C_{TD}6$ ensures that for the remaining events the complete return data for estimation as well as event period are available. For five events no stock data is available to conduct the event study. Hence, the final Thomson-Dealogic subsample amounts to 72 events (see *Table 5.5*).

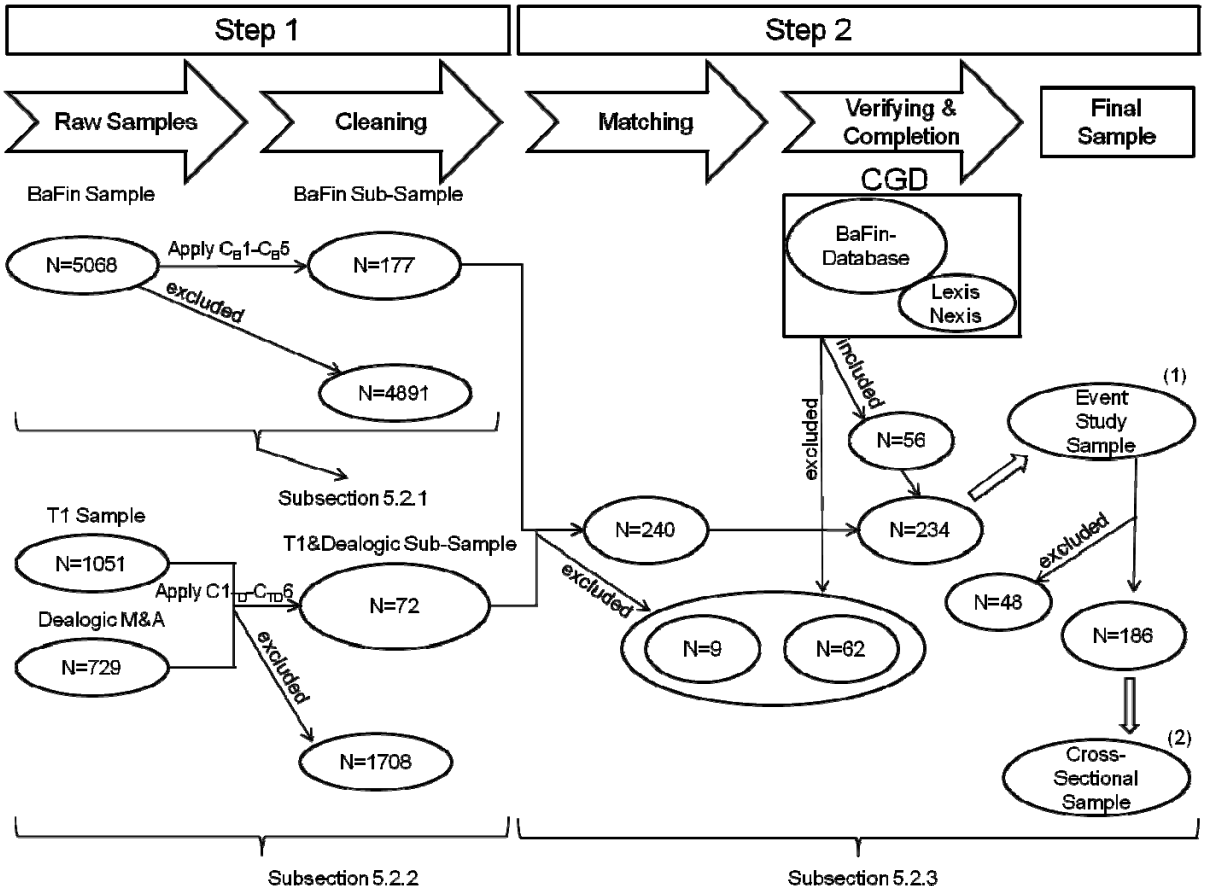
In conclusion, this section has described the derivation of the Thomson-Dealogic subsample by using Thomson-Sample and Dealogic-Sample. Six different sample selection criteria are used to process and clean the sample used as accurately as possible. The next section will discuss the derivation of the final dataset by matching the final dataset derived in this section with the dataset derived in the last section.

5.2.3 Derivation of Final Sample

This section will discuss the second step in the process of deriving the event study and cross-sectional samples for my empirical investigation. The previous two sections discussed *Step 1* in the derivation process. Thereby the *BaFin subsample (5.2.1)* and *Thomson-Dealogic* subsample *(5.2.2)* have been derived. In this section, *Step 2* of the derivation process, right up to final sample, is discussed.

Thereby in two stages, the two subsamples are matched and then in a second step verified and completed. *Figure 5.7* is an extension of *Figure 5.6* in so far that it summarizes the whole derivation process in more depth by showing the arithmetic procedure of the derivation process.[236] In what follows the discussion deals with the second step in *Figure 5.7* where the previous sections extensively discussed *Step 1*.

Figure 5.7: Summary of Derivation of From Raw Samples to Final Sample



(1) **Sensitivity Analysis of** event study sample: For the sensitivity analysis further events are deleted. I test the robustness of the event study sample with respect to overlapping transactions and outliers. Following this, two additional samples are derived. First, the non-overlapping event study sample, which reduces to 204 transactions. Second, the event study sample adjusted for outliers, which reduces to 230 transactions; (2) **Sensitivity Analysis of** cross-sectional sample: For the sensitivity analysis further events are deleted and two additional samples are derived. I test the robustness of the cross-sectional sample with respect to overlapping transactions and outliers. First, after deleting overlapping transactions, the non-overlapping cross-sectional sample consists of 164 transactions. Second, cross-sectional sample adjusted for outliers reduces to 182. A list of the companies in the event study sample and cross-sectional sample is presented in Appendix V and Appendix VI, respectively.

Starting with the two subsamples, I derive the final sample by conducting three substeps: *first*, matching of the two subsamples derived in step one; *second*, verification of the remaining transactions; and, third, completion of existing sample by using the BaFin Database. Accordingly, at

[236] The whole derivation process was carried out in various Excel sheets to cope with the complexity of the data. The different steps within the derivation procedure were broken down as far as possible. Accordingly, I end up with seven excel sheets summarizing the steps taken to get the final sample. However, these sheets, of course, only the end product of the various steps taken in between and hence just give a glimpse into the complex, cumbersome, and comprehensive derivation process. Hence, it should be clear that showing the arithmetic procedure such as in Figure 5.6 and 5.7 does not intend to impose wrong precision but rather aims to structure the comprehensive and complex derivation as much as possible. Nevertheless, the complex data collection procedure as shown in Figure 5.6 and 5.7 again shows that there are many problems with data reliability, quality, and sample selection problems.

this stage transactions are excluded as well as included. The first substep (*matching*) is taken separately whereby the two other steps (*verification and completion*) are carried out more or less simultaneously because the BaFin-Database is helpful for both verification and completion of transactions but other sources are helpful as well. *Table 5.7* summarizes in figures the two steps carried out in step 2 right up to the final sample.

Table 5.6: Overview of Step 2 of Derivation Process right up to the Final Sample

		Excluded/Added	Remaining
	Subsamples (BaFin =177, Thomson ONE & Dealogic = 72)		249
Substep 1	Matching	–9	240
Substep 2	Verifying (BaFin-Database, LexisNexis, other sources)	–62	178
	LexisNexis	+4	182
	EVENT STUDY SAMPLE(1)	+52	234
Substep 3	Exclude Financial Institutions(2)	–32	202
	Explanatory Variables Problems	–16	186
	CROSS-SECTIONAL SAMPLE(3)		186

(1) For the sensitivity analysis two additional samples are derived namely non-overlapping event study sample (N=204) and event study sample adjusted for outliers (N=230); (2) Exclude events with financial targets because of problems with explanatory variables; (3) For the sensitivity analysis two extra samples are derived namely non-overlapping cross-sectional sample (N=164) and cross-sectional sample adjusted for outliers (N=182). A list of the companies in the event study sample and cross-sectional sample is presented in Appendix V and Appendix VI, respectively.

To construct the final data sample in *substep one,* the two subsamples derived in the previous sections namely the BaFin subsample (*N=177*) and Thomson-Dealogic subsample (*N=72*) are matched with each other. This step guarantees that the merged sample does not contain any doubles. This step is necessary because transactions can be included in the BaFin subsample as well as the Thomson-Dealogic subsample since they both contain partial stock acquisitions (see Subsection 5.1.1). After matching the two samples, 9 doubles are identified; after their exclusion, 240 events remain in the sample. It should be emphasized that the small numbers of duplicates shows that it is sensible to work with different data sources.

In *substep two* the remaining transactions are verified and the BaFin-Database is used to complete the existing events by adding additional transactions, i.e., toehold transactions of the events which are already part of the sample prior to this step. Accordingly, no events with a new target or acquirer enter the sample but the existing transactions are completed by previous toehold transactions (same target, same acquirer). This might give important insights and is important for the analysis of partial stock acquisitions. The BaFin-Database constructed for this dissertation is a helpful and innovative approach to tackle this problem. Hence, at this stage transactions are *excluded*, *included, and processed* as described later. The existing events are verified thoroughly by using news providers such as LexisNexis, company information, Internet sources, and the BaFin-Database which gives a good glimpse into the deal history.

A transaction was *excluded* if it was irrelevant to the research question or if it was highly uncertain. Since the stock market response to partial stock acquisitions by new institutional investors is

investigated, it is important that the announcement day of the transactions is relatively certain, the transaction was classified as a partial stock acquisition, and that the acquirer was a new institutional investor. If there was doubt that any of these criteria were met, the transaction was excluded. After excluding 62 transactions, 178 remain in the sample.

A transaction was *included* in the sample if it constitutes a toehold transaction to an event already included in the sample. Toehold transactions are likely to be important for the analysis of the partial stock acquisition announcements. By definition, the BaFin-Sample only includes the most recent transaction announcement of the respective firm and not the whole history of transactions (e.g., no toehold transactions). This is the case for instance if a new transaction has been announced which replaces the previous transaction, e.g., 10% threshold was exceeded previously held 5% (see Subsection 5.3.1). This is a so called toehold acquisition and is not included in the BaFin-Sample. This, however, does not automatically mean that it is not included in the matched sample because both Thomson-Sample and Dealogic-Sample contain historical transactions. There are two cases which trigger an addition to the sample: *first,* a toehold transaction was identified in the BaFin-Database and was not included in the matched sample; and, *second*, a toehold transaction was identified by searching LexisNexis, and it was not included in the matched sample as well as in the BaFin-Database.

The *BaFin-Database* is to my knowledge the most comprehensive historical database of changes in ownership. Hence, an application is sensible and promising. By using the BaFin-Database 52 transactions were identified that present toehold acquisitions and thus are added to the sample. Moreover, during the verification process of the announcement day, I searched LexisNexis for any news three months prior to the announcement day of any BaFin-Sample transaction to identify whether there is an earlier more accurate announcement day. If I identified some toehold transactions erroneously not included in the BaFin-Database, they were added. This means that these transactions have been announced with respect to §21 WpHG and thus belong to the BaFin-Database. This was the case for 4 transactions, and they were included into the sample. Accordingly, overall 56 transactions are added during this step and accordingly the final sample for the event study consists of 234 transactions.

In *substep three* further events for the sample used for the cross-sectional analysis (i.e., cross-sectional sample) are removed in a two-step procedure. *First*, all targets that are financial institutions, defined by a SIC Code (6000-6999), are deleted. This is a common step in the literature and is sensible because otherwise there are crucial problems with the explanatory variables. Particularly balance sheet variables of financial companies have to be treated carefully and differently compared to non-financial firms. *Second*, transactions are excluded if there are problems with the explanatory variables. In detail eight transactions are deleted because of missing data for the competition variables. For six events there was a control event according to the list of control and takeover events by the BaFin before the announcement of the partial stock acquisitions. Because these events might be seriously biased, I delete them to control for event contamination. Additionally, for one event there is no data for the

trading volume variables and for one transaction the M/B variables are higher than 500 which may bias the results. Accordingly, the final cross-sectional sample amounts to 186 transactions.

After the derivation of the event study sample as well as cross-sectional sample, the two samples were verified and processed to enhance data quality. A transaction was *processed* when the verification process indicated that a change in key variables increased the reliability and meaningfulness of the transaction. Two cases are discussed at this point: *first*, a change in the *announcement* day; *second*, a change of the *transaction*. As mentioned earlier, the announcement day of all transactions was verified. For each BaFin transaction LexisNexis or ad-hoc news published from DGAP is used to verify the announcement day by checking whether, in a period of 3 months prior to the official announcement day, there was any news that this transaction was announced to the market earlier. If this was the case, the announcement day was changed. Additionally, the BaFin-Database gives the opportunity to understand the deal history better. If the analysis of the transaction showed that an earlier transaction (same target, same acquirer) required inclusion into the sample, it was changed. There are *two cases* that are worth highlighting. The *first case* is that there is an earlier announcement in the BaFin-Database from the same investor that refers to the same threshold as the previous announcement does (e.g., two announcements of acquirer are associated with the 5% threshold; this implies that the investor fell below somewhere in between). In this case I always use the earliest transaction because it was the first time that the market reacted to the partial stock acquisition and is likely to be less biased. The *second case* is that a new institutional investor who already holds substantial voting rights has to make a new announcement because, for example, one of their funds exceeded a new threshold. In this case I opt for taking the earliest announcement when it was announced that the investor entered the firm. Sections 21 et seq. WpHG obliges investors to announce direct and indirect holdings; thus, the advisory company also has to announce the shareholdings of its funds. If a fund announced a change without a new announcement made by the corresponding advisory company, I assume that no change in ownership took place but rather a new fund was built.

For the sensitivity analysis (see Section 6.4) further events are deleted. *First*, to account for possible problems emerging from event clustering, a non-overlapping sample is constructed that is free from event window clustering. Therefore all transactions announced in the same target firm that are less than 60 calendar days apart are excluded, and only the first announcement remains in the sample. Hence, the event study sample and cross-sectional sample reduce to 204 and 164, respectively. Second, to test the robustness of the results, with respect to outliers in the distribution of CAR, a sample adjusted for outliers is derived. Hence, the highest 1% and lowest 1% in the distribution of CAR are deleted. Therefore, in each of the event study sample and the cross-sectional sample four observations are deleted, and the sample sizes reduce from 234 and 186 to 230 and 182, respectively.

In sum, this section discussed the second step of the derivation procedure of event study and cross-sectional samples, starting with the two subsamples discussed in the two previous sections (i.e., BaFin

subsamples and Thomson-Dealogic subsamples). I summarize the whole derivation process graphically in *Figure 5.7*. This section focuses only on the second step in the derivation process where three steps (matching, verification, and completion) lead to the derivation of the final sample. The event study sample consists of 234 transactions, whereas the cross-sectional sample consists of 186 transactions. For the sensitivity analysis, I derive a non-overlapping sample and a sample adjusted for outliers. While the non-overlapping event study sample (non-overlapping cross-sectional sample) reduces to 204 (164), the event study sample and cross-sectional sample adjusted for outliers is 230 and 182, respectively.

5.2.4 Comparison to Studies on Partial Stock Acquisition Announcements in Germany

The purpose of this section is to give an overview on the primary data sources used by the German benchmark studies on partial stock acquisition in the German Stock market and to compare my data collection procedure to their data collection procedure. The last three subsections (5.2.1-5.2.3) presented my data collection procedure. *Table 5.7* gives an overview on the primary data sources used by the other German studies (for a review of these studies see Section 3.1). Columns 1, 2, and 3 show the name of the author, the investigation period and the sample size, and the primary data sources.

Closer inspection of *Table 5.7* reveals that various different primary data sources are used by the German studies. Meyer and Prilmeier (2006) focus on block eliminations announcements rather than acquisitions and their primary data source is quarterly data from BaFin pursuant §§ 21 WpHG during the investigation period 1997 to 2006. Remember that the BaFin data source is updated bimonthly (see Subsection 5.1.1). Accordingly, they use every sixth historical BaFin sheet which might lead to a gap in some important transactions. Dress and Schiereck (2008) examine 85 new block formation transaction announcements by activist, strategic, and financial blocks during the 1997-2007 period use the SDC/Thomson ONE Banker Deal database as primary data source, which is basically the same as the T1BO Sample used in my study. Mietzner and Schweizer (2008) investigate 226 announcements of partial stock acquisitions by hedge funds and private equity firms in the period running from 1997 to 2007 and use the BaFin data source and Thomson Financial Merger and Acquisitions Database, which is again the same like T1BO. Bessler et al. (2008) scrutinize shareholder activism by hedge funds and used LexisNexis and filings pursuant §21 WpHG provided by Agentur für Unternehmensdaten (AfU). Achleitner et al. (2010a) analyze large block acquisition announcement of at least 25% of voting rights of private equity investors in the 1998-2007 period. They derive a sample of 48 transactions by using Reuter Newswire and Merger Market as primary data sources. Stadler (2010) examines shareholder activism by hedge funds from 2000-2008 and collects a sample of 136 transactions by using the BaFin, Factiva, and Genios as primary data sources.

Table 5.7: Primary Data Sources of Studies on Partial Stock Acquisition Announcements

Study	(2) Period (N)	(3) Primary Sources
Meyer and Prilmeier (2006)	1997-2006 (92)	BaFin data (quarterly basis)
Dress and Schiereck (2008)	1997-2007 (85)	SDC/Thomson One Banker Deals database
Mietzner and Schweizer (2008)	1997-2007 (226)	BaFin data, Thomson Financial Mergers and Acquisition database
Bessler et al. (2008)	2000-2006 (324)	LexisNexis and AfU (Agentur für Unternehmensdaten) filings pursuant to §21 WpHG
Achleitner et al. (2010a)	1998-2007 (48)	Reuters Newswire and the Merger Market database
Stadler (2010)	2000-2008 (136)	BaFin data, Factiva and Genios
Own Event Study Sample 2010	2002-2008 (234)	BaFin datasets, Thomson-Sample and Dealogic-Sample

The data collection procedures of Mietzner and Schweizer (2008), Bessler et al. (2008), Achleitner et al. (2010a), and Stadler (2010) are all relevant for my study as they investigate a similar question.

Mietzner and Schweizer (2008) derive the hedge funds and private equity samples separately. For the hedge funds sample they start with a BaFin-Sample as of March 2007 and exclude all traditional institutional investors (e.g., mutual funds, pension funds) and non-financial corporations. Then, they use Eureka Hedge to exclude all non-hedge funds acquirers and conduct a news run with LexisNexis to cross-check, complete, and validate the sample. For the private equity sample they start with the Thomson Financial Merger & Acquistions (i.e., T1BO) data source. After processing and editing this data, they use the BaFin data as well as a news search from LexisNexis to cross-check, validate, and complete the sample.

Bessler et al. (2008) use a three-step procedure to derive their sample. First, they search the LexisNexis database for hedge fund transactions in CDAX firms by using the term "hedge fund" and the company name within a distance of 50 words. Second, the output files resulting from step one are searched for all news items relevant to their research question. Finally, the events generated from the first two steps were matched with data from AfU (Agentur für Unternehmensdaten), which contains transactions according to §21 WpHG.

Achleitner et al. (2010a) use the Reuters Newswire and Merger Market database (this database is comparable to T1BO and Dealogic M&A and is an independent commercial Mergers and Acquisitions intelligence service) to identify the initial sample. Then, they match this sample with the information from BaFin.

Stadler (2010) uses three primary data sources namely BaFin data, Factiva, and Genios. As a first step, he identifies mandatory disclosures pursuant §21 WpHG by using a sample from BaFin. He processes this sample and excludes non-hedge funds by using information from Eureka database, news runs with Factiva, Genios, and Google. In a second step, he collects a sample of voluntary disclosures (transactions which do not trigger mandatory disclosure rules) by using a Factiva and Genios news run to identify transactions of hedge funds not included in the BaFin data source. In his final step, he merges the data samples.

Comparing my data collection procedure, as unfolded in Subsection 5.2.1-5.2.3, to the procedures used by the other German studies, which also examine private equity firms and/or hedge funds, reveals

that all studies also use hand-collected and novel datasets. This comparison has advantages and disadvantages. Some crucial disadvantage is that it is sometimes difficult to comprehend the data collection process which is crucial for the results and implications of the empirical analysis. I think I enhance the data collection procedure and subsequently the reliability and quality of the data in various ways. At this point I especially would like to highlight *four things* that I do to enhance the quality of the event study data.

First, I constructed the BaFin-Database (see Subsection 5.1.1). The other studies on partial stock acquisition announcements use the BaFin data sheets but do not work with the BaFin-Database (see 5.1.1), which is the most comprehensive sample of changes in substantial voting rights to my knowledge. My construction gives a more complete, accurate, and sophisticated glimpse into the changes of ownership structure over time. The addition of more than 50 transactions in the second step of my data collection procedure underlines that crucial points are left out of consideration when not using this database. Some of the benchmark studies work with a BaFin sheet to a particular reference data; some do not use the BaFin sheets at all as a primary data source but only use it to complete or validate transactions; and one other paper works with more than one BaFin sample namely Meyer and Prilmeier (2006) who use BaFin data sheets at a quarterly basis. Since BaFin is updated bimonthly they only use every sixth BaFin sheet and thus may miss crucial information. By compiling the BaFin-Database, I avoid some problems associated with reporting selection and selection bias, which might be prevalent when just using a BaFin sample (as of a specific date) and/or a commercial database (e.g., Thomson ONE Banker, Dealogic M&A, Merger Market).[237]

Second, one crucial drawback of examining new institutional investors is that it is not clear how to define them. When taking a closer look at the benchmark studies, it is obvious that this is a major shortcoming in the literature. Hence, a relatively comprehensive way of deciding whether a company is defined as a new institutional investor (i.e., hedge fund or private equity firm) is important. Thus, I decided to use four data sources which classify investors: *first*, Eurekahedge; *second*, Thomson One Private Equity database; *third*, Thomson One Ownership data; and, *fourth*, various other data sources such as WGZW, LexisNexis, Factiva, the company's website (see Section 5.1.2 and 5.1.3 for description).

Third, another major problem in empirical studies on partial stock acquisitions of the German stock market is that there is no standard database. Accordingly, one has to use various data sources to derive the final sample. Because the different data sources have different advantages and disadvantages (BaFin datasets, Thomson ONE, and Dealogic) and are complementary in nature it is sensible to use them simultaneously. I opt for choosing three data sources as initial samples for my data collection procedure. By using three data sources, I reduce the probability in missing out on relevant events. This is important because missing these events would bias the results.

[237] Brav et al. (2008, p.1739) put forward a similar argument when they discuss the benefits of compiling an independent, hand-collected database as opposed to using publicly available databases.

Fourth, as mentioned earlier, the BaFin sources (BaFin-Sample and BaFin-Database) are unstructured and very rudimentary data sources, and accordingly it is important to structure them diligently. At this point I want to highlight two problems particularly. *First*, the BaFin data source does not indicate whether the investor exceeds or falls below a certain mandatory threshold. *Second*, the announcement day of the BaFin source might be seriously flawed or biased, because it may contain the wrong announcement day or the news became public earlier because of the lagged disclosure transactions pursuant §21 WpHG. Especially for event studies, the announcement day is important. While collecting the data for the event study sample a randomly chosen sample has shown that there are serious problems with the announcement day in the BaFin sample. This was also confirmed by other studies, e.g., Stadler (2010). Mietzner and Schweizer (2008) also discuss the problem of the lagged disclosure of the transactions provided by the BaFin data source. Accordingly, in my data collection procedure, I decided to search for the original ad hoc news pursuant §§21 WpHG because this information clarifies the type of transaction (stock acquisition or elimination). Sometimes investors exceed and fell below the same threshold in a short period of time. In such a case it is important to identify the first transaction because this is not clear from just using the BaFin source. Additionally I completed and validated the transaction and the announcement day by conducting a news search with LexisNexis and Factiva, and by using company information such as the annual reports, the annual documents, and the investor relation website of the target firm. This process helped to make better the quality of the final sample.

5.3 DERIVATION OF EXPLANATORY VARIABLES FOR CROSS-SECTIONAL ANALYSIS

This section presents and discusses the data collection procedure of the explanatory variables for the cross-sectional analysis. These variables are used to examine the cross-sectional variation of the abnormal returns and therewith test the predictions of the empirical framework as developed in Subsection 4.2.2. The dependent variable is the announcement effect of partial stock acquisition measured as CAR and is regressed on the explanatory variables in five different econometrical model specifications as outlined in Section 4.3. Keep in mind that the event study sample used for the cross-sectional analysis was further reduced because of data availability and further validity tests. Hence, the number of observations used for the cross-sectional analysis is 186 (see Subsection 5.2.3). *Figure 5.8* shows descriptive statistics for all explanatory and control variables that are quantitative in nature. I decompose these variables into three groups of variables namely PAC (see Subsection 5.3.1), CGC (see Subsection 5.3.2), and OV (see Subsection 5.3.3).

Table 5.8: Descriptive Statistics of Continuous Variables of Cross-Sectional Analysis

	(1) Mean	(2) Median
Partial Acquirer Characteristics (PAC)—Subsections 5.3.1		
BLOCK	8.5	5.2
Corporate Governance Characteristics (CGC)—Subsections 5.3.2		
Targets Ownership Characteristics (TOC)		
CONCENTRATION	0.7	0.7
INSTITUTIONAL	6.8	5.3
Other Target Corporate Governance Charactersitcs		
MOWNERSHIP	11.9	0.6
SBOARD	2.2	1.7
COMPETITION	420.1	73.7
DEBT	51.7	32.7
Other Variables (OV)—Subsections 5.3.3		
Other Hypotheses (OH)		
UV	2.9	2.3
Control Variables		
SIZE	5.2	4.9
VOLUME	0.0	0.0

(BLOCK) proportion of common stock of the target firm held by the acquirer post transaction; (CONCENTRATION) proportion of common stocks held by three largest shareholders in relation to proportion held by the ten largest shareholders; (INSTITUTIONAL) proportion of common stocks held by institutional investors among the ten largest shareholders; (MOWNERSHIP) proportion of common stock held by board members; (SBOARD) ration of supervisory board members to management board members ; (COMPETITION) measures the competition in the target firm's industry measured by the HHI, i.e., Herfindahl-Hirschman-Index; (DEBT) leverage is measured as total debt % of Common Equity ; (UV) the market to book ratio of equity; (SIZE) log of total assets ; (VOLUME) illiquidity measure defined by Amihud (2002).

I report descriptive statistics for all explanatory and control variables that are qualitative in nature (e.g., dummy variables) in *Figure 5.9*. As in *Figure 5.8,* these variables are partitioned into three groups of variables namely PAC, CGC, and OV.

Table 5.9: Descriptive Statistics of Dummy Variables for Cross-Sectional Analysis

	(1) N	(2) Proportion
Partial Acquirer Characteristics (PAC)—Subsections 5.3.1		
PE	51	0.27
TOEHOLD	42	0.23
HPERIOD	150	0.81
Corporate Governance Characteristics (CGC)—Subsections 5.3.2		
Targets Ownership Characteristics (TOC)		
CONTROLLING	70	0.38
Other Variables (OV)—Subsections 5.3.3		
Other Hypotheses (OH)		
TO	18	0.10
Control Variables		
TIME2003	9	0.05
TIME2004	5	0.03
TIME2005	23	0.12
TIME2006	26	0.14
TIME2007	99	0.53
TIME2008	20	0.11
K-INDUSTRY	47	0.25
I-INDUSTRY	20	0.11
G-INDUSTRY	14	0.08
D-INDUSTRY	102	0.55

(PE) a dummy variable taking the value of one if the acquirer is a private equity firm; (TOEHOLD) a dummy variable taking the value of one if the acquirer holds a toehold; (HPERIOD) a dummy variable taking the value of one if the holding period of the transaction is more than a year; (CONTROLLING) a dummy variable taking the value of one if the target has a controlling shareholder >25%; (TO) a dummy variable taking the value of one if the partial acquisitions is followed by a control event, (K-INDUSTRY) real estate, renting, and business activities; (I-INUSTRY) transport, storage, and communication; (G-INDUSTRY) wholesale and retail trade; (D-INDUSTRY) Manufacturing

The remainder will discuss each variable briefly, followed by defining and explaining how they were derived. This section begins by looking at the variables measuring Partial Acquirer Characteristics (5.3.1). Then, the focus is on variables measuring the Corporate Governance Characteristics (5.3.2) before Other Variables (5.3.3) are discussed.

5.3.1 Partial Acquirer Characteristics

Partial Acquirer Characteristics (PAC) describe the investor and transaction characteristics of the partial stock acquisition. This group of explanatory variables consists of four variables namely type of investor (PE), toehold transaction (TOEHOLD), block size (BLOCK), and holding period (HPERIOD). *Table 5.10* shows each PAC variable and states the primary sources for data collection procedure.

The *type of investor* variable (i.e., PE) indicates whether the investor is a private equity firm or a hedge fund. Accordingly, this variable is a dummy variable taking 1 if the investor is classified as a private equity firm and 0 otherwise. Hence, the variable is labeled *PE*. The definition and distinction between private equity firm and hedge firm is everything but clear cut (see Section 5.2). Four data sources are used mainly to classify these investors namely Eurekahedge, Thomson ONE Banker, Thomson ONE Ownership, and other data sources. Other data sources are LexisNexis, Factiva, and

Internet data sources, such as a company's website. Observing *Table 5.9* reveals that in my final cross-sectional sample for the event study analysis 27% (N=51), transactions are from private equity firms; whereas 73% (N=135) of the transactions are from hedge funds.

TOEHOLD indicates that the investor acquired target common stocks (a toehold) in the market prior to the respective partial acquisition. This implies that there are at least two partial stock acquisitions by the toehold investor. Hence, this variable is a dummy variable taking the value of 1 if the acquirer has a TOEHOLD in the company and 0 otherwise. To gather information on whether or not the partial stock acquirers own a toehold in the target companies prior to the transaction, the BaFin-Database and the three datasets (BaFin-Sample, Thomson-Sample, and Dealogic-Sample) are screened carefully. I also conducted a news search by using LexisNexis and Factiva, and screened the annual report and other target firm's information, for instance, published on the target firm's website. Of course, previous shares can be detected only when they are reported. Accordingly, the thresholds according to § 21 WpHG are usually the triggers for reporting, if they are not published voluntarily which is rather unlikely, especially in the case of new institutional investors. If a shareholder has not reported any shareholdings previous to the transaction this does not ultimately imply that no shareholdings are held. I only can use public available information, however, and hence classify toeholds mainly based on the information described in this paragraph. Table 5.9 shows that there are 42 toehold transactions in my cross-section sample.

Table 5.10: Description of Partial Acquirer Characteristics Variables

Variable name	Definition	Sources
PE	A dummy variable taking the value of one if the acquirer is a private equity firm	Thomson ONE Banker and Ownership, Eurekahedge, and other data sources. Other data sources (e.g., LexisNexis, Factiva)
TOEHOLD	A dummy variable taking the value of one if the acquirer holds a toehold	Thomson-Sample, Dealogic-Sample, BaFin-Sample, BaFin-Database and other data sources (e.g., LexisNexis, Factiva, company data)
BLOCK	The proportion of common stock of the target firm held by the acquirer post transaction	Thomson Sample, Dealogic-Sample, BaFin-Sample, BaFin-Database, Ad-hoc news
HPERIOD	A dummy variable taking the value of one if the holding period of the transaction is more than a year	BaFin-Database, Ad-Hoc, Factiva, Lex-isNexis, Company's Website

BLOCK measures the percentage of common equity owned by the investor after the transaction. This variable is a quantitative variable measuring the proportion of control rights of the respective investor. This information is initially given by the three raw samples namely BaFin-Sample, Thomson Sample, and Dealogic-Sample. It may be noteworthy that I used the stake owned post-transaction

rather than the actual stake acquired during the transaction. This is mainly because of data limitations. The actual stake acquired seems to be more relevant in the first place but it is difficult to use because it is not required to publish the actual amount acquired. Hence, the stake held post-transaction is used to proxy for the additional incentive of the large shareholder because of the shares acquired. Accordingly, this may lead to a bias and should be noted. However, because of data limitations there seems to be no better approach. Furthermore, I searched for the original ad-hoc message of the transaction to verify the block size. Inspecting Table 5.8 reveals that the mean (median) block size is 8.5% (5.2%).

The variable *HPERIOD* gives information on how long a shareholder holds their stake in the target company. I opt for using a dummy variable to measure the holding period of the investment. Accordingly, a dummy variable is applied taking the value of *0* if the holding period is less than one year and *1* if the holding period is more than one year. The information for compiling this variable is collected in a two-step procedure by using the BaFin-Database, company's information, and ad hoc news. As a *first step* the BaFin-Database is used to check whether the acquirer still holds a stake in the target company about one year after the end of the investigation period (October 2009). If this was confirmed, the holding period was at least one year or more since the investigation period stops in July 2008. If the acquirer was not a shareholder anymore in October 2009, I tried to find the exit time of the acquirer in a *second step*. Therefore, I use the company's information (annual reports and company's website), ad hoc messages on the respective transaction provided by different information providers (e.g., LexisNexis, Factiva, DGAP), and the BaFin-Database. If the first two sources did not give any useful information, I checked when the acquirer was dropped from the BaFin-Database to use this as the point of exit.

A word of caution might be in order. Because the BaFin-Database was one of the main sources in the derivation of the holding period, this could leads to an understatement of the actual holding period. That is because I calculated the holding period as from the date the of the first of announcement of the transaction to the date the investor no longer holds a significant stake in a target firm according to publicly available information. Since various investors have not exited the target before October 2009 (the final historical BaFin-sample used for this analysis is compiled as of October 6th, 2009) I assume as the exit date the date when the last Excel sheet of BaFin was compiled (October 6th, 2009). A closer inspection of the final sample reveals that this is the case in 90 transactions. Hence, the actual holding period would be even longer than the holding period used in my analysis. This is one reason why I opt to choose a dummy, rather than a continuous, variable to measure the holding period. Closer inspection of *Table 5.9* shows that 81% of the events have a holding period, which exceeds one year. That is surprising because new institutional investors, especially hedge funds, are usually accused of being short-term investors—this should be borne in mind and these issues will be addressed again in Chapter 6.

In conclusion, this subsection introduced and described the PAC variables used for my cross-sectional analysis. Thereby, I defined these variables, stated the primary sources and data collection procedures, and discussed descriptive statistics.

5.3.2 Corporate Governance Characteristics

Corporate Governance Characteristics (CGC) are variables describing the corporate governance system in place in the target company. This group of variables consists of seven variables decomposed into Target Ownership Characteristics (TOC) and Other Corporate Governance Characteristics (OCGC). TOC is further subdivided into three variables namely CONCENTRATION, CONTROLLING, and INSTITUTIONAL. OCGC is subdivided into SBOARD, MOWNERSHIP, DEBT, and COMPETITION. In what follows, each of these variables is discussed briefly, and I then explain how I derived them. Furthermore, some descriptive statistics are presented. *Table 5.11* defines the variables and gives the primary sources for the data collection procedure.

The *CONCENTRATION* measure is defined as the sum of the three largest shareholders in the company divided by the sum of the ten largest shareholders. I standardize by the ten largest shareholders to give the proportional power of the three largest shareholders of the respective company. The degree of ownership concentration differs amongst the target companies, and standardizing by the sum of the ten largest shareholders helps to measure the real influence of large shareholders in the respective firms. The data is retrieved from the Ownership Matrix (see Subsection 5.1.1). The mean (median) value of this variable is 0.7 (0.7) as depicted in *Table 5.8*.

The *CONTROLLING* variable measures whether there is a controlling shareholder in the target company. This is a dummy variable taking the value 1 if there is a large shareholder who holds at least 25% of target firm's voting rights and 0 otherwise. For the data collection procedure of this variable, I used the Ownership Matrix too. *Table 5.9* shows that there are 70 targets (or 38%) that have a controlling shareholder.

The *INSTITUITONAL* ownership measure accounts for the type of ownership. It is a quantitative variable measuring the sum of institutional ownership in the respective target company. The data is likewise retrieved from the Ownership Matrix as the previous two ownership variables. As presented in *Table 5.8*, the mean (median) value of this variable is 6.8 (5.3).

Table 5.11: Corporate Governance Characteristics Variables

Variable name	Definition	Sources
CONCENTRATION	Proportion of common stocks held by the three largest shareholders in relation to the proportion held by the ten largest shareholders	Ownership Matrix
CONTROLLING	A dummy variable taking the value of one if the target has a controlling shareholder >25%	Ownership Matrix
INSTITUTIONAL	Proportion of common stocks held by institutional investors among the ten largest shareholders	Ownership Matrix
MOWNERSHIP	Proportion of common stock held by board members	Annual Reports
SBOARD	Ration of supervisory board members to management board members	Annual Reports
COMPETITION	Measures the competition in the target firm's industry measured by the HHI	Survey of the Monopolkommission 2006/2007
DEBT	Leverage is measured as total debt % of Common Equity	Thomson ONE Banker

MOWNERSHIP serves as a measure to gauge the incentive alignment of managers and shareholders. The complete remuneration packets of the board of directors, including shareholdings, would be the optimal variable to measure the incentive of the board (see section 2.2.2). It is, however, common to use managerial ownership as a substitute for the whole remuneration packets, which is usually not reported in enough detail. Hence, the percentage of managerial ownership is used which is a continuous variable measuring the control rights to the last fiscal year prior to the announcement day. A hand-collected managerial ownership dataset is created as described in subsection 5.1.2. The mean and median values of managerial ownership in the target firms are 11.9% and 0.6%, respectively (see *Table 5.8*).

The *SBOARD* aims to measure the effectiveness of the board of directors. I define this variable as the ratio of supervisory board members to management board members. A *board dataset* is created for the purpose of collecting the data. I use the annual reports of the respective company in the fiscal year prior to (T_{-1}) and after (T_0) the announcement day as inputs to the board dataset. In Germany corporations have a two-tier board structure consisting of the management board and the supervisory board. The size of the management and supervisory board is usually reported in the annual report. Hence, all annual reports of the target firms in the fiscal year prior to (T_{-1}) and after the announcement (T_0) were screened manually to gather the necessary information. *Table 5.12* exemplifies the basic structure of the board dataset. Generally the annual reports are available on the company's webpage. If this was not the case, I tried to extract the annual reports from the fillings stored in the Thomson ONE Banker Database. In eight events one of the respective (t_{-1} or t_0) annual reports was not available and

as a substitute the interims or previous annual reports was used to find comparable information.[238] *Table 5.8* shows that the mean (median) value of SBOARD in the cross-sectional sample is 2.2 and 1.7, respectively.

Table 5.12: Basic Structure of Board Dataset

Target	Source	MBM(1)	SBM(2)	Source	MBM(1)	SBM(2)
4SC	GB2006	4	6	GB2007	4	6
....				...		

(1) MBM = Management Board Members, (2) SBM = Supervisory Board Members; (3) CIB= Change in Board

The *COMPETITION* measure gauges the degree of product market competition in the targets industry. To measure product market competition, the Herfindahl-Hirschman-Index (HHI) of producer concentration is used, e.g., defined by Monopolkommission (2008, p.103). The data is extracted from the biennial report of the German Federal Antitrust Commission as reported in the 17th survey of the Monopolkommission 2006/2007 (see Subsection 5.1.3). The mean (median) value of Herfindahl index is 420 (74) as shown in *Table 5.8*.

DEBT measures the amount of leverage in the target company. I measure leverage by the ratio of total debt as the percentage of common equity in the target firm. The data is retrieved from the Thomson ONE Banker who stores historical information on the financial statements, income statements, and cash flow statement of the respective target companies. The mean (median) amount of total debt as percentage of common equity is 52% (33%) as depicted in *Table 5.8*.

In sum, this subsection introduced the TOC variables for the cross-sectional analysis. The goal was to briefly introduce the explanatory variables and to give some descriptive statistics.

5.3.3 Other Variables for Cross-Sectional Analysis

The other variables consist of variables measuring the other hypotheses namely the undervaluation hypothesis (UV) and the anticipated takeover hypothesis (TO) and of control variables controlling for size fixed effects (SIZE), trading volume effects (VOLUME), industry fixed effects (INDUSTRY), and time fixed effects (TIME). *Table 5.13* displays definition and primary sources of other variables.

The variable *UV* measures the valuation level of the respective target company. I use the market-to-book ratio of the respective company which is a continuous variable measuring the relation between market valuation of equity versus book valuation of equity. I use the market value of 40 trading days previous to the announcement and book value to the last fiscal year of the respective target company. The market value of 40 days previous to the announcement day is used to prevent bias through the

[238] During the collection procedure, I also gathered information regarding the presence of the acquirer in the supervisory board of the target firm. This, however, was only the case in 11 out of 204 events. Hence, this variable was dropped from the board dataset because it seems to be irrelevant information. It is still interesting that it seems uncommon that new institutional investors become board members in their target companies (at least in Germany). Additionally I documented changes in the board of directors (CIB) according to the annul reports' section where the size of the board is presented. This variable was also dropped from the dataset.

announcement effect of the partial stock acquisition. The data for the book value of equity is retrieved from the Thomson ONE Banker and the market value of equity from Datastream. The mean and median value is 2.9 and 2.3, respectively (see *Table 5.8*).

The variable *TO* indicates whether there is a control event in the respective target company following the partial acquisition announcement. This variable is a dummy variable taking the value of 1 if there is a control event and 0 otherwise. In accordance with the Securities Acquisition and Takeover Act (WpÜG) investors have to publish information about takeover bids which are defined as the ownership of at least 30% of the targets voting rights. The list published on the website of the BaFin consists of simple acquisition offers, takeover bids, and mandatory bids. This list is used to check whether there was a control event following the announcement of the partial stock acquisition announcement in the target company. The control event is not necessarily a takeover bid, acquisition offer, or mandatory bid made by the initial investor. This means that I classify a control event (i.e., TO equals 1) if any investor (not necessarily the initial partial acquirer) makes any bid or offer to the target firm according to the BaFin sample with respect to WpÜG (see Subsection 5.1.3). In 18 out of 186 events, a control event takes place after the partial stock acquisition, as seen in *Table 5.9*.

Table 5.13: Other Variables for Cross-Sectional Analysis

Variable name	Definition	Sources
UV	The market to book ratio of equity	Datastream, Thomson ONE Banker
TO	A dummy variable taking the value of one if the partial acquisitions is followed by a control event	Sample with respect to WpÜG from BaFin Website
SIZE	Log of total assets	Thomson ONE Banker
VOLUME	Illiquidity measure defined as the average ratio of the daily absolute return to the (Euro) trading volume on the respective event date	Datastream
INDUSTRY	Six dummy variables each taking the value of one if the respective dummy fits the target firm's industry	WZ 2003
TIME	Seven dummy variables each taking the value of one if the respective transaction takes place in the respective year dummy	Thomson-Sample, Dealogic-Sample and BaFin-Sample and BaFin-Database

For the construction and testing of an econometrical model, control variables are used to control for the omitted variables bias and firm heterogeneity. Particularly I control for SIZE, VOLUME, INDUSTRY, and TIME.

SIZE measures the log of total assets as of the last fiscal year of the respective target company. The data is retrieved from Thomson ONE Banker. The mean (median) is €5.2 billion (€4.9 billion).

VOLUME is a illiquidity measure suggested by (Amihud, 2002, p.34) and defined as:

$$\mathrm{ILLIQ_i} = 1/\mathrm{D_i} \sum_{t=-220}^{\mathrm{D_i}} |\mathrm{R_{i\tau}}|/\mathrm{VOLD_{iv\tau}}$$

This measure gives the average ratio of the daily absolute return to the (Euro) trading volume on the respective event date. *R* is the return of the share price of security *i* on the event date τ and VOLD is the respective trading volume in Euro. D_i is defined as the number of trading days for which return data is available for security *i*. Hence, this ratio gives the daily price impact of the order flow, as discussed by Amihud (2002). The data for calculating the volume is extracted from Datastream.

I control for the *INDUSTRY* fixed effect by introducing industry dummies according to the German classification of Economic Activities of the German federal statistical office (Statistische Bundesamt, 2003). The German Classification of Economic Activities (WZ2003) distinguishes 17 sections of different industries in its most aggregated form. Out of the 17 sections the target companies are located in six industries. These are as follows: *first*, mining and quarrying; *second*, manufacturing; *third*, wholesale and retail trade; *fourth*, transport, storage, and communication; *fifth*, real estate, renting, and business activities; and, *sixth*, other community, social, and personal activities. This means five dummies are used within my cross-sectional model to account for industry fixed effects.

YEAR dummies control for the time fixed effect. The three main datasets Thomson-Sample, Dealogic-Sample, and BaFin-Sample indicate the year of the respective transaction. The investigation period comprises seven years, and accordingly I use six dummies to account for time fixed effects.

In summary, this subsection introduced and discussed the proxies used to measure the other hypotheses (i.e., the undervaluation hypothesis and the anticipated takeover hypothesis) and the control variables controlling for firm heterogeneity in the cross-sectional analysis.

6 RESULTS OF EMPIRICAL ANALYSIS

While Chapter 4 has introduced the applied methodology, hypotheses, and the econometrical models, and Chapter 5 has described the data for the analysis, this chapter (Chapter 6) presents and interprets the results of the empirical analysis. The goal of this analysis is to investigate whether new institutional investors utilize their potential to create value in public corporations by enhancing the respective corporate governance system. Two steps are conducted for this investigation. *First*, an event study is conducted to assess the announcement effect on partial stock acquisitions by new institutional investors during the 2002 and 2008 period. *Second*, the determinants of the announcement effect are examined by using a cross-sectional analysis approach.

The first section of this chapter presents descriptive statistics of the data used for my empirical analysis (Section 6.1). The second section shows the results of the event study analysis, and thus answers whether or not my data confirms a positive announcement effect (Section 6.2). In the third section, the results of the cross-sectional analysis are outlined (Section 6.3). And in the fourth section, a sensitivity analysis is performed to check the robustness of my results (Section 6.4).

6.1 DESCRIPTIVE DATA

This section presents descriptive data regarding the acquirers' investment pattern and the target firms' characteristics. Thereby this section starts with an observation of the partial acquirers' investments pattern in order to investigate the methods of investment of new institutional investors and to examine whether hedge funds and private equity firms differ in their methods of investment (Subsection 6.1.1). Section 6.2 analyzes the target firms' characteristics for all new institutional investors but also separately for hedge funds and private equity firms. Overall, the purpose of this section is to describe my sample under investigation and to provide useful information for my empirical investigation on partial stock acquisitions by new institutional investors and their potential to create value by reducing agency costs.

6.1.1 Acquirers‘ Investment Patterns

This subsection examines the investment patterns of the new institutional investors. *Table 6.1* reports descriptive statistics of the acquirers' investment patterns. Panel A shows the acquirers ownership stake and committed capital. Panel B displays the distribution of the events across the investigation period from 2002 until 2008. Panel C reports the holding period by new institutional investors.

To begin with, I discuss *Panel A*, which presents the ownership and committed capital of the partial stock acquisition. The whole sample (Columns 1 and 2) is broken down further into the hedge funds (Columns 3 and 4) and private equity (Columns 5 and 6) sample. The mean (median) value of

ownership of all new institutional investors, hedge funds, and private equity firms is 8.48% (5.19%), 6.48% (5.08%), and 13.79% (10.13%). It is apparent that private equity investors, as expected, held larger ownership stakes than hedge funds. However, a more important pattern emerging from Panel A is that new institutional investors do not acquire controlling blocks necessarily; rather in my sample, the pattern suggests that minority stakes are held. Recall that the focus is on transactions between 3% and 30%. Thus, transactions exceeding the latter threshold are excluded. Hence, the general investment pattern of new institutional investors cannot be examined because the analysis looks at specific types of investments. Still, in my sample the investors seem to be minority investors rather than majority investors. Bessler et al. (2008), who also concentrate on a sample of partial stock acquisition below 30% of voting rights, find similar patterns in their analysis on shareholder activism in Germany and confirm my findings that new institutional investors, such as hedge funds, do not generally buy controlling stakes. In their sample, the median stake amounts to 5.2%—this is a minority block position. Moreover, Brav et al. (2008) confirm in their analysis of hedge fund activism in the US stock market that these investors do not generally buy controlling positions in target companies. They find that the median ownership stake in their sample is 5.4%. Turning to the invested capital of the partial stock acquirer, *Table 6.1* shows that the mean value for all transactions, hedge funds, and private equity firms amounts to 57.41 million (Column 2), 39.78 million (Column 4), and 104.09 million (Column 6). These are relatively small investments (note that I calculate the invested capital by multiplying the stake owned post-transaction by the target firms' market value 40 days prior to the announcement day); nevertheless, these small investments reveal a similar pattern as for the ownership stake.

Table 6.1: Descriptive Statistics of Acquirers' Investments

Panel A: Acquirers' Ownership Stake and committed Capital

	All Events		HF Events		PE Events	
	(1)	(2)	(3)	(4)	(5)	(6)
Percentile	Ownership (in %)	Invested Capital (€ M.)[1]	%Ownership (in %)	Invested Capital (€ M.)	%Ownership (in %)	Invested Capital (€ M.)
5%	3.03	0.90	3.03	1.17	3.07	0.68
25%	3.42	2.79	3.23	3.30	5.24	2.16
50%	5.19	8.62	5.08	9.64	10.13	6.17
75%	10.13	38.74	6.59	43.61	21.88	19.44
95%	25.08	186.84	17.48	172.99	29.00	516.20
Mean	8.48	57.41	6.48	39.78	13.79	104.09
Max	29.90	2552.01	26.26	452.82	29.90	2552.01
Min	3.00	0.14	3.00	0.39	3.00	0.14

Panel B: Year of Event

	All Events		HF Events		PE Events	
Year	(1)	(2)	(3)	(4)	(5)	(6)
	Number	Percentage	Number	Percentage	Number	Percentage
2002	4	2.2%	2	1.5%	2	3.9%
2003	9	4.8%	3	2.2%	6	11.8%
2004	5	2.7%	1	0.7%	4	7.8%
2005	23	12.4%	15	11.1%	8	15.7%
2006	26	14.0%	20	14.8%	6	11.8%
2007	99	53.2%	80	59.3%	19	37.3%
2008	20	10.8%	14	10.4%	6	11.8%
Total	186	100%	135	100%	51	100%

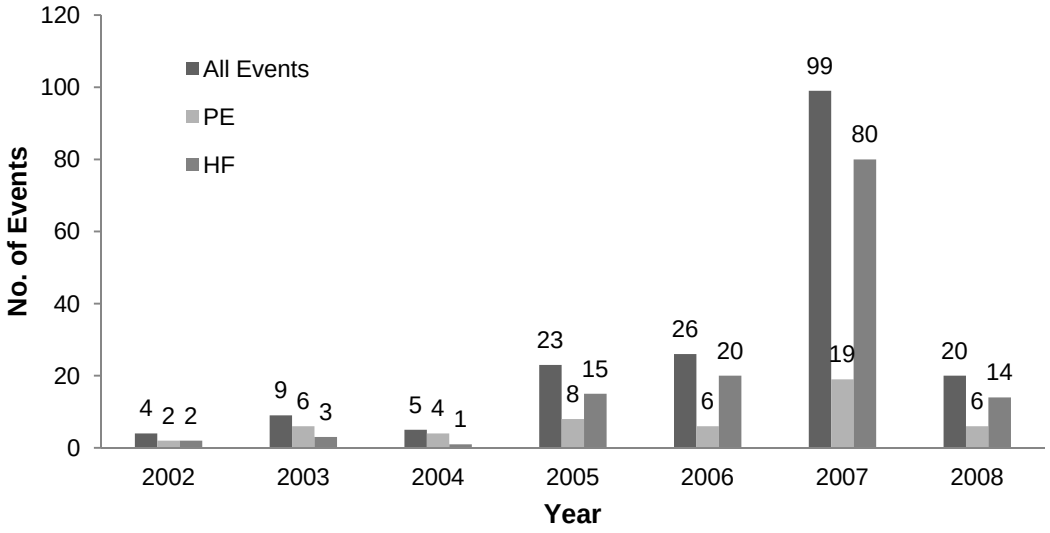
Panel C: Holding Period of Investments (in days)

	All Events		HF Events		PE Events	
	(1)	(2)	(3)	(4)	(5)	(6)
Percen-tile	Calendar Days	Trading Days	Calendar Days	Trading Days	Calendar Days	Trading Days
5%	132	80	132	89	167	117
25%	412	260	388	271	521	363
50%	670	459	663	457	701	491
75%	985	689	951	659	1318	915
95%	1802	1267	1630	1136	2161	1508
Mean	796	544	751	522	914	636

[1] Invested capital is the product of stake owned after transaction and market value of the target 40 days previous to the announcement day; HF:= hedge funds; PE:= private equity firms.

Panel B displays the distribution of the events across the investigation period. Column 1 presents the number of events for all transactions; Column 3 for hedge funds transactions; and Column 5 for private equity firm transactions. It is obvious that events are not uniformly distributed across the investigation period; rather, they are skewed to the right side. On closer examination Panel B reveals that 53.2% of the transactions for the whole sample, 59.3% for HF sample, and 37.3% for the PE sample are executed in 2007. One explanation why these deals are so concentrated in 2007 is that the mandatory voting thresholds pursuant to sections 21 et seq. were changed on January 20th, 2007 following Germany's Transparency Directive Implementation Act (Transparenzrichtlinien-Umsetzungsgesetz) (see Subsection 5.1.1). Following the amendments of this act, the minimum threshold reduced to 3% from 5%, and three additional threshold were introduced namely 15%, 20%, and 30%. As a result more partial stock acquisitions were announced in 2007. *Figure 6.1* illustrates this pattern more clearly.

Figure 6.1: Distribution of Events Across Investigation Period in Cross-Sectional Sample



Panel C shows the length of the holding period of the investments in both calendar and trading days. An interesting and important pattern emerging from inspecting the holding period figures is that new institutional investors seem *not* to be short-term oriented investors. The mean (median) holding period in calendar days for the complete sample (Column 1), for the Hedge Fund sample (Column 3), and for the Private Equity sample (Column 5), amounts to 796 (670), 751 (663), and 914 (701) days, respectively. When observing the holding length in terms of trading days, the holding periods are slightly short-termed but still show the same pattern as observed under calendar days. The mean (median) holding period (in trading days) for the complete sample (Column 2), for the Hedge Fund sample (Column 4), and for the Private Equity sample is (Column 6) amounts to 544 (459), 522 (457), and 636 (491) days, respectively.[239] However, there is strong evidence suggesting otherwise; that is, to the contrary to the usual accusation that new institutional investors (primary hedge funds) are short-term investors targeting short-term profits at the expensive of long-term shareholder value (Kahan and Rock, 2007). Consistent with my findings are the findings by Stadler (2010), who reports mean (median) holding periods of 252 (290) trading days. Brav et al. (2008) report median holding length for all events in their analysis of 369 days. Boyson and Mooradian (2007) find the holding period (or mean time in activism) to be between one and two years depending on the type of activism (e.g., communication-only, communication then aggressive, and aggressive). Greenwood and Schor (2009) report shorter holding periods of about 7 months; and, Becht et al. (2008) find holding lengths to be about two years. All studies are consistent with my findings: moreover, these findings strongly suggest that contrary to most of its critics, new institutional investors are not short-term holding period investors. This is a striking find.

[239] Remember that the holding period displayed in *Table 6.1* even underestimates the true holding length, since in my analysis the holding length is calculated from the date the new institutional investor no longer holds a substantial voting right in a target firm, which does not necessarily means that they exit the firm (see Subsection 5.3.1).

In sum, this subsection has touched on the investment pattern of new institutional investors. There are *three* key findings. *First*, in my sample, new institutional investors mostly buy minority shareholder stakes in target firms. *Second*, partial stock acquisition announcements are not uniformly distributed across the investigation period. *Third*, new institutional investors, contrary to the belief of most critics, seem *not* to be short-term investors.

6.1.2 Target Firms' Characteristics

This subsection touches on the target firms' characteristics in my sample. *Table 6.2* displays the descriptive statistics for the target firms associated with target firms' financials (Panel A), corporate governance characteristics (Panel B), and target firms' indices and industries (Panel C). Columns 1 and 2 show mean and median figures for the whole sample; Columns 3 and 4 (columns 5 and 6) present the figures of hedge fund transactions (private equity firm transactions); and, Column 7 and column 8 present the results of the test of mean difference.

Panel A presents the financials of target companies. For all events, the mean (median) market value is € 1.1 billion (€ 164 million); for hedge funds, the mean (median) market value amounts to € 869 million (€ 192 million); and, for private equity firms the mean (median) market value is € 1.6 billion (58 Million). Hence, these figures suggest that new institutional investors target relatively small firms and that the mean market value is larger for private equity firms than for hedge funds. For the median market value, the opposite is true: the median value is larger for hedge fund targets. The difference in the mean market value, which amounts to 693 million, is not statistically significant as suggested by a simple test of mean difference. The mean (median) ROE amount to –4.19% (9.69%) for the whole sample, –1.55% (11.02%) for the hedge funds sample, and –11.17% (4.93%) for the private equity sample. The large difference between the mean and median value of ROE across all samples suggests that the deviation between the different target firms is substantial. The test of mean differences shows, however, that there is no significant difference in ROE between the private equity firms and the hedge funds. The mean (median) market-to-book value is 2.87 (2.27) for all transactions, 3.26 (2.41) for hedge fund events, and 1.85 (1.75) for private equity targets, respectively. The test of mean difference shows that the mean market-to-book value is significantly higher for hedge fund targets than for private equity targets. One interpretation for this finding is that firms targeted by private equity firms are more undervalued than those targeted by hedge funds.

Table 6.2: Descriptive Statistics for the Target Firms

Panel A: Financials

	All Events		HF Events		PE Events		Diff. HF-PE	
	(1) Mean	(2) Median	(3) Mean	(4) Median	(5) Mean	(6) Median	(7) (Mean Diff)	(8) *t*-stat
Tot. Debt%Common Equity	51.66	32.67	47.36	34.22	63.03	29.47	-15.66	-0.36
Tot. Debt %Tot.Assets	19.96	14.68	20.11	14.67	19.56	14.69	0.55	0.14
Net CF (€m.)	286.34	19.69	222.64	30.87	454.97	5.72	-232.34	-0.63
Net CF/Sales	0.64	0.11	0.84	0.13	0.11	0.08	0.74	1.22
Sales	1669.93	154.69	1517.97	164.81	2072.20	62.21	-554.23	-0.44
ROA (in%)	-0.63	4.79	0.95	5.27	-4.83	3.26	5.78	1.50
ROIC (in%)	-6.24	7.95	-7.63	8.63	-2.57	4.25	-5.06	-0.37
ROE (in%)	-4.19	9.69	-1.55	11.02	-11.17	4.93	9.62	54.12
M/B-Value	2.87	2.27	3.26	2.41	1.85	1.75	1.40**	2.50
Tot. Assets (€m.)	1715.46	139.13	1260.59	163.09	2919.53	72.70	-1658.94	-0.71
Market Value (€m.)	1058.96	163.87	869.06	192.38	1561.63	58.11	-692.56	-0.62

Panel B: Corporate Governance Characteristics

	All Events		HF Events		PE Events		Diff. HF-PE	
	(1) Mean	(2) Median	(3) Mean	(4) Median	(5) Mean	(6) Median	(7) Diff. (Mean)	(8) *t*-stat
MBM[(1)]	3.06	3.00	3.12	3.00	2.92	3.00	0.20	0.94
SBM[(2)]	6.56	6.00	6.83	6.00	5.84	5.00	0.99	1.41
SBM/ MBM	2.20	1.67	2.25	1.67	2.06	1.67	0.19	1.08
% Managerial Own	11.89	0.63	13.01	1.27	8.93	0.00	4.08	1.64
%LSH1	22.80	17.67	24.19	20.20	19.13	17.35	5.06*	1.80
%LSH2	7.94	6.27	8.11	6.17	7.49	6.74	0.62	0.63
%LSH3	4.85	4.77	4.99	4.83	4.48	4.47	0.51	0.82
Sum 3LSH	35.59	34.69	37.29	34.72	31.10	29.61	6.19*	1.84
Competition—CR10	30.16	20.45	30.67	20.45	28.80	19.20	0.20	0.94
Competition—CR100	52.78	47.82	52.34	45.64	53.95	50.23	0.99	1.41
Competition—HHI	420.09	73.71	449.48	73.71	342.29	61.06	0.19	1.08

Panel C: Targets' Indices & Industries

	All Events		HF Events		PE Events	
Indices	(1) quantity	(2)	(3) quantity	(4)	(5) quantity	(6)
- DAX	4	2.15%	3	2.22%	1	1.96%
- MDAX	35	18.82%	29	21.48%	6	11.76%
- TecDAX	9	4.84%	8	5.93%	1	1.96%
- SDAX	30	16.13%	23	17.04%	7	13.73%
- None-Prime[(3)]	108	58.06%	72	53.33%	36	70.59%
Target Firms' Industry	quantity		quantity		quantity	
- Real estate	47	25.27%	29	21.48%	18	35.29%
- Transport & Communication	20	10.75%	17	12.59%	3	5.88%
- Wholesale & Retail	14	7.53%	12	8.89%	2	3.92%
- Manufacturing	102	54.8%	74	54.81%	28	54.90%
- Mining	3	1.61%	3	2.22%	0	0.00%

(1). MBM:=Management Board Members; (2) SBM:= Supervisory Board Members; (3) None Prime is a residual group comprising all exchanges except the four prime indices, HF:= hedge funds; PE:= private equity firms.

Panel B displays the target firms' corporate governance characteristics. The number of management board members is quite similar between hedge funds and private equity targets. The mean (median) number is about three members. The ratio of supervisory board members to management board members, on average, is slightly larger in the hedge fund sample (i.e., 2.25)

compared to the private equity sample (i.e., 2.06). The test of difference shows that the mean value is significantly different between hedge funds and private equity firms for the two ownership measures. The percentages of shareholdings of the largest shareholder (LSH1) and for the sum of voting rights of the three largest shareholders (Sum 3LSH) are significantly larger for the hedge fund sample than for the private equity sample.

Panel C presents the target firms' index membership as well as the corresponding industry. Hedge funds target 3 DAX, 29 MDAX, 8 TECDAX, 23 SDAX, and 72 Non-Prime firms; whereas private equity firms target 1 DAX, six MDAX, 1 TecDAX, 7 SDAX, and 36 None-Prime firms. Closer inspection of the target firms industries shows that the target firms are located in five industries, according to the classifications of the German Federal Statistical Office as described in Section 5.3: real estate, transport and communication, wholesale and retail, manufacturing, and mining. Looking at the whole sample, it is apparent that most of the target firms are located in the manufacturing industry (54%), whereas the minority is located in mining (2%).

In summary, this subsection has provided some useful insights. The target firms' financial figures show that these figures are quite similar for both the hedge fund and the private equity sample. The market-to-book value is the only financial figure that is, on average, different between both samples as suggested by the test of mean difference. Moreover, it is apparent that the investors target mostly small firms. Additionally, comparisons of the targets' corporate governance characteristics reveal that the governance characteristics are also quite similar between hedge funds and private equity targets. However, hedge funds seem to target, on average, firms with a higher concentration of ownership structure more than private equity firms do. Furthermore, the target firms can be classified in five industries whereas most of the target firms conduct business in the manufacturing industry. Lastly, while the minority of the target firms are members of four main indices (i.e., DAX, MDAX, TecDAX, and SDAX), the majority of targets are not.

6.2 EVENT STUDY ANALYSIS

This section outlines and discusses the results of my event study on the announcement of partial stock acquisitions by new institutional investors in the German stock market. Thus, it addresses the question whether and how the market reacts to the disclosure of this information. Table 6.3 shows the stock market reactions to the partial stock acquisition announcements for different event windows around the announcement day. I present the results for the events study sample (Panel A) and for the cross-sectional sample (Panel B). The event study sample contains more events (N=234) than the cross-sectional sample (N=186). (Further events were eliminated for conducting the regression analysis because of data availability and other data issues (see Subsection 5.2.3). I report cumulated average abnormal returns (Column 2) for eight different event windows (Column 1).[240] Column 3 contains the

[240] Appendix VII presents the complete results.

parametric *t*-statistics according to Brown and Warner (1985). Column 2 reports the significance level for the standard *t*-test by Brown and Warner (1985) as indicated by "*". A sensitivity analysis with respect to the results of the event study is conducted in Subsection 6.4.1.

The announcement effect for the event study sample (Panel A) and cross-sectional sample (Panel B) are both positive and significant for almost all event windows. For panel A: CAAR [-5;+5], CAAR [-10;+10], and CAAR [-2;+2] are all highly statistically significant (according to t_{CAAR}) at the 1% level and amount to 2.977%, 3.463%, and 2.162%, respectively. For Panel B: the CAAR for the same event window are also positive and highly statistically significant (according to t_{CAAR}) and amount to 3.161%, 3.577%, and 2.143%. A closer inspection of the data shows, however, that the abnormal return over the whole event window is slightly less pronounced. For the event study sample the CAAR [-20;+20] and CAAR [-10;+20] are only significant at the 10% and 5% level at a value of 2.056% and 2.476%, respectively. In the cross-sectional sample the CAAR for the [-20;+20] window are insignificant yet positive, and CAAR for the [-20;+10] and [-10;+20] windows are significant at the 5% level and amount to 2.968 and 2.462%, respectively. Overall, the valuation effect following the announcements of a partial stock acquisition of new institutional investors is positive for both the event study and the cross-sectional sample. Accordingly, the results are robust for the exclusion of further events for the purpose of conducting a cross-sectional analysis.

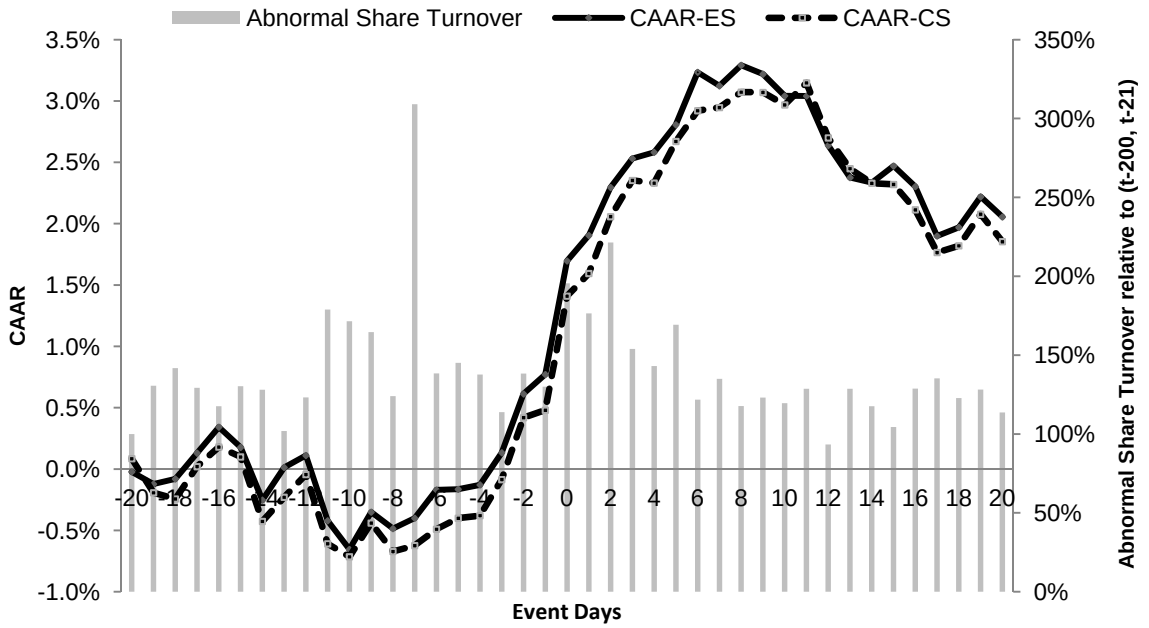
Table 6.3: Market Reaction to Partial Stock Acquisition Announcements

Panel A: CAAR for *EVENT STUDY SAMPLE* (N=234)		
(1)	(2)	(3)
Window (days)	CAAR (%)	t_{CAAR} (*)
–20;+20	2.056*	1.6778
–20;+10	3.042***	2.8552
–10;+20	2.476***	2.2879
–10;+10	3.463**	3.8582
–5;+5	2.977***	4.6909
–2;+2	2.162***	5.0536
–1;+1	1.292***	4.0057
–1;+0	1.084***	3.8977
Panel B: CAAR for *CROSS-SECTIONAL SAMPLE* (N=186)		
(1)	(2)	(3)
Window (days)	CAAR (%)	t_{CAAR} (*)
–20;+20	1.854	1.3280
–20;+10	2.968**	2.4456
–10;+20	2.462**	2.0285
–10;+10	3.577***	3.5803
–5;+5	3.161***	4.3716
–2;+2	2.143***	4.3963
–1;+1	1.175***	3.1123
–1;+0	0.930***	4.2667

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985); I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively; the complete results are presented in Appendix VII.

Figure 6.2 displays the development of the CAAR (left axis) over the event window for the event study sample (solid line) as well as the cross-sectional sample (dotted line). Moreover, *Figure 6.2* also contains the abnormal share turnover over the event window (right axis).[241]

Figure 6.2: CAAR and Abnormal Share Turnover around the Event Window



The solid and the dotted lines (left-axis) plot the CAAR of the event study sample and cross-sectional sample over the event window; the bars (right-axis) plot the cross-sectional abnormal share turnover on the respective event day as the increase (in percentage) of the share turnover on the event day compared to the mean share turnover in the estimation period running from –200 to –21; this figure is its design comparable to the one by Brav et al. (2008, p.1756).

The examination of the development of CAAR (left-axis) over the whole event window reveals interesting insights. *First*, it is apparent that the event study sample and the cross-sectional sample reveal the same pattern which confirms the previous findings that the results are comparable for both samples and thus are robust to the exclusion of further events for the cross-sectional analysis.

Second, there is a run-up of the abnormal returns prior to the announcement day starting between day –8 and day –4. This run-up may in part be an effect of leakage or event day uncertainty. Interestingly, all German studies, except for the Achleitner et al. (2010a) study, find run-ups of the abnormal returns prior to the announcement of the partial stock acquisitions. This is also consistent with the findings from US and European studies on partial stock acquisitions, which also mostly detect run-ups (see Chapter 3). Hence, my findings highlight the evidence that the market reacts to the partial stock acquisition prior to the announcement day.[242] Jarrell et al. (1988, p.53), for instance, state that not only illegal insider trading but also the legal market for information (e.g., media speculation,

[241] The abnormal share turnover (in percent) is calculated as the share turnover on a respective event day relative to the mean share turnover in the estimation period running from day –220 to –21.

[242] King (2009, p.700) states that the literature commonly distinguishes between two hypotheses to explain pre-bid price run-ups (prior to takeovers) namely the market anticipation hypothesis of Jensen and Ruback (1983) and an alternative hypothesis by Keown and Pinkerton (1981) where the run-up explained by insider trading prior to the takeover.

bidder's toehold transaction and whether the bid is hostile or friendly) can explain the run-up of abnormal returns prior to announcement of transactions. Furthermore, another reason for run-ups in my data could be the difficulty of finding the "true" announcement day. This is a problem of event date uncertainty which accompanies event study methodology in general (see for more information Section 5.2).

Third, there is some kind of counter reaction to the initial response to the announcement. This pattern could suggest that the market reaction is associated with an overreaction and/or a temporary price impact. Closer inspection of *Figure 6.2* reveals that for the event study sample (cross-sectional sample)*, CAAR* rise until day +8 (+10), then turn around and bounce back slightly. In particular the CAAR for event study sample peak at CAAR [-20;+8] at a value of 3.29% and peak at CAAR [-20;+11] at a value of 3.15% for the cross-sectional sample. Thereafter, CAAR decline slightly and then recover again. CAAR [-20;+20] for event study sample and cross-sectional sample amount to 2.06% and 1.85%, respectively. Accordingly, while at first glimpse the pattern of the abnormal returns might suggest that there is some kind of an overreaction to the announcement, the excess returns do not get close to zero but rather stabilize at a positive level at around 2%. Hence, the positive abnormal return is not because of a market overreaction and temporary price impact—if this were the case, the temporarily positive market reactions would be because of buying pressure or herding effects and would reflect trading effect rather than information effect because of expected changes in the fundamental value of the firm. Thus, if market overreaction and temporary price impact drive CAAR, there would be a reversal in the market reaction driving down the abnormal returns close to zero over the whole event window (Brav et al., 2008). This is, however, not the case.

Fourth, despite the observed backlash, the CAAR stay significantly positive around the event window; thus, the graph highlights the positive stock market reaction to the announcement of the partial stock acquisition—the market seems to expect that the new institutional investors will use their potential and will create value.

Fifth, the inspection of abnormal share turnover in *Figure 6.2* (right-axis) also reveals interesting insights. The share turnover peaks at day –7 and not at the announcement day. According to §21 WpHG, investors have to publish their holding of voting rights exceeding a certain threshold no later than 7 trading days (16 calendar days before January 17th, 2007). Hence, additional buying of the new institutional investors before the announcement day could explain this peak prior to the initial announcement. This finding is consistent with the findings of Brav et al. (2008) who also detect a peak in the share turnover prior to the announcement day in the US stock market. Brav et al. (2008, pp.1756-1757) put forward two alternative explanations which also explain this pattern: the *first* explanation is that there is buying pressure from several other new institutional investors ("wolf pack" investing) who buy into the target firm without formally having coordinated with one another; *second*, there is engagement of "tipping" by hedge funds, which means that they reveal information to a small group of other investors in exchange of other favors in return.

Overall, my findings of a positive and significant valuation effect in the event window are consistent with other German studies on partial stock acquisition announcements.[243] On closer inspection, it is apparent that the magnitude of the announcement effect found in my event study is comparable to the abnormal returns reported by Mietzner and Schweizer (2008), Bessler et al. (2008), and Stadler (2010). The valuation effects, however, differ dramatically from the findings of Achleitner et al. (2010a) and Dress and Schiereck (2008), who find CAAR to be 5.5 and 2.8 times, respectively, the CAAR reported in my study. The mean announcement effect calculated across all studies is 5.5%. (see Section 3.1). Recall that for the US and the other European studies, the comparable mean announcement effect across all studies is 5.6% and 5.3%, respectively (see Sections 3.2 and 3.3). In my analysis the comparable CAAR are 3.16%.

Achleitner et al. (2010a) find CAAR to be 11.77% and 14.95% in the [–2;+2] and [–20;+20] windows, respectively. There are at least *three explanations* for this difference in terms of magnitude to my findings. *First*, they focus on major block acquisitions of at least 25% voting rights. *Second*, in almost 40% of the transactions the target is eventually taken over. *Third,* the focus is on private equity firms only. Overall, all three points suggests that these acquirers are buyout specialists. Accordingly, most of the premium is likely to be explained by a takeover premium.

Dress and Schiereck (2008) find CAAR (for all transactions) to be 8.7% and 10.7% in the [-5;+5] and [-20;+20] windows, respectively. The difference is 2.8 times and 5.8 times the equivalent CAAR reported in my study. *Two explanations* could drive the differences. *First*, they focus on stock acquisitions between 5% and 49.9% and thus focus on majority acquisitions (remember that one has to submit a mandatory takeover bid if an investor holds more than 30% of voting rights). *Second*, they focus on new block formation and thus do not consider follow-up acquisitions. This procedure eliminates transactions where the acquirer already holds a stake in the target firm. Follow-up transactions might come with less pronounced announcement returns. One possible explanation is related to the law of diminishing returns. Marginal benefits through shareholder activism might decrease when the active shareholder already holds a stake in the target. This means that the announcement effect of a partial stock acquisition, where the acquirer already holds a stake, might be smaller in magnitude than a partial acquisition in which the acquirer makes the initial acquisition.

In summary my data confirm positive stock market responses to announcements of a partial stock acquisition. I find no support for the raiding hypothesis and accordingly reject the hypothesis that the announcement effect is negative, which implies that the stock market expects that the partial acquirer will decrease stockholder's wealth. On the contrary the stock market expects a positive influence of the partial acquirers according to my data. This simultaneously provides evidence that the stock market is semi-strong efficient because the new information of a partial stock acquisition is immediately impounded in the stock price. Furthermore, the results are consistent in the event study sample and cross-sectional sample. The robustness of these results is tested in Section 6.4.

[243] Meyer and Prilmeier (2006) are not mentioned because they look at stock elimination announcements.

Nevertheless, the question of what the drivers are behind the positive stock market response remains open. There are at least three coexisting hypotheses namely the corporate governance enhancement hypothesis, the anticipated takeover hypothesis, and the undervaluation hypothesis. To dig deeper into the nature of the determinants of the announcement effect, I present the results of the multivariate analysis in the next section (Section 6.3).

6.3 CROSS-SECTIONAL ANALYSIS

This section focuses on the results of the multivariate analysis. The purpose is to shed light onto the question of whether new institutional investors utilize their potential to create value in public corporations by enhancing the respective corporate governance system. Therefore, the cross-sectional variation of the abnormal returns following the partial stock acquisitions announcement is analyzed. In the previous section the results of my event study analysis are unfolded based on a novel and hand-collected dataset covering the investigation period from 2002 to 2008. There, I find a positive announcement effect following the partial stock acquisitions of new institutional investors, which is in accord with the literature (see Sections 3.1 to 3.3). The literature, however, has not found a clear answer concerning the nature of the determinants of this positive announcement effect. I address this weakness by using five pairs of models based on my empirical hypotheses (H_{GCE}*1-11,* H_{AT}*12,* H_{U}*13,* H_{cond}*14-25)* developed in Subsection 4.2.2 and formally specified in Section 4.3. The usual pitfall in examining the sources of the announcement of partial stock acquisitions is that there are coexisting hypotheses explaining this effect, and these are difficult to disentangle. So far the literature, especially the German one, has failed to come up with a convincing idea of how to tackle this problem (see Chapter 3).

My results suggest that partial stock acquisitions by new institutional investors, indeed, create value, which can be portrayed in a story. There will be five scenes in this story, and the leading part will be performed by the holding period. The five scenes are five econometrical models (see Subsections 6.3.1 to 6.3.5). The holding period as the leading actor is an innovative tool, which allows me to disentangle the coexisting hypotheses and helps me to find supporting results for my corporate governance enhancement story. The beginning of the story is that the three opening scenes (Models 1 to 3) show that the corporate governance enhancement and the undervaluation hypothesis both seem to explain the announcement effect. This is the common culprit, which spoils the story and makes it hard to tell if there are any heroes in this tale. In fact, the real drivers of the announcement effect seem to be masked by coexisting explanations, which makes it difficult to allocate the influence of the respective hypothesis to the announcement effect. The holding period of the investment, which is introduced in scene four (Model 4), raises hopes in solving this miserable situation. However, it is not until the closing scene (Model 5) that the leading actor (holding period) helps to control the culprit and subsequently unmasks the drivers of the announcement effect. This in turn allows me to provide

evidence that the expected corporate governance enhancement significantly influences the stock market reaction following the announcement of partial stock acquisitions. Consequently, the findings suggest that expected corporate governance enhancements by new institutional investors are at least one hero in this story.

This section starts by investigating the results of *Model 1* (*PARTIAL ACQUIRER CHARACTERISTICS MODEL*), which is the simplest specification (6.3.1). This model investigates the relationship between announcement effect and partial acquirer characteristics. Then, the results of *Model 2* (*CORPORATE GOVERNANCE MODEL*) are discussed (6.3.2). This specification links partial acquirer characteristics as well as existing targets' corporate governance characteristics to the stock market reaction. Thereby, the relationship between the announcement effect and the corporate governance enhancement hypothesis is examined. After that, *Model 3* (*ANNOUNCEMENT EFFECT MODEL*) is presented (6.3.3). This model encompasses not only corporate governance enhancement variables but also variables linked to the coexisting hypotheses explaining the announcement effect, namely the undervaluation and anticipated takeover hypothesis. In the next step, the results of *Model 4* (*HOLDING PERIOD MODEL*) are outlined (6.3.4). This model brings all explanatory variables together whereby the only new variable in comparison to the previous model is the holding period variable. Afterwards, *Model 5 (INTERACTION MODEL)*, in addition to model 4, encompasses interaction between HPERIOD and the other explanatory variables to better understand the workings of the announcement effect (6.3.5). Subsection 6.4.2 presents the results of the sensitivity analysis of the cross-sectional models. The sensitivity analysis of my results is presented in Subsection 6.4.2.

6.3.1 Partial Acquirer Model

The starting point of my analysis is the *PARTIAL ACQUIRER MODEL*. This is the simplest model and examines the influence of the characteristics of the partial acquirer and the transaction on the announcement effect. *Table 6.4* reports the results of Models 1.A and 1.B.[244] In particular, Model 1.A (Column 1) regresses CAR [-5;+5] against three variables: PE, TOEHOLD, and BLOCK. The predictions for the coefficients are based on the hypotheses ($H_{CGE}1$ to $H_{CGE}3$) of the framework derived in Subsection 4.2.2. Model 1.B. (Column 2) is the control model that includes control variables, in addition to the other explanatory variables, to account for unobserved heterogeneity and other factors that could influence the results but are not of central interest (e.g., size effect, volume effect, time fixed effects, and industry fixed effects).

Model 1.A offers only little support for the idea that partial acquirer characteristics are crucial for explaining the announcement effect. The only variable that is significant is BLOCK, and the model shows that CAR rise by 0.306 per unit increase in size of the shareholding held post-transaction

[244] For all regression models the dependent variable is CAR [-5, +5]. A large event window is necessary especially because of possible reporting delays in the BaFin sample. This problem is discussed in Section 5 and by Mietzner and Schweizer (Mietzner and Schweizer, 2008, pp.16-17).

(BLOCK). The coefficient is positive as hypothesized and statistically significant at the 10% level. The reasoning is that the announcement effect increases with the size of BLOCK because the incentive and power of the partial acquirer to redistribute control rights, and thus enhance firm value, is positively related to its percentage of ownership. This finding is consistent with the theoretical models that suggest large shareholders are more likely to engage in shareholder activism because the benefits of monitoring are more likely to exceed the costs and thus large shareholders could mitigate the free-rider problem in public corporations (see Subsection 4.2.2). Moreover, the positive correlation between an increase in block size and the cost of selling the block (liquidity reasons) could also increase the incentive to engage in shareholder activism (Maug, 1998). Finally, an increase in block size may also increase the likelihood of a subsequent takeover (Hirshleifer and Titman, 1990; Shleifer and Vishny, 1986). Empirical support for this proposition comes, for instance, from Meyer and Prilmeier (2006) and Dress and Schiereck (2008). Interestingly, Achleitner et al. (2010a),[245] Bessler et al. (2008), and Mietzner and Schweizer (2008) do not account for the block size in their analysis of the cross-sectional variation of abnormal returns even though it is usually considered to be an important driver of the announcement effect.

The coefficient for PE is positive but statistically insignificant and amounts to a value of 3.488. The empirical framework suggested a positive relationship. The sign is positive, however, it is not statistically significant, which implies that the identity of the acquirer does not materially affect the stock market response. Thus, the market does not react differently in a significant way, a connection which I have discussed in the empirical framework (see Subsection 4.2.2). The TOEHOLD coefficient is negative but insignificant and is –1.119. The overall significance of the estimated regression as measured by the *F*-test is statistically significant at the 10% level and the adjusted R^2 amount to 0.044. This model is only weakly significant at the 10% level, which may also indicate that crucial variables are missing in the model.

Model 1.B (Column 2) is the control model and is identical to the previous model except for the introduction of the control variables SIZE, TRADING VOLUME, TIME, and INDUSTRY. Introducing the control variables has an effect on the coefficient of the explanatory variables. The coefficient for BLOCK reduces to 0.195 and becomes statistically insignificant. This suggests that the significance of the BLOCK coefficient in Model 1.A is because of an omitted variable bias. There is an upward bias in the coefficient BLOCK because it bears the effects of omitted variables. Consequently, this finding underlines the importance of control variables. Nevertheless, collectively the model influences the announcement effect indicated by a statistically and highly significant *F* value of 2.5 and an adjusted R^2 of 0.155. The increase in overall significance, in comparison to Model 1.A, also highlights that the inclusion of control variables is important in increasing the explanatory power of the model.

[245] Achleitner et al. (2010a, p.14) use a control variable "majority," which is a dummy variable taking the value "1" if the investor bought a majority stake and "0" otherwise.

Table 6.4: Partial Acquirer Model

Variable	(1) **Model 1.A**		(2) **Model 1.B**	
Dependent Variable: CAR [-5;+5]	Coefficient	$t_{statistic}$	Coefficient.	$t_{statistic}$
- constant	-0.138	-0.090	13.667	1.500
1. Corporate Governance Enhancement Hypothesis				
A. Partial Acquirer Characteristics				
- PE	3.488	1.440	0.913	0.400
- TOEHOLD	-1.119	-0.530	0.063	0.030
- BLOCK	0.306*	1.660	0.195	1.080
Control Variables	No		Yes	
No. of Observations	186		186	
F-test	2.42*		2.5***	
Adj. R^2	0.044		0.155	

The dependent variable is CAR [–5;+5]; All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance;[246] (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm; (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold; (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction; Control Variables: in the control model I control for size effect (SIZE), trading volume effect (VOLUME) industry-fixed effects (INDUSTRY), and time-fixed effects (TIME). * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

Comparing my results to the literature at least *three findings* are especially noteworthy.

First, the analysis of the cross-sectional variation reveals that the market perception regarding the announcement effect does not significantly differ for private equity firms and hedge funds. One way of interpreting this finding is that both types of investors have a similar investment style; thus, the market does not differentiate between them. This finding is consistent with the evidence provided in Subsection 6.1.1, which points out that both investors have comparable investment styles and patterns. Alternatively, the reason behind this finding could be that the type of the large shareholders and the intention, goals, or reputation of the investors matter. The investors' intention can vary among similar types of investors (e.g., hedge funds or private equity firms); thus, the regression is unable to detect a significant relationship. This is consistent with the findings in the German stock market reported by Stadler (2010) and Bessler et al. (2008), who find that the intention (e.g., activism or reputation) seems to explain cross-sectional variation. For the US stock market, Brav et al. (2008) find that the type of hedge fund activism drives the stock market reaction, and Clifford (2008) finds that active hedge funds have stronger impact in the short- and long-term as compared to passive hedge funds. At this point, it might be important to indicate again that there is a crucial regulatory difference between the US and the German stock market regulation with regard to the disclosure of holding of substantial voting rights. For instance, in Germany investors do not disclose their intention in the investigation period when reporting with respect to §§21 WpHG in comparison to Schedule 13D filing in the US (see Subsection 5.1.1). Hence, German studies cannot directly use the intention of the investors as many US studies do.

[246] I use the command "robust" for the multiple regression analysis. Robust is a programmer's command that computes a robust variance estimator based on a varlist of equation-level scores and a covariance matrix. The command "robust" only affects the variances and the covariances, and the coefficients stay the same, which means that model sum of squares, residual sum of squares and degrees of freedom remain the same. However, the command "robust" affects the F-test because it takes into account the new variances and covariances calculated under the programmer's command "robust."

Second, I do not find convincing evidence that partial acquirer characteristics matter. While the coefficient for block size is positive and significant at conventional levels in Model 1.A, it is statistically insignificant in Model 1.B. Hence, I only find weak evidence for various theoretical models that posit such a relationship (see Subsections 2.2.4 and 4.2.2). This might be a surprising find that my data suggest that BLOCK does not significantly affect the announcement effect. One way of explaining this finding is that since I focus on minority block acquisitions between 3% and 30%, BLOCK is only a bad indicator for the incentive, power, and intention of the new institutional investor. If this were true, BLOCK would not be able to explain much of the announcement effects' cross-sectional variation. Keep in mind that in my sample, hedge funds and private equity firms hold a mean stake of voting rights post-transaction of only 6.5% and 13.8%, respectively (see Subsection 6.1.1). Hence, this indicates that one might need another indicator for examining (minority) partial stock acquisitions to explain the cross-sectional variation of abnormal returns.

Third, one crucial upshot from Model 1 (even though unsurprising) is that the use of control variables is elementary to make a sound and reliable econometrical analysis of the variation of abnormal returns. Accounting for omitted variables bias through the inclusion of control variables helps to control for the bias of regression coefficients because of firm/event heterogeneity (size, trading volume, industry, and year). Closer inspection of the German benchmark studies reveals that these studies use control variables insufficiently. Not one of the German studies controls jointly for size, trading volume, industry, and time-fixed effects even though these control variables are standard in cross-sectional analysis to account for firm heterogeneity. From econometrical perspective, this procedure is quite alarming.

In conclusion, the *PARTIAL ACQUIRER MODEL* is the first stage in my examination of the determinants for the announcement effect of partial stock acquisitions and reveals four key findings. *First*, partial acquirer characteristics are less important than initially expected by the empirical framework and as found by other studies. One way to interpret this finding is that the intention of the large shareholder is an important factor besides the type of the shareholders. While in Germany investors do not have to disclose their intention when reporting block acquisitions (§21 WpHG), in the US they must (Schedule 13D). This could indicate that in German studies one has to use another type of indicator to measure the intention of the shareholder to understand the stock market reaction. *Second*, I find that the variable for the size of the partial acquirer (BLOCK) does influence the announcement effect as predicted by the empirical framework and is in line with other empirical findings. One should be cautious, however, with the interpretation of this finding. On the one hand, the effect does not appear to be overwhelmingly statistically significant. On the other hand, taking into account control variables even diminishes the significance of this variable. *Third*, the results suggest that control variables have significant impact on the explanatory variables. The coefficient BLOCK becomes insignificant after introducing control variables. This implies, not surprisingly, that control

variables are important to ensure a proper and valid econometrical analysis. This is a lesson that the German benchmark studies do not seem to consider appropriately.

6.3.2 Corporate Governance Model

The second step is the *CORPORATE GOVERNANCE MODEL* (Model 2). This specification is an extension of the previous model and encompasses, in addition to the PAC variables, further variables measuring the corporate governance structure in place in the target company. *Table 6.5* displays the results from the regressions (Model 2.A-B.) Particularly, *Model 2* uses three kinds of explanatory variables namely PAC (from Model 1), TOC (CONCENTRATION, CONTROLLING, and INSTITUTIONAL), and OTCGC (MOWNERSHIP, SBOARD, COMPETITION, and DEBT). Columns 1 and 2 report the results for Model 2.A without control variables and Model 2.B with control variables. The predictions for the coefficients of the explanatory variables are based on the hypotheses ($H_{CGE}1$ to $H_{CGE}3$ and $H_{CGE}5$ to $H_{CGE}11$) of the framework derived in Subsection 4.2.2.

The findings of *Model 2.A* suggest that the expectation about corporate governance enhancement is a potential driver behind the ascent of the share price following partial stock acquisitions. In short, the regression analysis finds that one coefficient (BLOCK) of Partial Acquirer Characteristics, all coefficients (CONCETRATION, CONTROLLING, and INSTITUTIONAL) of Target Ownership Characteristics variables, and no coefficient of Other Target Corporate Governance Characteristics variables are statistically significant at the conventional levels.

Turning to PAC variables reveals that these findings are in line with the results from Model 1. The coefficients for PE and TOEHOLD are insignificant at a value of 3.309 and –0.588, respectively. The variable BLOCK is again statistically significant at the 10% level and amounts to 0.354. This is in line with the predictions from the empirical framework (see Subsection 4.2.2) and the same interpretation as in Model 1 applies.

I further note that the variables for the target's ownership structure seem to be important for the stock market response to partial stock acquisitions. The coefficient CONCENTRATION is significant at the 5% level, and coefficient indicates that a one unit change in CONCENTRATION generates a –12.106 unit change in CAR. This negative correlation is as hypothesized as discussed in my empirical framework (see Subsection 4.2.2). The reasoning is that a higher concentration of ownership principally means a more effective corporate governance system (Shleifer and Vishny, 1986; Shleifer and Vishny, 1997). This, in turn, leaves less leeway for the new institutional investors to create value through better monitoring and control by reducing agency costs. The data provides evidence for this line of argument.

In the framework, however, I also hypothesized that there is not a simple linear relationship between concentration and announcement effect; instead, if the large shareholder gets too much power in terms of control rights the lack of countervailing power might be detrimental to a shareholder's wealth. In theory there are also costs of large shareholders (Shleifer and Vishny, 1997) because these

investors are motivated by shared benefits and private benefits of control (Holderness, 2003). While shared benefits accrue to all shareholders equally, private benefits accrue to the large shareholder only. Private benefits need not occur, but if they do, then they might come at the costs of the remaining shareholders which lead to a second agency problem (Subsection 2.2.4). This argument is supported by the data because the coefficient CONTROLLING is statistically significant at the 5% level. The coefficient suggests that CAR increases by 5.709 units if a firm has a controlling shareholder (dummy equals 1) as compared to having no controlling shareholder (dummy equals 0). This indicates that the announcement effect is significantly higher in target firms with controlling shareholders. One way to think about this result is that new institutional investors add to the effectivity of the corporate governance system in firms with controlling shareholders because they act as a kind of countervailing power to the existing largest shareholder. This finding is consistent with that of Achleitner et al. (2010a) who also find evidence that tensions may occur between the largest shareholder and remaining shareholders (Agency Problem II) as opposed to tension occurring only between management and shareholders (Agency Problem I).

The coefficient INSTITUTIONAL amounts to –0.208 and is also significant at the 5% level. The coefficient indicates that the CAR change –0.21 per unit increase in INSTITUTIONAL. The sign is consistent with the predictions of the empirical framework. The line of reasoning is that a higher degree of institutional shareholdings goes along with a more effective corporate governance structure. Empirical support that institutional investors mitigate agency costs between managers and owners is given, for instance, by Chung et al. (2002) and Hartzell and Starks (2003). However, various studies cast doubt about the effectiveness of institutional investors as monitors because their activism is afflicted with structural and regulatory barriers (Black, 1990; Kahan and Rock, 2007). Even if some commentators in the literature argue that institutional investors are passive, one could argue that these investors still are likely to reduce asymmetric information distribution in the target company (Zhang et al., 2008). Additionally, institutional investors could discipline management and thus reduce agency costs through a credible threat of "exit" rather than "voice" (Admati and Pfleiderer, 2009). This in turn would strengthen the corporate governance system. The data supports the idea that the degree of institutional shareholdings is positively correlated with the announcement effect.

The findings with respect to the target's ownership structure are generally consistent with the findings of the German benchmark studies. Overall, these studies find that target firms' ownership structure prior to the transaction does matter for the announcement effect. Achleitner et al. (2010a) report a negative relationship between the stake of the first and second largest shareholders in the target firm and the announcement effect. Mietzner and Schweizer (2008) find that the target firm's ownership structure does explain cross-sectional variation in their private equity sample but not in their hedge fund sample. Dress and Schiereck (2008) find only modest evidence of a cross-sectional relationship between a target firm's ownership variables and abnormal returns. Stadler (2010) does not find a relationship between abnormal returns and institutional ownership but provides evidence that

family ownership in the target firm has a negative impact on the valuation effect at least in the long-run regression analysis. Hence, Stadler (2010, pp.162-163) concludes that the existing target firm's ownership structure plays a crucial role for the market response to shareholder activism by hedge funds. Meyer and Prilmeier (2006) find that the market reacts positively to block elimination by banks and that this effect is more pronounced if non-financial blockholders are present in the target firm. The preliminary findings in my Model 2.A provide evidence that the target firms ownership structure does matter for the magnitude of the announcement effect and helps to explain cross-sectional variation.

The other target's corporate governance characteristics seem to be less important for the explanation of the announcement effect. I find that MOWNERSHIP, SBOARD, COMPETITION, and DEBT are all statistically insignificant and amount to 0.045, 0.919, 0.000, and –0.001, respectively. The *F* statistic of Model 2.A is significant at the 5% level and adjusted R^2 is 0.076. Hence, this model has more explanatory power than Model 1.A.

The results of *Model 2.B* suggest that the inclusion of control variables, as in the previous model, have a decisive impact on the meaningfulness of the coefficients. It is a striking find that there is no significant coefficient in the control model. All four variables, previously significant, decrease in magnitude, eventually becoming insignificant. The coefficient for BLOCK reduces from 0.354 to 0.239, and the *t*-value in the control model is 1.250, resulting in its being statistically insignificant as well. The same applies to the other three variables namely CONCENTRATION, CONTROLLING, and INSTITUITONAL which decrease in magnitude and eventually becoming statistically insignificant with values at –7.304, 3.750, and –0.131, respectively. This is evidence that the coefficients in Model 2.A are misleading because of omitted variable bias, which overstates the true magnitude of the coefficients. This reinforces the reasoning from Model 1 that the inclusion of control variables is important to ensure valid results. The *F* value and adjusted R^2 both increase to 2.51 and 0.146, respectively. This again confirms that the model has more explanatory power if considering control variables.

Table 6.5: Corporate Governance Model

Variable	(1) **Model 2.A**		(2) **Model 2.B**	
Dependent Variable: CAR [-5;+5]	Coefficient	$t_{statistic}$	Coefficient	$t_{statistic}$
- constant	4.382	1.000	11.544	1.380
1. Corporate Governance Enhancement Hypothesis				
A. Partial Acquirer Characteristics				
- PE	3.309	1.290	1.094	0.440
- Toehold	-0.588	-0.280	0.391	0.180
- Block	0.354**	1.980	0.239	1.250
B. Target Ownership Characteristics				
- Concentration	-12.106**	-2.110	-7.304	-1.310
- Controlling	5.709**	2.130	3.750	1.440
- Institutional	-0.208**	-2.380	-0.131	-1.560
C. Other Target Corporate Governance Characteristics				
- MOwnership	0.045	0.950	0.022	0.440
- SBoard	0.919	1.140	0.838	1.030
- Competition	0.000	0.400	0.001	1.000
- Debt	-0.001	-0.220	-0.001	-0.260
Control Variables	NO		YES	
No. of Observations	186		186	
F-test	2.09**		2.51***	
Adj. R2	*0.076*		*0.146*	

The dependent variable is CAR [–5;+5]. All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. Control Variables: in the control model I control for size effect (SIZE) defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

Compared to the literature the same remarks as for Model 1 apply likewise: *first*, there is no significant difference between the announcement effects for private equity and for hedge fund investors; *second*, partial acquirer characteristics are less important than expected; and, *third*, the inclusion of control variables is important for a sound and valid reliable econometrical analysis.

In addition to these points, another fact stands out. Model 2.A suggests that the ownership structure has the potential to explain cross-sectional variation of abnormal returns, which is consistent with some of the German benchmark studies. Considering control variables wipes out this relationship and in Model 2.B none of the ownership variables is significant. One way of explaining this finding is that the cross-sectional relation detected in Model 2.A is driven simply by the omitted variables bias and by the notion that a relationship does not exist between the announcement of partial stock acquisition announcements and the valuation effect. Another way to look at this is to say that Model 2.A is misspecified in a way that important variables are not included in the model and that the inclusion of other

theoretically relevant variables make the model more powerful and may reveal that the ownership structure does really matter—but this is merely hypothetical reasoning. The next model, however, may reveal further insights when I further add theoretical relevant explanatory variables.

In summary, the findings of the *CORPORATE GOVERNANCE MODEL* tentatively suggest that the existing corporate governance structure of the target company matters with respect to the stock market response. In particular, the ownership structure of the target company seems to influence the announcement effect, which is consistent with some of the findings reported by the German benchmark studies on announcement of partial stock acquisitions. Four key findings stand out. *First*, the block size of the partial acquirer is significant at least in model 2.A, which confirms the findings of Model 1.A. *Second*, interestingly all variables for the target ownership characteristics are significant and in accord with the prediction of the empirical framework when observing Model A. On the one hand, the data suggests that there is a negative relationship between both concentration of ownership and institutional shareholdings with the announcement effect. On the other hand, the opposite is true for the presence of a controlling shareholder where I find a positive relationship between the dummy measuring the presence of a controlling shareholder in the target firm and the announcement effect. The statistical magnitude of these effects detected in Model 1.A, however, becomes insignificant after introducing control variables. Nevertheless, it is an interesting find and requires further investigation. *Third*, the explanatory power of the other target corporate governance characteristics is meager, and all variables are statistically insignificant. *Fourth*, the control variables are important and have a crucial impact on the significance of the explanatory variables. This finding is in line with the evidence from Model 1. The next section will introduce further hypotheses explaining the announcement effect.

6.3.3 Announcement Effect Model

In the third step, I consider the *ANNOUNCEMENT EFFECT MODEL* (Model 3), with its results portrayed in *Table 6.6*. This model is a modification of the previous model in a way that it includes, in addition to the corporate enhancement hypothesis, the other two hypotheses—the undervaluation hypothesis and the anticipated takeover hypothesis—explaining the announcement effect. The dependent variable is regressed against PAC (PE, TEOHOLD and BLOCK), TOC (CONCENTRATION, CONTROLLING, and INSTITUTIONAL), and OTCGC (MOWNERSHIP, SBOARD, COMPETITION, and DEBT) from the previous model and new variables explicitly accounting for undervaluation (UV) and anticipated takeover hypothesis (ATH). While Model 3.A (Column 1) contains no control variables, Model 3.B (Column 2) includes control variables. The predictions for the coefficients of the explanatory variables are based on the framework derived in Subsection 4.2.2 ($H_{CGE}1$ to $H_{CGE}3$, $H_{CGE}5$ to $H_{CGE}11$, $H_{AT}12$ and $H_{U}12$).

Model 3.A reveals interesting insights. At first glance it is obvious that the coefficients for the corporate governance enhancement hypothesis that are significant in the previous model (Model 2.A) are also statistically significant in this model. This is an interesting result because the data give

evidence that corporate governance enhancement is still meaningful when controlling for the other two coexisting variables. Closer inspection of the results shows that the coefficient for BLOCK slightly reduces to 0.317 but stays statistically significant at the 10% level. This implies that the significance decreases from the 5% to the 10% level of the conventional level compared to model 2.A. However, with regard to the significance of the coefficient of BLOCK, the same interpretation as for Models 1 and 2 is relevant. The other PAC coefficients are insignificant, and the coefficient for PE and TOEHOLD amount to 2.195 and d –0.411, respectively.

The findings of Model 3.A provide further support that the existing ownership structure is important in association with corporate governance enhancement opportunities. All three ownership variables are significant at least at the 5% level. The coefficients for CONCENTRATION, CONTROLLING, and INSTITUTIONAL amount to –13.817, 6.664, and –0.232, respectively. The first two coefficients are significant at the 5% level whereas the coefficient for INSTITUTIONAL is highly significant at the 1% level. These results are in line with the framework and thus further support the idea that new institutional investors as partial acquirers have the potential to generate shareholder value through monitoring and control. The same interpretations and remarks to these variables as in Subsection 6.3.2 in Model 2 apply.

Not surprisingly, I find that the undervaluation variable is statistically significant at the 5% level. The coefficient is negative and thus in line with the prediction of the framework which implies that the degree of undervaluation (as measured by market-to-book value) is negative related to the stock market reaction. The coefficient indicates that the announcement effect decreases by –0.736 per unit increase in UNDERVALUATION. This suggests that indeed the announcement effect is driven not only by possible corporate governance enhancement but also by the undervaluation hypothesis. This is in accord with the finding of the literature and plagues the examination of the announcement effect because three hypotheses are not mutually exclusive. One way to think about this finding that UV is significant is that new institutional investors either have superior stock picking abilities or have private information which helps them find undervalued targets, which is consistent with the findings of Achleitner et al. (2010a), Dress and Schiereck (2008), and Mietzner and Schweizer (2008) who confirm the negative relationship between valuation level and announcement effect.[247] Comparable studies in the US and Europe also find that the undervaluation hypothesis plays a crucial role in explaining the valuation effect—Dai (2007) reports evidence for the US stock market and Croci (2007) for the European stock market.

The coefficient for the anticipated takeover variable is insignificant and the value is –0.846. Hence, a subsequent takeover bid (see Subsection 5.3.3) has no significant impact on the announcement effect. One way of interpreting this finding is that an insignificant coefficient of the TO variable indicates that the market for corporate control is weak in Germany and does not exercise a strong monitoring and control function. This is consistent with the literature of the market for corporate

[247] While Dress and Schiereck (2008) and Mietzner and Schweizer (2008) use the market-to-book ratio to measure undervaluation, Achleitner et al. (2010a) use a stock market price measure.

control that finds that the German corporate control market is relatively weak compared to the UK or US market for corporate control (Franks and Mayer, 1998; Goergen et al., 2004; Goergen et al., 2008).[248] Stadler (2010) finds in his analysis on shareholder activism of hedge funds, however, that the announcement effect of partial stock acquisitions is positively influenced by takeover rumors. While Akhigbe et al. (2007) and Greenwood and Schor (2009) find evidence supporting the takeover hypothesis as a main driver for the announcement effect for the US stock market, Banerjee et al. (1997) find similar findings for the French stock market.

Overall, model 3.A is significant at the 5% level as suggested by the *F*-test and adjusted R^2 amounts 0.149, respectively. Hence, the adjusted R^2 as well as the *F*-test increase in comparison to Model 2.A, suggesting that the inclusion of additional variables enhance the explanatory power of the model.

Model 3.B is the control model and at first glimpse, it is apparent that four out of five coefficients significant in Model 3.A also stay significant although diminishing in magnitude. The BLOCK coefficient becomes insignificant and decreases to 0.216. This is the same pattern as in the previous models, and the interpretation is applicable. Additionally the coefficients for the target ownership characteristics stay statistically meaningful for all variables even if only at the 10% significance level. The CONCENTRATION coefficient lessens by about four units to –9.703. The two other coefficients, namely CONTROLLING and INSTITUTIONAL, reduce to 4.924 and –0.154, respectively. All coefficients are in line with the predictions of the empirical framework. This is a striking find and suggests that, according to Model 3, the ownership structure has an important impact on the valuation effect of partial stock acquisitions. The UV coefficient falls to –0.819 but stays significant at the 5% level. This again underlines the importance of the undervaluation hypothesis as a potential driver for the announcement effect of partial stock acquisitions. The *F*-test is significant at the 1% level and adjusted R^2 increases to 0.218. The overall fit of the model enhances as measured by adjusted R^2; thus, the control variables add to the explanatory power.

[248] See literature review in Chapter 3.

Table 6.6: Announcement Effect Model

Variable	(1) **Model 3.A**		(2) **Model 3.B**	
Dependent Variable: CAR [-5;+5] in %	Coefficient	$t_{statistic}$	Coefficient	$t_{statistic}$
- constant	9.883**	2.080	-5.690**	-0.820
1. Corporate Governance Enhancement Hypothesis				
A. Partial Acquirer Characteristics				
- PE	2.195	0.870	0.034	0.010
- Toehold	-0.411	-0.190	0.412	0.180
- Block	0.317*	1.700	0.216	1.140
B. Target Ownership Characteristics				
- Concentration	-13.817**	-2.340	-9.703*	-1.700
- Controlling	6.664**	2.500	4.924*	1.860
- Institutional	-0.232***	-2.610	-0.154*	-1.730
C. Other Target Corporate Governance Characteristics				
- M-Ownership	0.010	0.210	-0.014	-0.250
- S-Board	0.430	0.510	0.432	0.530
- Competition	0.000	0.290	0.001	0.770
- Debt	0.003	1.150	0.003	1.050
2. Other Hypotheses				
- TO	-1.562	-0.570	-2.457	-0.860
- UV	-0.846**	-2.590	-0.819**	-2.510
Control Variables	NO		YES	
No. of Observations	186		186	
F-test	2.23**		2.43***	
Adj. R^2	0.149		0.218	

The dependent variable is CAR [–5;+5]. All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g. mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

When comparing the results of *Table 6.6* to the literature, similar comments as in Model 1 and 2 apply, whereas *three additional comments* may be worthwhile pointing out.

First, Model 3 shows that ownership structure is a main driver for the announcement effect. Contrary to the findings in Models 1 and 2, the relationship found for the ownership structure and announcement effect is robust to the inclusion of control variables. Even though the coefficients of the variables measuring the target firm's ownership structure diminish in magnitude, they remain statistically significant at the conventional level. This is a valuable find and suggests that the ownership structure, and subsequently large shareholder, have an impact on firm value.

Second, consistent with the findings of other studies that the German market for corporate control at most exercises a weak monitoring or control function; I do not find a relationship between the takeover variable and CAR. This is evidence for the findings that the German market for corporate control does not play the same role as it plays in the US and UK stock market (see Section 3.5).

Third, in line with Achleitner et al. (2010a), Dress and Schiereck (2008), and Mietzner and Schweizer (2008) for Germany, Dai (2007) for US, and Croci (2007) for the European stock market, I find evidence which strongly suggests that undervaluation is a main driver for the announcement effect of partial stock acquisitions. Accordingly, there are two coexisting hypotheses—the corporate governance enhancement and the undervaluation hypothesis—that explain the announcement effect. Reviewing the literature on partial stock acquisitions and announcement effect for German, US, and other European studies has revealed (see Chapter 3) that the true drivers of the announcement effect are masked by the coexisting hypotheses associated with the announcement effect.

In conclusion, the *ANNOUNCEMENT EFFECT MODEL* reveals striking insights into the causes of the stock market response to the announcement of partial stock acquisitions by new institutional investors. In particular, two findings stand out. *First*, this model further reveals evidence that the corporate governance enhancement hypothesis is important when it comes to explain the stock market reaction. In particular, the ownership structure of the target firm seems to matter. All three coefficients of the target ownership structure stay significant after controlling for the other two coexisting hypotheses of the announcement effect. Additionally, the coefficients of these variables stay significant, even if smaller in magnitude, when using the control model. This strengthen the findings of the previous model that already has indicated that the ownership structure and thus the existing corporate governance system of the target firm is important to explain the announcement effect. While the previous model only finds a relationship between ownership structure and announcement effect in the model without control variables, Model 3 finds this relationship also in the model with control variables. *Second*, the valuation level of the target firm also substantially influences the announcement effect. This finding, even though unsurprising, confirms the findings of the literature. This result, however, somehow entails a typical pitfall for empirical research in this string of literature. The coexisting hypotheses are not mutually exclusive, and it is hard to disentangle them. This fact is clouding the results and the true drivers behind the announcement effect. In the next section, I introduce an innovative tool to address this problem.

6.3.4 Holding Period Model

In a fourth step, I use the *HOLDING PERIOD MODEL* (Model 4) to further my analysis on the announcement effect of partial stock acquisitions. *Table 6.7* displays the results of the models. Model 4 is identical to Model 3 except for the inclusion of a new PAC variable—HPERIOD. This variable serves as a helpful tool to disentangle the different explanation for the announcement effect. The line of reasoning is that long-term institutional investors' transactions are more likely to increase value

through enhancement in corporate governance rather than simply through buying underpriced assets. Simply put, a long-term holding period indicates that the new institutional investors are "corporate governance champions" (Croci, 2007, p.950). In next subsection (6.3.5), I will use an interaction model so that I can apply this tool to gain further insights. Currently, I examine the importance of this variable alone and in interrelation to the other variables. Columns 1 and 2 report results for the model without (Model 4.A) and with (Model 4.B) the inclusion of control variables. The predictions for the coefficients of the explanatory variables in model 4 are based on framework derived in Subsection 4.2.2 ($H_{CGE}1$ to $H_{CGE}11$, $H_{AT}12$ and $H_{U}12$).

The results of *Model 4.A* contain valuable insights. Introducing the HPERIOD variables adds to the explanatory power of the model in a sense that the significant coefficients of the previous model stay statistically significant at the same level, and the overall fit, as indicated by adjusted R^2, increases further.

Closer inspection of PAC variables shows that the HPERIOD variable is significant at the 10% level and the coefficient amounts to –4.119. This finding, although not large in magnitude statistically, supports the idea that this variable is relevant when it comes to the explanation of the announcement effect. This evidence is in line with the prediction from my empirical framework, in which i hypothesize a negative relationship. One way of interpreting this finding is that short-term investments are more likely to be driven by misevaluation. In addition, particularly favorable stock market reactions could drive down the holding period (reverse causality argument). According to this reasoning transactions driven by undervaluation have a more pronounced stock market reaction because it is easier for the market to understand them. To recall, the undervaluation hypothesis assumes that it comes to a redistribution of information and the increase in value is not conditional on ongoing activism from new institutional investors but rather on the announcement of the news that the new institutional investor has identified an undervalued company. New institutional investors use their superior stock picking ability or insider information to exploit temporal misevaluations of the market. This is easier to read by the market, and the value increase comes with less uncertainty in comparison to a transaction which is, to a large extent, conditional on future expected corporate governance enhancement actions (see Section 4.2.2).

Brav et al. (2008) stress the point that the announcement effect is a biased estimator of successful monitoring and control by shareholder activists (see Subsection 2.2.4). This is because the adjustments in the stock price following the announcement of the partial stock acquisitions will reflect only the expected benefits from shareholder activism adjusted for the equilibrium probability that the new institutional investors continue monitoring and control. If the price were adjusted fully to the ex post effects of monitoring and control activity by shareholders (simply assume that the market is able to read it), the investors would have no incentive to continue to invest in costly monitoring—ignoring reputation concerns and liquidity issues. As a corollary, the market response is below the value reflecting the ex post successful monitoring and control activities (Bradley et al., 2007). Theoretical

models that are in line with the low predictability between announcement effect and ex post success of activism are the models by Maug (1998) and Cornelli and Li (2002). Additionally, the effect that a short-holding period is associated with more pronounced announcement effect is intensified because investors may tend to sell successful transactions earlier, and by the same token these transactions are more likely to be driven by undervaluation. To understand this, keep in mind that it is rather a *stylized situation* that the new institutional investors are solely driven by either corporate governance enhancement motives or undervaluation motives. It is more likely that these investors are driven to a certain extent by both motives and that they act opportunistically by choosing which motive is more important in the *actual situation*. Hence, since monitoring and control is costly, it is likely that the investors constantly re-examine whether they should invest in additional monitoring ("voice"), be passive and hold the share ("loyalty"), or sell the shares ("exit").[249] Given that the price increase is relatively high to the announcement of partial stock acquisitions, it gets relatively more expensive to invest further resources into costly monitoring; and, if the opportunity costs of holding the shares exceed the benefits, the shareholders have an incentive to sell their shares into the market.

Moreover, BLOCK is another PAC variable that is significant. It is significant at the 10% level and amounts to 0.323 which is in line with the predictions of the framework and the results of the previous Models 1.A to 3.A and similar interpretations as in Subsections 6.3.1 to 6.3.3 apply.

The results for the target's ownership structure conform to the previous findings. All coefficients for the variables measuring the target's ownership structure remain as significant as in the previous model. The CONCENTRATION coefficient increases slightly in absolute value to –14.091 at a t_{CAR} of –2.4. The coefficient (t_{CAR}) for CONTROLLING is 6.409 (2.440) and thus significant at the 5% level. INSTITUTIONAL is also significant at the 5% level and amounts to –0.230. All findings are in accord with the predictions from my empirical framework. Moreover, the same interpretations from the previous three subsections (Models 1-3) apply to these findings as well.

The variables measuring the other target corporate governance characteristics are also in line with the previous findings. These variables all stay statistically insignificant. The coefficient for MOWNERSHIP, SBOARD, COMPETITION, and DEBT are all positive and amount to 0.010, 0.302, 0, and 0.003, respectively. The other hypotheses are also in accord with the previous models. UC is significant at the 5% level at a value of –0.816 and a t_{CAR} of –2.5. This again underlines the fact that undervaluation is also one driver of the announcement effect. TO is insignificant and amounts to –2.419. The *F*-test amounts to 2.15 and is significant at the 5% level. The goodness of fit as measured by adjusted R^2 is 0.161. R^2 increases in comparison the *ANNOUNCEMENT EFFECT MODEL*, which is an indication that HPERIOD helps to increase the explanatory power of the model.

Model 4.B reveals two salient points. *First*, the inclusion of control variables has substantial impact on the coefficients of the explanatory variables compared to model A. This underlines again that the consideration of control variables is important to control for the omitted variables bias. *Second*, the

[249] Exit, voice, or loyalty are terms introduced by Hirschman (1970).

HOLDING PERIOD MODEL (Model 4) as well as the *ANNOUNCEMENT EFFECT MODEL* (Model 3) are both more robust to the inclusion of control variables than the first two models. Accordingly, corporate governance enhancement variables and undervaluation variables are important when it comes to the causes of the rise of the target's share price following the partial acquisition announcement. More specifically, HPERIOD stays significant at the 10% level but slightly reduces in absolute value to –3.666. BLOCK gets insignificant and diminishes to 0.222. Two out of three ownership variables stay significant even if only at the 10% level. CONCENTRATION is statistically significant at the 10% level and amounts to –9.733, which means a decrease of about four units in absolute value. The coefficient for CONTROLLING amounts to 4.703 and is statistically significant at the 10% level. The coefficient for INSTITUTUONAL loses meaningfulness and becomes insignificant, even though it was previously significant at the 1% level—this again is because of the omitted variable bias. The other corporate governance variables do not change much and stay insignificant as in Model 4.A. The coefficient for TO also stays insignificant, but the coefficient for undervaluation stays significant at the 5% level as in Model 4.A. This, again, supports the idea that undervaluation is one key driver of the announcement effect. The overall significance measured by the *F*-test further increases and is highly significant at the 1% level and adjusted R^2 is 0.226. Consequently, the control model also suggests that the inclusion of HPERIOD enhances the explanatory power of the model.

Table 6.7: Holding Period Model

Variable	(1) **Model 4.A**		(2) **Model 4.B**	
Dependent Variable: CAR [-5;+5] in %	Coefficient	$t_{statistic}$	Coefficient	$t_{statistic}$
- constant	13.613***	2.720	20.601*	2.350
1. Corporate Governance Enhancement Hypothesis				
A. Partial Acquirer Chracteristics				
- PE	2.461	0.980	0.341	0.140
- Toehold	-0.276	-0.130	0.543	0.240
- Block	0.323*	1.770	0.222	1.200
- HPeriod	-4.119*	-1.680	-3.666*	-1.730
B. Target Ownership Characteristics				
- Concentration	-14.091**	-2.400	-9.733*	-1.710
- Controlling	6.409**	2.440	4.703*	1.780
- Institutional	-0.230***	-2.590	-0.143	-1.610
C. Other Target Corporate Governance Characteristics				
- MOwnership	0.010	0.200	-0.015	-0.280
- SBoard	0.302	0.380	0.322	0.420
- Competition	0.000	0.120	0.001	0.470
- Debt	0.003	1.130	0.003	1.050
2. Other Hypotheses				
- TO	-1.764	-0.640	-2.803	-1.000
- UV	-0.816**	-2.500	-0.797**	-2.460
Control Variables	No		Yes	
No. of Observations	186		186	
F-test	2.15**		2.51***	
Adj. R^2	0.161		0.226	

The dependent variable is CAR [–5;+5]. All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (HPERIOD) is a dummy variable taking the value of one if the holding period of the transaction is more than a year. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g., mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) is defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) is defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

In summary, this section has introduced and discussed the *HOLDING PERIOD MODEL* and HPERIOD variable. The variable should serve as a tool to disentangle the corporate governance enhancement hypothesis and the undervaluation hypothesis. For now, I just incorporated it into my analysis to test the interrelations to the other variables and to the announcement effect itself. *Three upshots* can be drawn. *First*, HPERIOD seems to matter because the coefficient of the variable is significant in Model 4.A as well as Model 4.B. Consequently, it might be a useful tool as suggested. *Second*, the introduction of the new variable does not change the results of the previous models. Moreover, this time the control model produces relatively stable results as opposed to Model 1 and Model 2. This might be an indication that the power of the overall model increases and the results are more valid.

Third, the variable for undervaluation stays significant at the 5% level in Model 4.A and Model 4.B. This confirms the findings of Models 3.A-B and suggests that the undervaluation hypothesis is one driver for the announcement effect. Unfortunately, this confirms the apprehension that multiple hypotheses influence the announcement effect simultaneously, which makes it difficult to measure the importance of the corporate enhancement hypothesis. This result does not come as surprising, but makes the analysis more cumbersome. In the next section, I use an effect heterogeneity model to shed light onto the black box of the determinants of the announcement effect of the partial stock acquisition.

6.3.5 Interaction Model

In the last step, the *INTERACTION MODEL*[250] is deployed, and *Table 6.8* reports the results. The predictions for the coefficients of the explanatory variables are based on framework derived in Subsection 4.2.2 ($H_{CGE}1$ to $H_{CGE}11$, $H_{AT}12$, $H_{U}12$, and $H_{cond}14$-25). An interaction is used to formally test if there is a difference between the explanatory variables and announcement effect conditional on whether the acquirer is a short- or long-term investor. To put it differently, I test whether the value of the slope coefficients of each independent variable on the dependent variables (announcement effect) varies according to the level of HPERIOD. The modifying variable HPERIOD is dichotomous in nature and equals one if the investment is long-term and equals zero[251] if the investment is short-term.[252] While the models in the previous sections are linear-additive models, this section deals with a multiplicative model and thus examines conditional rather than general hypotheses (see Subsection 4.1.2). Column 1 and 2 show Model 5.A without control variables and Model 5.B with control variables.

Two important findings lead to the inclusion of the holding period as an indicator of the intention of the investors.

First, the analysis of new institutional investors' holding period has revealed that contrary to many commentators, new institutional investors are not short-term investors. The mean (median) holding period is 796 (670) days. This result that new institutional investors, particularly hedge funds, are not short-term investors is confirmed by Stadler (2010) for the German stock market and by Brav et al. (2008), Becht et al. (2008), and Boyson and Mooradian (2007) for the US stock market. Hence, long-term term investors might be more likely to be interested in corporate governance issues than short-term investors might be; thus, the holding length of the new institutional investor's investments might reveal useful information for analyzing the initial stock market reaction.

[250] The literature uses different notions for interaction models, e.g., multiplicative models or moderated multiple regression models (Aguinis, 2004, Chapter 1) and Subsection 4.1.2.
[251] The group with all zeros is known as the reference group.
[252] At this point, a word of caution is in order because one has to be careful with the expression of a modifying or conditioning variable because all interaction models are symmetric in nature. This implies in turn that if for instance HPERIOD modifies the effect of CONCENTRATION on CAR, then CONCENTRATION must modify the effect of HPERIOD on CAR (Berry et al., 2009; Brambor et al., 2006; Kim and Franzese, 2007).

Second, the review of the germane literature of partial stock acquisitions and firm value has shown that there are crucial reporting differences with regard to Schedule 13D filings and reportings with respect to §§21 WpHG. Contrary to US regulations, in Germany, investors did not have to state their intention or goals when filing mandatory block acquisitions (during the investigation period).[253] This is especially troublesome because US studies found that this mandatory information about the intention of the investor (beside the type of large shareholders) and the success rate of the stated goals are important for explaining the magnitude of the valuation effect (see Section 3.2). This makes empirical analysis of the magnitude and drivers of the announcement effect much more cumbersome and more difficult in Germany because new institutional investors are not likely to publish this kind of information voluntarily. Accordingly, when investigating the announcement effect to partial stock acquisitions in Germany, indicators can help to gauge the intention of the investors. While in my analysis I use the holding period of the investment as an indicator, I use the interaction model as a tool to test whether this indicator is meaningful to explain cross-sectional variation of the announcement effect.

The interaction term is included to test my *two hypotheses*. *First*, for long-term investments corporate governance enhancement variables are more important to explain the announcement effect than for short-term investments, which implies that the corporate governance enhancement hypotheses are conditional on the level of HPERIOD. *Second*, for the undervaluation variable there is a constant effect on CAR unconditional of HPERIOD. Consequently, I re-examine the hypotheses of Model 4 but this time conditional on HPERIOD. My idea is based on the assumption that a long-term holding period indicates that the new institutional investor is more likely to create value thorough corporate governance. Accordingly, if this were true, it would have an impact on the interactions between HPERIOD and the other explanatory variables. In other words, the interactions between HPERIOD and at least some corporate governance variables should be significant because these measures should be relatively more important if new institutional investors are corporate governance champion. For the same reason, there should be no interaction effect observable between HPERIOD and the Other Hypotheses (i.e., undervaluation and takeover hypothesis). Hence, the idea is that given that there is an interaction effect this would indicate that corporate governance enhancement has a substantial contribution for the shareholder wealth effect of the target company.

Model 5.A and Model 5.B reveal *three* striking insights.

First, the coefficient for the interaction term (i.e., interaction effect) CONCENTRATION is negative and highly significant at the 1% level for both models. This confirms my belief that the effect of a change in CONCENTRATION on CAR depends on whether it is a long-term (HPERIOD=1) or short-term investment (HPERIOD=0). Hence, the values of the slopes conditional on the level of HPERIOD differ significantly. The marginal effect of CONCENTRATION on CAR in the interaction

[253] However, since the enforcement of §27a WpHG in August 2008 implemented through the risk limitation act (Risikobegrenzungsgesetz) Germany has comparable regulations to the US.

model is conditional on HPERIOD and is $\frac{\partial \text{CAR}}{\partial \text{CONCENTRATION}} = \beta_5 + \beta_{17} * HPERIOD$.[254] Accordingly, in the case of *long-term* investments, where HPERIOD equals one, the marginal effect for Model A (Model B) is –17.86 (–13,784) and for *short-term* investments, where HPERIOD equals zero, the marginal effect is 34.34 (29.141), respectively.[255] The coefficient for the interaction term of long-term investments is negative as predicted by the models and simultaneously the interaction effect between long-term and short-term investment is significant. My causal story to explain this interaction effect is that a target with a lower concentration of ownership (keep in mind I assume corporate governance mechanisms are substitutes) benefits more from a new institutional investor than a target with a higher concentration of ownership depending on the investors' intention to create value through enhancing corporate governance.

[254] When interpreting the coefficients of the interaction model one has to be careful because one cannot apply the same interpretation as in the linear-additive models. The coefficients in the linear additive model are unconditional in nature whereas the coefficients in the multiplicative (interaction model) are conditional in nature. In comparison to the additive models presented in the previous sections (Model 1 to Model. 4) the marginal effect in multiplicative or rather interaction models is conditional on the conditioning variable—in my model this conditioning variable is HPERIOD. On the one hand, the linear-additive model assumes that the independent variable of interest (let us say CONCENTRATION) has a constant effect on the dependent variable (in my model CAR)—in line with the interpretation in the previous sections. The interaction model, on the other hand, asserts that the effect of a change in CONCENTRATION (independent variable) on CAR (dependent variable) depends on the value of the conditioning variable (in my model HPERIOD). Accordingly, the inclusion of the interaction term "converts a general statement of relationship into a conditional statement of relationship…" (Friedrich, 1982, p.804) (Brambor et al., 2006; Friedrich, 1982).

[255] For Model B the marginal effect for short-term and long-term investors are significant at the 10% and the 5%, respectively. For the long-term investors the *t*-value cannot be easily calculated by looking at Table 6.8 as it is possible for the marginal effect of the long-term investors by adding the coefficient of concentration and the interaction effect of concentration and holding period (-13.8) because the standard error for the marginal effect is not reported. The corresponding *t*-values (see Subsection 4.1.2) for both groups (short-term and long-term investors) is as follows:

$$t\text{-}\,value = \begin{cases} \beta_1 \Big/ \sqrt{var(\beta_1)} & \text{if } x_{2,i} = 0 \\ (\beta_1 + \beta_{z+1}) \Big/ \sqrt{var(\beta_1) + x_{2,i}{}^2 var(\beta_{z+1}) + 2x_{2,i}\text{cov}(\beta_1 * \beta_{z+1})} & \text{if } x_{2,i} = 1. \end{cases}$$

Table 6.8: Interaction Model

	(1) **Model 5.A**		(2) **Model 5.B**	
Dependent Variable: CAR [-5;+5]	Coefficient	$t_{statistic}$	Coefficient	$t_{statistic}$
constant	-34.928**	(-2.35)	-23.250	-1.290
1. Corporate Governance Enhancement Hypothesis				
A. Partial Acquirer Characteristics				
- PE	16.127*	(1.74)	11.963	1.580
PE*HPERIOD	-16.404*	(-1.71)	-12.940	-1.640
- TOEHOLD	5.427	(0.83)	4.032	0.650
TOEHOLD*HPERIOD	-6.626	(-0.95)	-4.946	-0.730
- BLOCK	0.400	(1.34)	0.435	1.520
BLOCK*HPERIOD	-0.182	(-0.50)	-0.249	-0.700
- HPERIOD	50.013***	(3.19)	41.798***	2.560
B. Target Ownership Characteristics				
- CONCENTRATION	34.338**	(2.47)	29.141*	1.930
CONCENTRATION*HPERIOD	-52.198***	(-3.44)	-42.925***	-2.690
- CONTROLLING	2.258	(0.55)	0.925	0.310
CONTROLLING*HPERIOD	2.631	(0.51)	2.911	0.680
- INSTITUTIONAL	0.709	(1.63)	0.617	1.310
INSTITUTIONAL*HPERIOD	-0.930**	(-2.09)	-0.778	-1.640
C. Other Corporate Governance Characteristics				
- MOWNERSHIP	0.048	(0.62)	0.038	0.510
MOWNERSHIP*HPERIOD	-0.026	(-0.27)	-0.022	-0.220
- SBOARD	2.237	(1.09)	1.993	1.090
SBOARD*HPERIOD	-2.545	(-1.16)	-2.059	-1.060
- COMPETITION	-0.006***	(-2.73)	-0.005***	-2.900
COMPETTITION*HPERIOD	0.006***	(2.80)	0.007***	3.650
- DEBT	0.034*	(1.79)	0.034*	1.790
DEBT*HPERIOD	-0.030	(-1.54)	-0.030	-1.550
2. Other Hypotheses				
- TO	9.119**	(2.06)	7.622*	1.710
TO*HPERIOD	-8.881	(-1.58)	-8.855	-1.520
- UV	-0.866	(-0.47)	-0.328	-0.210
UV*HPERIOD	0.051	(0.03)	-0.484	-0.310
Control Variables	No		Yes	
No. of Observations	186		186	
F-test	2.71***		3.70***	
Adj. R^2	0.240		0.258	

The dependent variable is CAR [–5;+5]. All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (HPERIOD) is a dummy variable taking the value of one if the holding period of the transaction is more than a year. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g., mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) is defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) is defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

Second, closer inspection of the other corporate governance variables again reveals interesting insights. The COMPETITION variable seems to move into spotlight. Previously, this coefficient was insignificant but when considering explicitly the effect heterogeneity conditional on HERIOD, it changes. Most remarkable is that the coefficient of INTVAR for COMPETITION is highly significant at the 1% level for Models A and B. The marginal effect of COMPETITION on CAR for Model A (Model B) is 0.00096 (0.00192)[256] for long-term investments and –0.00553 (–0.00522) for short-term investments. This suggests that the marginal effect of COMPETITION on CAR is significantly different depending on the level of HPERIOD. At the same time, a less competitive environment (*high HHI*) leads to a higher announcement effect for long-term investments as suggested by a positive sign of the respective marginal effect. This is in accord with my framework and suggests that a firm being located in a less competitive environment leaves more leeway for management to use control rights in their own interest, thus creating agency costs. These agency costs, in turn, might be reduced by new institutional investors that monitor and control management.

Third, as already detected in the previous models, the inclusion of control variables is crucial for gaining more reliable and less biased estimates. When using the control variables (Model 5.B) the previously significant coefficients, e.g., PE, the interaction term for PE, and the interaction term for INSTITUTIONAL diminish and become insignificant. Moreover, the overall fit increases when including controls as suggested by F_{test} and adjusted R^2. The *F* value increases from 2.71 to 3.70 and the adjusted R^2 from 0.24 to 0.26. Consequently, this underlines that the model gains more explanatory power when considering control variables.

The results of this section are striking and reveal particularly *three* key findings. *First*, in the models presented in this section, I show the importance of the inclusion of the control variables and the bias if one does not account for them properly. *Second,* I find that effect heterogeneity suggests that the coefficients of the explanatory variables are conditional on the level of HPERIOD. *Third*, I find an interaction effect for two variables namely CONCENTRATION*HPERIOD and COMPETITIION*HPERIOD while controlling for unobserved heterogeneity. These variables are both corporate governance enhancement variables, and the marginal coefficients for long-term investments are in line with the predictions from the empirical framework and my belief about the corporate governance story. Keep in mind that I provided evidence that new institutional investors are not short-term investors (contrary to many commentators), that the intention and success rate of the goals besides the type of investor might be important for explaining the announcement effect, and that German disclosure requirements with respect to §21 WpHG make it necessary to use indicators to gauge the intention of the investors.

Consistent with the findings of Brav et al. (2008), Clifford (2008), and Klein and Zur (2009), this section provides evidence that new institutional investors create value through expected activism.

[256] In Table 6.8, I round the coefficients to three decimal places. The exact values for the coefficients in Model A are -0.0055277 for COMETITION and 0.0064878 for the interaction term of COMPETITION. For Model B the exact value are -0.0052214 for COMETITION and 0.0071382 interaction term of COMPETITION.

Thereby, I add value to the literature not only by providing new evidence for the German stock market but also by applying an innovative tool (interaction model) in correspondence with a new indicator (holding period) to show that new institutional investors, indeed, can be effective monitors and thus have potential to enhance the corporate governance system of public corporations in Germany.

In conclusion, the upshot from the story is that my data confirm that corporate governance significantly contributes to the announcement effect. Hence, this is evidence that new institutional investors indeed use their potential and create value by improving the target's corporate governance system. The beginning of the story is Model 4 where I show that the corporate governance enhancement variables, as well as the undervaluation variables, significantly influence the announcement effect in line with the predictions from the empirical framework. This is already an interesting find but unfortunately leaves us in the dark in distinguishing the coexisting hypotheses to explain the announcement effect. The coexisting hypotheses are the common culprits, which make the analysis a difficult task. To tackle this problem and shed light onto the puzzle, I apply an interaction model and use the holding period variable as a tool to distinguish the intention of the investors. I do this by decomposing the new institutional investors into short- and long-term investors according to the holding period. Then I posit that for corporate governance champions (long-term investors) there is an interaction effect between corporate governance variables but not with the other variables measuring the coexisting hypotheses. The reasoning is that new institutional investors, which aim to increase value through enhancement of the existing corporate governance system (long-term investors), are expected to create more value for shareholders. The logic is that partial stock acquisitions of corporate governance champions (i.e., new institutional investors) will trigger a stronger stock market reaction the weaker the existing corporate governance system. This statement is based on the assumption that the long-term investment horizon is proxy for the intention to enhance value through corporate governance and on the assumption that the various corporate governance mechanisms are (imperfect) substitutes. This implies that a more competitive environment and a higher degree of ownership concentration are principally and positively related to the effectiveness of the corporate governance system. If it holds, the market should react more positively if a corporate governance champion buys a large stake of control rights within a company with a weaker governance system. The data confirms this line of argument, and I show that the interaction variables for CONCENTRATION as well as COMPETITION are both significant, which is exactly in line with the reasoning above. In summary, my data suggests that partial stock acquisitions of new institutional investors increase shareholder value, and a significant fraction of this effect can be assigned to expected corporate governance enhancement. Therefore, my findings support the corporate governance enhancement hypotheses. As a corollary, I conclude partial stock acquisitions by new institutional investors, in fact, create value by enhancing the target's corporate governance system.

6.4 SENSITIVITY ANALYSIS

This section deals with the sensitivity analysis of my empirical investigation on partial stock acquisitions by new institutional investors. The purpose is to conduct robustness checks for the empirical results presented in the previous sections (see Section 6.2-6.3).

This section begins by investigating the sensitivity analysis of the results of the event study analysis (Subsection 6.4.1). Then, the results of the sensitivity analysis with respect to the results of the cross-sectional analysis are presented (Subsection 6.4.2). In the following, the term *main model* is used to refer to the results presented in Section 6.2 and 6.3. Moreover, the term *control model* relates to the results of the sensitivity analysis.

6.4.1 Robustness of Event Study Results

A number of critical issues accompany the performance of event studies (see Subsection 4.1.1). In what follows a sensitivity analysis is conducted by addressing *four typical* problems that afflict the performance of event studies: event clustering, the choice of the test statistics, the applied return generating model, and outliers of the abnormal returns. *Tables 6.9 to 6.13* present the robustness tests associated with the above problems. In these tables the results of the *main model* presented in Section 6.2 are compared to the results of the respective *control model* that is outlined here.

In a *first step*, event clustering is addressed, which is one possible problem that afflicts event studies. In the case that partial stock acquisitions by investors are executed in close succession, the results might be biased. Hence, event contamination can occur, which might bias the announcement effect. When computing the variance of cumulative abnormal returns it is assumed implicitly that the event windows of the incorporated securities do not overlap. If this assumption does not hold, the variance of the aggregated sample's CAAR cannot be calculated without concerns (see Subsection 4.1.1), and as a result clustering might contaminate test statistics. In my event study sample and cross-sectional sample, the average number of partial stock acquisitions per firm and year[257] is 0.69. This seems small. However, to account for possible problems emerging from event clustering, a non-overlapping sample is constructed that is free from event window clustering. Therefore all transactions announced in the same target firm that are less than 60 calendar days apart are excluded, and only the first announcement remains in the sample. *Table 6.9* shows the results of the non-overlapping sample (for detailed results see Appendix VII) compared to the main model associated with the event study sample and cross-sectional sample. Panels A and B contain the results of the main model and Panels C and Panel D the results of the control model (i.e., the event study and cross-sectional non-overlapping sample). Inspection of Panels A-D shows that the results (CAAR and t_{CAAR}) of the main model (Panels A and B) with the control model (Panels C and D) are very similar. Consequently, I conclude that my results presenting the main model are robust with regard to event clustering.

[257] I assume here a year has 365 calendar days.

Table 6.9: CAAR for Non-Overlapping Sample

	Panel A: *EVENT STUDY SAMPLE* (Main Model, N=234)		**Panel C**: Non-Overlapping *EVENT STUDY SAMPLE* (Control Model, N=204)	
(1)	(2)	(3)	(4)	(5)
Window (days)	CAAR (%)	t_{CAAR} (*)	CAAR (%)	t_{CAAR} (*)
–20;+20	2.056*	1.6778	2,268*	1,700
–20;+10	3.042***	2.8552	3,350***	2,888
–10;+20	2.476***	2.2879	2,638**	2,238
–10;+10	3.463**	3.8582	3,719***	3,806
–5;+5	2.977***	4.6909	2,830***	4,095
–2;+2	2.162***	5.0536	1,992***	4,276
–1;+1	1.292***	4.0057	1,055***	2,923
–1;+0	1.084***	3.8977	0,960***	3,257
	Panel B: *CROSS-SECTIONAL SAMPLE* (Main Model, N=186)		**Panel D**: Non-Overlapping *CROSS-SECTIONAL SAMPLE* (Control Model, N=164)	
(1)	(2)	(3)	(4)	(5)
Window (days)	CAAR (%)	t_{CAAR}	CAAR (%)	t_{CAAR}
–20;+20	1.854	1.3280	2,425	1,604
–20;+10	2.968**	2.4456	3,448***	2,623
–10;+20	2.462**	2.0285	3,048**	2,282
–10;+10	3.577***	3.5803	4,071***	3,676
–5;+5	3.161***	4.3716	3,173***	4,051
–2;+2	2.143***	4.3963	2,093***	3,964
–1;+1	1.175***	3.1123	1,069***	2,614
–1;+0	0.930***	4.2667	0,925***	2,771

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), and I use "*" to indicate significance levels; (#) t_{CSCAR} is the value of the parametric *t*-test according to Patell (1976), and I use "#" to indicate significance levels; (+) t_{CSCAR} is the value of the parametric *t*-test according to Boehmer et al. (1991), and I use "+" to indicate significance levels; (#); t_{rank} is the value of the non-parametric *t*-test according to Corrado (1989), and I use "#" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively. The complete results are presented in Appendix VIII.

In a *second step*, the sensitivity of the results to the choice of the *t*-statistic is investigated. There may be problems of varying cross-sectional variance in the estimation and event windows, including problems of abnormally distributed abnormal returns (see Subsection 4.1.1). To tackle this problem, three additional *t*-statistics are carried out besides the normal cross-sectional test (t_{CAAR}) proposed by Brown and Warner (1985), namely the standardized cross-sectional test (t_{SCAR}) proposed by Patell (1976), the cross-sectional standardized test (t_{CSCAR}) by Boehmer et al. (1991), and the non-parametric rank test (t_{rank}) proposed by Corrado (1989).[258] The non-parametric rank test also serves as a robustness check regarding possibility of event clustering by accounting for cross-sectional dependence. *Table 6.10* depicts the results of the alternative test-statistics. While Columns 1 and 4 present the CAAR and t_{CAAR} of the main model, Columns 5-6 include the t_{SCAR}, t_{CSCAR}, and t_{rank} of the control model.

Two things are noticeable when reviewing Column 3 in *Table 6.10*. *First*, the *t* values are slightly smaller in magnitude when using the alternative *t*-statistics. For Panels A and B, t_{CSAR} report significant abnormal returns at the 5% level for the [-20;+10] and [-10;+20] windows, insignificant CAAR for the [-20;+20] window, and highly significant CAAR at the 1% level for the remaining event windows. The cross-sectional standardized test (t_{CSCAR}) produces almost identical results as t_{CSAR}

[258] Remember that the two other tests are parametric in nature and assume that the AR are normally distributed.

when observing the significance levels. The only difference are the significance levels of CAAR for the [–10,+20] and [–10,+10] window in Panel B. The non-parametric t_{rank} show less significant *t*-values than its parametric counterparts do. *Secondly*, the same pattern is observable when comparing the main model with the results of the control model (*t* values of three alternative *t*-tests). Accordingly, I conclude the results are robust to the use of alternative test statistics.

Table 6.10: CAAR for Market Model

Panel A: CAAR for Event Study Sample (N=234)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Window (days)	CAAR (%)		t_{CAAR} (*)	t_{CSAR}(#)	t_{CSCAR} (+)	t_{rank} (i)
–20;+20	2.056*		1.6778	1.4479	1.2247	1.011
–20;+10	3.042***	++ ##ii	2.8552	2.5083	2.1216	2.022
–10;+20	2.476***	++##	2.2879	2.3640	1.9996	1.408
–10;+10	3.463**	+++###iii	3.8582	3.8967	3.2961	2.755
–5;+5	2.977***	+++###iii	4.6909	5.1081	4.3207	2.895
–2;+2	2.162***	+++ ###ii	5.0536	5.6257	4.7586	2.497
–1;+1	1.292***	+++ ###i	4.0057	4.4045	3.7256	1.714
–1;+0	1.084***	+++ ###iii	3.8977	5.5002	4.6524	3.090
Panel B: CAAR for *CROSS-SECTIONAL SAMPLE* (N=186)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Window (days)	CAAR (%)		t_{CAAR} (*)	t_{CSAR}(#)	t_{CSCAR} (+)	t_{rank} (i)
–20;+20	1.854		1.3280	1.1224	0.9862	0.800
–20;+10	2.968**	##++	2.4456	2.2414	1.9694	1.635
–10;+20	2.462**	#	2.0285	1.9318	1.1508	1.222
–10;+10	3.577***	###++ii	3.5803	3.5021	2.3795	2.352
–5;+5	3.161***	###+++iii	4.3716	4.4015	3.8675	2.867
–2;+2	2.143***	###+++ii	4.3963	4.3819	3.8502	2.251
–1;+1	1.175***	###+++	3.1123	3.0908	2.7158	1.506
–1;+0	0.930***	###+++iii	4.2667	4.7217	4.1488	2.770

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), and I use "*" to indicate significance levels; (#) t_{CSCAR} is the value of the parametric *t*-test according to Patell (1976), and I use "#" to indicate significance levels; (+) t_{CSCAR} is the value of the parametric *t*-test according to Boehmer et al. (1991), and I use "+" to indicate significance levels; (#); t_{rank} is the value of the non-parametric *t*-test according to Corrado (1989), and I use "#" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively. The complete results are presented in Appendix VIII.

In a *third step*, the sensitivity of the results to the choice of the return generating model is tested by using the constant mean model to generate the expected returns (control model) rather than the market model (main model). Table 6.11 presents the results of the event study with the market model (Panels A and B) and with constant mean model (Panels C and D). Comparing the results of the control model to those derived from the market model (main model) reveals that the results change only very modestly when applying the constant mean model. CAAR for the 21-day, 11-day, 5-day, 3-day, and 2-day are highly statistically significant for all panels (A-D). Over the complete event window of 41-days the CAAR in the control model for the Event Study (Panel C) and Cross-Sectional Sample (Panel D) are smaller in magnitude when comparing to the CAAR from the market model (Panels A and B). However, for both models the same pattern of CAAR is observable. Thus, the results are not sensitive to the used return generating model, which again confirms the robustness of my results.

Table 6.11: CAAR with Constant Mean Return Model

	Panel A: CAAR for *EVENT STUDY SAMPLE* (Main Model, N=234)		**Panel C:** CAAR for *EVENT STUDY SAMPLE* (Control Model, N=234)	
(1) Window (days)	(2) CAAR (%)	(3) t_{CAAR} (*)	(4) CAAR (%)	(5) t_{CAAR} (*)
–20;+20	2.056*	1.6778	0.4706	0.3673
–20;+10	3.042***	2.8552	2.0367*	1.8285
–10;+20	2.476***	2.2879	1.4383	1.2709
–10;+10	3.463**	3.8582	3.0044***	3.2018
–5;+5	2.977***	4.6909	2.8674***	4.3214
–2;+2	2.162***	5.0536	2.1097***	4.7161
–1;+1	1.292***	4.0057	1.3285***	3.8339
–1;+0	1.084***	3.8977	1.0778***	3.8095
	Panel B: CAAR for *CROSS-SECTIONAL SAMPLE* (Main Model, N=186)		**Panel D:** CAAR for *CROSS-SECTIONAL SAMPLE* (Control Model, N=186)	
(1) Window (days)	(2) CAAR (%)	(3) t_{CAAR}	(4) CAAR (%)	(5) t_{CAAR} (*)
–20;+20	1.854	1.3280	0.1768	0.1220
–20;+10	2.968**	2.4456	1.9974	1.5845
–10;+20	2.462**	2.0285	1.3549	1.0579
–10;+10	3.577***	3.5803	3.1754***	2.9902
–5;+5	3.161***	4.3716	2.9645***	3.9478
–2;+2	2.143***	4.3963	1.8848***	3.7229
–1;+1	1.175***	3.1123	1.0572***	2.6959
–1;+0	0.930***	4.2667	0.8807***	2.7506

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), and I use "*" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively. The complete results are presented in Appendix VIII.

In a *fourth step*, the robustness of the results with respect to outliers in the distribution of CAAR are examined. For that reason another sample is derived where outliers (the highest 1% and lowest 1%) in the distribution of CAAR are deleted. Therefore, in the event study and cross-sectional sample, I twice drop four observations and the sample sizes reduce from 234 to 230 and 186 to 182, respectively. Panels A and B in *Table 6.12* show the results for the event study and cross-sectional sample in the main model and Panels C and D for the control model. Looking at all four Panels highlights that the exclusion of outliers does not change the results noticeably. In fact only in three windows does the significance level change slightly. In Panels A and C, in the [–10;+20] window of CAAR, the significance level reduces from 1% to the 5% level; and in the [–10;+10] window, the significance level increases from 5% to the 1% level, respectively. In Panels B and D the significance level is identical except that the CAAR for the [–10, +20] window reduces from the 5% to the 1% level. As a result, I conclude that my results are robust for outliers in the distribution of CAAR in my event study sample and cross-sectional sample.

Table 6.12: CAAR Adjusted for Outliers

	Panel A: CAAR for *EVENT STUDY SAMPLE* (Main Model, N=234)		**Panel C**: CAAR for *EVENT STUDY SAMPLE* (Control Model, N=230)	
(1) Window (days)	(2) CAAR (%)	(3) t_{CAAR} (*)	(4) CAAR (%)	(5) t_{CAAR} (*)
–20;+20	2.056*	1.6778	2.1237*	1.7285
–20;+10	3.042***	2.8552	2.9657***	2.7760
–10;+20	2.476***	2.2879	2.4068**	2.2174
–10;+10	3.463**	3.8582	3.2488***	3.6098
–5;+5	2.977***	4.6909	2.9602***	4.6516
–2;+2	2.162***	5.0536	2.1478***	5.0059
–1;+1	1.292***	4.0057	1.2532***	3.7707
–1;+0	1.084***	3.8977	1.0447***	3.8501
	Panel B: CAAR for Cross-Sectional Sample (Main Model, N=186)		**Panel D**: CAAR for Cross-Sectional Sample (Control Model, N=182)	
(1) Window (days)	(2) CAAR (%)	(3) t_{CAAR}	(4) CAAR (%)	(5) t_{CAAR} (*)
–20;+20	1.854	1.3280	1.9355	1.3809
–20;+10	2.968**	2.4456	2.8707**	2.3554
–10;+20	2.462**	2.0285	2.3739*	1.9172
–10;+10	3.577***	3.5803	3.3092***	3.2231
–5;+5	3.161***	4.3716	3.1438***	4.3304
–2;+2	2.143***	4.3963	2.1245***	4.3405
–1;+1	1.175***	3.1123	1.7342***	3.9613
–1;+0	0.930***	4.2667	1.5495***	4.0868

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), and I use "*" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively. The complete results are presented in Appendix VIII.

In summary, the conducted robustness tests do not change the main results of the empirical investigation, namely that CAAR are staying significantly different from zero, following the announcement day. Thus, the partial stock acquisition announcements seem to convey a positive signal to the market. I used the standard procedures for testing the robustness of the results. Hence, I conclude that the results presented in my event study are robust.

6.4.2 Robustness of Cross-Sectional Analysis Results

This subsection tests the robustness of my results of the cross-sectional models outlined in Section 6.3. In particular, the focus is on two problems. *First*, I investigate whether the models are sensitive to the exclusion of outliers in the distribution of the dependent variable (i.e., CAR). *Second*, I examine if the results are sensitive to the choice of the event window used to calculate CAR (i.e., in the main model I use the 11-day window namely CAR [–5;+5]). *Tables 6.13* and *6.14* present the results. These tables only contain the results for *HOLDING PERIOD MODEL* and the *INTERACTION MODEL* with inclusion of control variables. The complete results are presented in Appendix IX.

First, the problem of whether outliers in the distribution of CAR drive the results of the cross-sectional models is tackled. Therefore, the 1% highest and lowest CAR of the cross-sectional sample are excluded. The last subsection already showed that the results of the event study are robust for the

exclusion of outliers. Now I proceed and investigate if the same holds for the cross-sectional models. Therefore, the results of the Models 4.B and Model 5.B are compared depending on whether the main cross-sectional sample (*main model*) or whether a sample adjusted for outliers (*control model*) is used. *Table 6.13* shows the results. Columns 1 and 2 contain Models 4.B and 5.B for the main model and columns 3 and 4 contain the respective results for the control model.

When comparing Model 4.B for both the main and control models, it is apparent that the results change slightly. The key results of the main model were that the coefficient for HPERIOD was negative but significant at the 10% level, the ownership variables CONCENTRATION and CONTROLLING were both significant at the 10% level, and the coefficient for UV was statistically significant at the 5%. All four coefficients were in line with the expectations of the empirical framework outlined in Subsection 4.2.2. Comparing these results to the control model shows that the coefficient for HPERIOD reduces and turns insignificant yet stays negative. Furthermore, closer inspection of the target firm's ownership characteristics shows that the first two coefficients for CONCENTRATION and CONTROLLING variables, previously significant at the 10% level, diminish and turn insignificant whereas the coefficient for the variable INSTITUTIONAL, previously negative but insignificant, becomes more pronounced and stays negative and eventually becomes significant at the 10% level. Hence, while the three significance levels of the ownership variables change, the general pattern—that ownership does matter—remains unchanged. The coefficient for UV previously significant at the 5% level diminishes slightly yet stays significant at the 10% level. The *F* statistics (adj. R^2) for the main and control models are more-or-less similar yet slightly smaller for the control model at a value of 2.51 (22.61) and 2.47 (19.51), respectively. Overall, the use of a sample adjusted for outliers changes the results slightly as opposed to the main model, even though the general pattern remains unchanged.

Table 6.13: Cross-Sectional Model Adjusted for Outliers

Variables	(1) Model 4.B *Main Model*		(2) Model 5.B *Main Model*		(3) Model 4.B *Control Model*		(4) Model 5.B *Control Model*	
	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$
- constant	20.601*	(2.350)	-23.250	(-1.290)	15.396*	(1.80)	-24.710	(-1.510)
1. Corporate Governance Enhancement Hypothesis								
A. Partial Acquirer Characteristics								
PE	0.341	(0.140)	11.963	(1.580)	-0.150	(-0.07)	9.107	(1.300)
- PE*HPERIOD			-12.940	(-1.640)			-10.042	(-(1.370)
TOEHOLD	0.543	(0.240)	4.032	(0.650)	0.785	(0.38)	4.599	(0.820)
- TOEHOLD*HPERIOD			-4.946	(-0.730)			-5.452	(-(0.900)
BLOCK	0.222	(1.200)	0.435	(1.520)	0.336*	(1.94)	0.664***	(2.660)
- BLOCK*HPERIOD			-0.249	(-0.700)			-0.401	(-(1.280)
HPERIOD	-3.666*	(-1.730)	41.798***	(2.560)	-2.943	(-1.43)	38.604***	(2.630)
B. Target Ownership Characteristics								
CONCENTRATION	-9.733*	(-1.710)	29.141*	(1.930)	-8.524	(-1.63)	26.817**	(2.110)
- CONCENTRATION*HPERIOD			-42.925***	(-2.690)			-38.732***	(-(2.810)
CONTROLLING	4.703*	(1.780)	0.925	(0.310)	2.929	(1.27)	0.736	(0.240)
- CONTROLLING*HPERIOD			2.911	(0.680)			0.516	(0.130)
INSTITUTIONAL	-0.143	(-1.610)	0.617	(1.310)	-0.141*	(-1.81)	0.441	(1.120)
- INSTITUTIONAL*HPERIOD			-0.778	(-1.640)			-0.584	(-1.470)
C. Other Corp. Governance Charact.								
MOWNERSHIP	-0.015	(-0.280)	0.038	(0.510)	0.003	(0.06)	-0.012	(-0.170)
- MOWNERSHIP*HPERIOD			-0.022	(-0.220)			0.068	(0.770)
SBOARD	0.322	(0.420)	1.993	(1.090)	0.607	(0.85)	2.172	(1.280)
- SBOARD*HPERIOD			-2.059	(-1.060)			-1.998	(-1.110)
COMPETITION	0.001	(0.470)	-0.005***	(-2.900)	0.001	(0.60)	-0.005***	(-2.810)
- COMPETITION*HPERIOD			0.007***	(3.650)			0.007***	(3.470)
DEBT	0.003	(1.050)	0.034*	(1.790)	0.000	(0.12)	0.039**	(2.190)
- DEBT*HPERIOD			-0.030	(-1.550)			-0.038**	(-2.110)
2. Other Hypotheses								
TO	-2.803	(-1.000)	7.622*	(1.710)	-2.800	(-1.02)	7.844**	(1.980)
- TO*HPERIOD			-8.855	(-1.520)			-8.997*	(-1.680)
UV	-0.797**	(-2.460)	-0.328	(-0.210)	-0.283*	(-1.72)	0.016	(0.010)
- UV*HPERIOD			-0.484	(-0.310)			-0.296	(-0.210)
Control Variables	YES		YES		YES		YES	
No Obs.	186		186		182		182	
F-test	2.51***		3.70***		2.47***		3.26***	
Adj. R^2	0.2261		0.2577		0.1951		0.2696	

The dependent variable is CAR [–5;+5]. All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (HPERIOD) is a dummy variable taking the value of one if the holding period of the transaction is more than a year. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g., mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) is defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) is defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

The main results of the interaction model (*main model*) are that the coefficients of the interaction terms, and the respective variables CONCENTRATION and COMPETITION, were significant; the coefficient for the variable UV was insignificant. *Table 6.13* shows that all three findings remain in the *control model* with only marginal differences in terms of statistical significance. The coefficient for CONCENTRATION and the interaction term for CONCENTRATION were previously (main model) significant at the 10% and 1% level, respectively. In the control model the coefficient for CONCENTRATION is statistically significant even at the 5% level, and the interaction terms stay highly statistically significant at the 1% level. The coefficient for COMPETITION and the respective interaction term were both highly significant at the 1% level, and this does not change in the control model. The coefficient of UV, previously insignificant, is also insignificant in the control model. Further inspection of the main and control Model 5.B reveals that the coefficient for BLOCK for the interaction term of DEBT and TO turn significant. Overall, the results seem relatively robust to the adjustments of outliers; however, some changes are observable.

Second, it is examined whether the results depend on the choice of the event window chosen for the dependent variable (i.e., CAR). *Table 6.14* compares the results of the Models 4.B and Model 5.B depending on whether CAR is calculated over the [-5;+5] or [-2;+5] window as a dependent variable. Columns 1 and 2 present the results for the *main model*, and columns 3 and 4 show the results of the *control model*. Appendix IX depicts the results for Model 1.B to Model 3.B with CAR [-2;+5] as dependent variables and Model 4.B with CAR [-10;+10] as a dependent variable.

The main and control Model 4.B reveals that HPERIOD, previously negative and significant at the 10% level, turns insignificant yet stays negative. With regard to the ownership variables the coefficient for CONTROLLING stays significant at the 10% level, whereas the coefficient for CONCENTRATION turns insignificant. The coefficient for UV diminishes slightly, and remains significant, but only at the 10% level as opposed to the 5% level previously. Furthermore, the coefficient for DEBT, previously insignificant, turns significant at the 10% level. The overall significance of the both models only changes slightly, and the *F* test increases from 2.51 to 2.71 and adjusted R^2 reduces from 0.2261 to 0.2183. Overall, it is apparent that the dependent variable changes the results even though the general pattern seems to remain unchanged.

The three main results of the *INTERACTION MODEL* discussed above also hold for a change in the dependent variable namely the interaction term CONCENTRATION and COMPETITION stay significant and UV remains insignificant. Apart from this, the coefficient for the interaction term of INSTITUTIONAL turns significant at the 5% level, and the coefficient for DEBT becomes significant at the 10% level. The overall significance only changes little, and the *F* test increases from 2.51 to 3.01 and adjusted R^2 from 0.2261 to 0.2553. Overall, the results of the main model seem to be sensitive to the choice of the length of the event days used to calculate the announcement effect. Taking into account the observations in *Appendix IX*, *Table Appendix 21*, and comparing the main model with the control model with the depend variable CAR [-10;+10] underlines this point as well.

Accordingly this is an important result which implies that the results of the main model presented in Section 6.3 are sensitive to the choice of the window used to calculate CAR, which has to be borne in mind for the interpretation and implication of my results.

As already discussed in Subsection 4.1.2 the relevant literature does not reveal a standard procedure to choose the event window to calculate CAR. I opt for choosing the CAR [–5; +5] as a dependent variable in the cross-sectional analysis to capture the announcement effect. My decision was made after the following consideration: given that the market reacts immediately to the announcement of the partial stock acquisition, and that there is no uncertainty over the announcement day or other important factors, the stock market response relates to the exact day of the announcement. In practice, however, the announcement day is uncertain (see Section 5.2 for construction of event study samples) and hence it is not clear when the market first incorporates the new information. In empirical studies the following trade-off arises: if the window is too wide, other influences might bias the result since not only the announcement effect of the particular event is measured. Contrary, if the chosen CAR time window is too narrow, one may miss an important part of the announcement effect. Overall, I decided to choose CAR [-5;+5] as a good compromise of the aforementioned trade-off.

Table 6.14: Cross-Sectional Models with different CAR

	(1)		(2)		(3)		(4)	
	Main Model 4.B		*Main Model* 5.B		*Control Model* 4.B		*Control Model* 5.B	
Variables	*CAR* (–5;+5)		*CAR* (–5;+5)		*CAR* (–2;+5)		*CAR* (–2;+5)	
	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$
- constant	20.601*	(2.350)	-23.250	(-1.290)	0.208***	(3.17)	-0.207	(-1.32)
1. Corporate Governance Enhancement Hypothesis								
A. Partial Acquirer Characteristics								
PE	0.341	(0.140)	11.963	(1.580)	-0.009	(-0.47)	0.085	(1.29)
- PE*HPERIOD			-12.940	(-1.640)			-0.109	(-1.60)
TOEHOLD	0.543	(0.240)	4.032	(0.650)	-0.002	(-0.10)	0.018	(0.30)
- TOEHOLD*HPERIOD			-4.946	(-0.730)			-0.030	(-0.46)
BLOCK	0.222	(1.200)	0.435	(1.520)	0.002	(1.32)	0.002	(0.85)
- BLOCK*HPERIOD			-0.249	(-0.700)			0.000	(0.07)
HPERIOD	-3.666*	(-1.730)	41.798***	(2.560)	-0.016	(-0.81)	0.406***	(2.64)
B. Target Ownership Characteristics								
CONCENTRATION	-9.733*	(-1.710)	29.141*	(1.930)	-0.081	(-1.42)	0.322**	(2.29)
- CONCENTRATION*HPERIOD			-42.925***	(-2.690)			-0.442***	(-2.96)
CONTROLLING	4.703*	(1.780)	0.925	(0.310)	0.045*	(1.75)	0.017	(0.69)
- CONTROLLING*HPERIOD			2.911	(0.680)			0.024	(0.63)
INSTITUTIONAL	-0.143	(-1.610)	0.617	(1.310)	-0.001	(-0.97)	0.008*	(1.78)
- INSTITUTIONAL*HPERIOD			-0.778	(-1.640)			-0.009**	(-2.0)
C. Other Corp. Governance Charact.								
MOWNERSHIP	-0.015	(-0.280)	0.038	(0.510)	-0.001	(-1.24)	0.000	(0.54)
- MOWNERSHIP*HPERIOD			-0.022	(-0.220)			-0.001	(-0.94)
SBOARD	0.322	(0.420)	1.993	(1.090)	0.001	(0.12)	0.011	(0.80)
- SBOARD*HPERIOD			-2.059	(-1.060)			-0.012	(-0.76)
COMPETITION	0.001	(0.470)	-0.005***	(-2.900)	0.000	(0.50)	0.000***	(-3.77)
- COMPETITION*HPERIOD			0.007***	(3.650)			0.000***	(4.67)
DEBT	0.003	(1.050)	0.034*	(1.790)	0.000*	(1.80)	0.000*	(1.67)
- DEBT*HPERIOD			-0.030	(-1.550)			0.000	(-1.41)
2. Other Hypotheses								
TO	-2.803	(-1.000)	7.622*	(1.710)	-0.014	(-0.58)	0.092**	(2.37)
- TO*HPERIOD			-8.855	(-1.520)			-0.097*	(-1.86)
UV	-0.797**	(-2.460)	-0.328	(-0.210)	-0.006*	(-1.89)	-0.005	(-0.35)
- UV*HPERIOD			-0.484	(-0.310)			-0.001	(-0.06)
Control Variables	YES		YES		YES		YES	
No Obs.	186		186		186		186	
F-test	2.51***		3.70***		2.71***		3.01***	
Adj. R^2	0.2261		0.2577		0.2183		0.2553	

The dependent variable is CAR [–5;+5]. All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (HPERIOD) is a dummy variable taking the value of one if the holding period of the transaction is more than a year. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g., mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) is defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) is defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

This subsection has dealt with a sensitivity analysis for the results of my cross-sectional analysis. The results suggest that while the results of the cross-sectional model seem to be robust for the exclusion of outliers, the opposite is true if changing the dependent variables. The choice of the event window for CAR seems to have an impact on the results of the cross-sectional models, although this impact is not too strong. Nevertheless, this is an important result which must be kept in mind for the interpretation and implication of my results.

7 CONCLUSION

"We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time."(Eliot, 1942, p.197)

This dissertation contributes to the literature on corporate governance and firm value by examining one specific example in the German corporate governance system, namely partial stock acquisitions by new institutional investors in German public corporations. It is hypothesized that partial stock acquisitions are an important corporate governance mechanism in Germany and that new institutional investors have great potential to be successful activists to address the corporate governance problem in public corporations. At the end of *my exploration* I reflect upon my analysis from various perspectives, analyzing my contributions, discussing potential limitations, and putting forward ideas for future research.

From a historical perspective it is important to note that financial, as well as, corporate governance systems have an evolutionary character. Different themes and actors dominate the corporate governance scene depending on the period and country. Various regulatory modifications in the German financial market have been main drivers for the development of the capital market and for the changes in the corporate governance system. In recent years a new theme arose in the corporate governance scene—new institutional investors as shareholder activists. In Germany these investors started to invest in public equity in the late nineties, and interestingly their actions coincided with the unbundling of the Deutschland AG. With their unique business model and organizational structure, this new type of shareholder activist is seen by some as a "new breed of shareholder activist" (Klein and Zur, 2009, p.226) who may try to take advantage of profit opportunities caused by inefficiencies in the German corporate governance system. In Germany little empirical evidence exists on whether these investors use their full potential to enhance the corporate governance system of public corporation. Thus, my dissertation embarks on a new and unique study, analyzing the minority stock acquisitions between 3% and 30% of new institutional investors in German public corporations during the 2002 and 2008 period. My analysis provides fresh evidence that these investors indeed meet their potential and thus create value by enhancing the target firm's corporate governance system through partial stock acquisitions. Still, further studies are needed to better understand the role of this type of investor and to answer whether these actors maintain a permanent leading role in German corporate governance or whether they simply had a temporary supporting role.

From an *analytical perspective* a common viewpoint is that a theoretical analysis is helpful to structure the corporate governance problem—seen and defined in a narrow sense in the tradition of the principal agent approach—but theory alone is unable to provide a comprehensive answer. Instead, empirical evidence is needed to answer what drives the effectivity of a corporate governance system. The results of my empirical analysis provide such evidence. In my investigation a financial economics

framework (i.e., agency theory) is applied, and thus the corporate governance system is conceptualized as a set of internal and external mechanisms that monitor and control managers. My analysis focuses on the stock market response to the announcement of partial stock acquisitions by new institutional investors. A rigorous empirical analysis is conducted by examining the magnitude and determinants of this announcement effect. The idea is that corporate governance enhancement does have an impact on the value of the firm. Usually, the positive announcement effect is explained by three hypotheses: corporate governance enhancement, undervaluation, and anticipated takeover effects. The most important hypothesis in my analysis is the corporate governance enhancement hypothesis. I derive a framework of eleven testable hypotheses that proxy potential measures for corporate governance enhancement. These measures are decomposed into partial acquirer block characteristics, as well as the quality of the corporate governance system, in place in the target firm. The upshot from the story is that there is a significant correlation between the announcement effect and corporate governance variables. The take-home message of my analysis is that partial stock acquisitions by new institutional investors, indeed, can be understood and tested as a synthesis of two corporate governance mechanisms namely monitoring and control by large shareholders and by market for (partial) corporate control.

From a *methodological perspective* important implications arise for future empirical studies in this field. My study underlines that an accurate distinction between various empirical methodologies will facilitate an interpretation and understanding of the implication of the results. My contribution comes from building a taxonomy of studies of ownership and performance to capture the methodologies in this field. I apply event study and cross-sectional analysis methodology as empirical tools in my analysis. Hence, my research can be seen as part of the comparative dynamic studies of ownership and firm value. A salient result from my cross-sectional analysis is that I am able to distinguish the coexisting hypotheses explaining the announcement effect. Therefore, I apply five pairs of models including an interaction model and use the holding period variable as a tool to distinguish the intention of the investors. By doing so, I am able to provide evidence that the corporate governance enhancement effect is a major driver of the valuation effect following the announcement of partial stock acquisitions. Furthermore, to avoid the typical problem arising from omission of relevant variables, I try to include all theoretically relevant corporate governance variables in my cross-sectional analysis. Hence, I derive hypotheses based on a theoretical framework that explains the announcement effect. Therefore, one implication from using various hypotheses in my analysis is that measurement and specification errors are crucial challenges especially in this line of research.

This study also brings along important implications for the *regulatory debate* about new institutional investors (i.e., private equity firms and hedge funds). My results indicate that new institutional investors create value also through short-term actions. Furthermore, they seem to be important corporate governance specialists and are not only short-term oriented investors. This is contrary to the common view of some who have called for restrictions on shareholder activism by

these investors because of their allegedly hostile behavior and short-term orientation. Indeed, I report that the mean holding period for the complete sample, the hedge fund sample, and private equity sample amounts to 796, 751, and 914 calendar days, respectively. These findings are consistent with recent findings from German and US studies that show that, contrary to most of their critics, new institutional investors are not solely short-term holders. Moreover, I find a statistically significant positive stock market response to the announcement of partial stock acquisitions, which is in accord with the literature. Additionally, the results of my multivariate analysis suggest that the increase of shareholder value following the announcement of partial stock acquisitions of new institutional investors can be assigned to a significant fraction to expected corporate governance enhancement. Thus, I provide new evidence that partial stock acquisitions by new institutional investors create value by enhancing the target's corporate governance system. As a result, evidence presented in my dissertation challenges the demand for increased regulation by new institutional investors.

From a *dataset perspective* my empirical analysis reveals various challenges of empirical capital market research on corporate governance. An urgent need exists for higher quality data: for example, a particular problem that arose in my analysis is the lack of standard data samples on partial stock acquisitions in Germany. With this in mind, I construct a new and independent database named corporate governance database (CGD) for the purpose of conducting an empirical analysis on corporate governance. Assembling the CGD for my analysis was time consuming, difficult, and cumbersome. On the one hand, this allows me to derive a unique and new dataset; on the other hand, it is difficult to compare the dataset to the literature and may bring about some errors through independent data collecting. For example, the major source of large stock acquisitions provided by the BaFin (in compliance with sections 21 et seq. WpHG) is an unstructured and very rudimentary data source. I highlight three inherent problems as follows: the dataset does not indicate whether the transaction is a buy or sell transaction, it contains incorrect announcement days, and the type of acquirer has to be defined independently. Accordingly, using this dataset reduces the econometrical reliability and hence the usefulness of the results for statistical inferences. Building a standard data source would be the optimal solution; unfortunately, this was absolutely beyond the scope of this dissertation. Still, it may be an interesting research endeavor for future researchers. In my study I contribute to the literature by diligently outlining the derivation procedure to make the study as intersubjectively verifiable as possible. My dataset spans the investigation period from January 2002 to August 2008 and consists of 234 transactions in the event study sample, 186 transactions in the cross-sectional sample, and a set of explanatory as well as control variables for the multiple regression analysis. This is an innovative and hand-collected dataset which helps to shed a new light on the ability of new institutional investors to create value by enhancing the corporate governance system. Nevertheless, both the results and the process of gathering the data which is outlined in a comprehensible fashion to the reader, add value to the literature. Indeed, a key lesson learned from reviewing the literature associated with my research question and from conducting my own empirical

analysis is that researchers need more standardized data and more reliable data of better quality to enhance empirical research. This in turn will improve the results and thus will help researchers as well as practitioners.

Through my research design I confine my analysis to the short-term market reaction. It is important to note that by using only stock market reactions, expectations about future enhancement in corporate governance can be assessed. Moreover, literature suggests that the short-term effects of partial stock acquisitions seem to be much better understood than the long-term effects. Hence, an examination of the actual corporate governance events (i.e., proxy contents and takeovers) or long-term effects following the initial partial stock acquisitions certainly would enhance our understanding of this system. Therefore, a better understanding of the long-term effects certainly would improve the overall appreciation of the role of partial stock acquisitions and their valuation consequences, but it is still, methodologically, a difficult undertaking. However, my results will hopefully support further research along these lines and thus will add to the overall understanding of corporate governance.

The *sensitivity analysis* of my empirical analysis reveals important insights. First, the inclusion of different control variables in the multiple regression models shows that the results are significantly influenced by these variables. This implies, not surprisingly, that control variables are important to ensure an unbiased and therefore valid estimate of the parameter of interests. This is a lesson that prevalent German benchmark studies do not consider appropriately. Second, the sensitivity analysis of my cross-sectional analysis shows that the results of the cross-sectional models are sensitive to the choice of the event window used to calculate CAR. This should be kept in mind during the interpretation of the results. However, a detailed inspection of the relevant literature does not reveal a standard procedure in choosing the event window to calculate CAR. In empirical studies the following trade-off arises: if the chosen CAR time window is too narrow, one may miss an important part of the announcement effect; if the window is too wide, other influences might bias the result. A systematic treatment of this problem may help to improve a comparison of results and implications across different cross-sectional analysis on abnormal returns.

In my analysis I assume, in accordance with the majority of the literature, that the various internal and external *corporate governance mechanisms* are imperfect *substitutes* for one another. An interesting question is whether this is a prudent assumption or whether it is more likely to assume that the set of mechanisms are complements. I defined the corporate governance system as being a set of internal and external mechanisms that monitor and control managers. Assuming that corporate governance mechanisms are (imperfect) substitutes means that one mechanism can substitute another without affecting the overall effectiveness of the corporate governance system because there is a trade-off between different mechanisms. Complementarity, on the other hand, implies that the mechanisms are not independent of each other but rather dependent in a way that the functionality of one mechanism is affected by the effectiveness of another mechanism. Substitutability or complementarity of one mechanism for another is always a matter of degree. One mechanism is a perfect substitute for

another only if the marginal rate of substitution is constant. Imperfect substitutes, on the other hand, exhibit variable marginal rates of substitution. Hence, the respective degree or rate of substitution at a particular point is interesting. It is also important to see that the assumptions of perfect and imperfect substitutes have different consequences. The first one usually leads to a boundary solution and only the least expensive one is used. The latter leads to an inner solution, and a bundle of corporate governance mechanisms is used, which seems more realistic because in practice we observe various corporate governance provisions at work. These bundles of corporate governance mechanisms of course will vary among countries (macro-level) because of different financial systems (bank- and market-based system), corporate governance systems (insider and outsider systems), cultures, legal systems, and political systems. Moreover, these bundles will also vary among firms (micro-level) because of different monitor and control mechanisms. Altogether, the question of whether or to what degree the respective corporate governance mechanisms are substitutes and in how far these mechanisms vary among countries and firms is an open question and still deserves more research. A better understanding of this issue will certainly elaborate the understanding of corporate governance.

With respect to the *shareholder homogeneity* debate, my analysis indicates that it is important to consider that the type of large shareholder does matter when it comes to corporate governance. Moreover, it even seems important to distinguish between the intentions of the respective investors. Various US studies already consider explicitly the intention of the investors in their studies while German studies do not. One explanation for this difference between the US and German studies is that during my investigation period there was a distinctive difference in reporting requirements between the US and German stock markets. According to Schedule 13-D, investors have to disclose the intention of their investment, whereas according to §§21 WpHG, investors did not have to disclose any information regarding their intention. Nevertheless, since the enforcement of §27a WpHG in August 2008 through the risk limitation act (”Risikobegrenzungsgesetz“), Germany has regulations comparable to the US. Hence, while my study used the holding period as a tool or indicator to measure indirectly the intention of the investor, further studies could use acquisitions according to §27a WpHG and study the intention of the acquisitions directly. Considering these transactions for future empirical analysis may reveal fruitful insights. Overall, while many models of large shareholders assume that large shareholders are homogeneous, it seems important to consider heterogeneity among shareholders because different shareholders have different incentives, abilities, and skills to act as corporate monitors.

This dissertation provides new evidence that partial stock acquisitions by new institutional investors in German public corporation, indeed, can be an effective corporate governance mechanism. Knowing now the *“place for the first time”* I conclude that it is too early, though, to make definitive conclusions about the exact role of this mechanism and actor. In fact, further research is still needed to develop a better understanding of this important and intriguing research field.

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APPENDIX

APPENDIX I: ABNORMAL RETURNS OF CONSTANT MEAN RETURN MODEL

The constant mean return model assumes that the return of each security ($R_{i,\tau}$) is equal to the mean return of the security (μ_i) plus an error term (MacKinlay, 1997, p.17):

(A.I.1) $$R_{i,\tau} = \mu_i + \varepsilon_{i\tau} ,$$

whereby it is assumed that the error term ε_{it} has the following properties:

(A.II.2) $$E(\varepsilon_{i,\tau}) = 0$$

and

(A.III.3) $$Var\left(\varepsilon_{i,\tau}\right) = \sigma_{\varepsilon_i}^2.$$

The AR by using the constant mean model is calculated as:

(A.IV.4) $$AR_{i,\tau} = R_{i,\tau} - \mu_i ,$$

whereby

(A.V.5) $$\mu_i = \frac{1}{200}\sum_{\tau_1=-220}^{\tau_2-21} R_{i,\tau} ,$$

where μ_i is the simple average of security *i's* return over (-220, -21) the estimation period (Brown and Warner, 1985, pp.6-7).

APPENDIX II: DERIVATION OF OLS ESTIMATORS

The true OLS estimators α_i, β_i and $\sigma_{\varepsilon_\tau}^2$ are unknown and thus have to be estimated. OLS estimators are calculated (MacKinlay, 1997, p.20) as follows:

(AIV.1) $$\hat{\beta}_i = \frac{\sum_{\tau_1=-220}^{\tau_2=-21}(R_{i\tau}-\hat{\mu}_i)(R_{m\tau}-\hat{\mu}_m)}{\sum_{\tau_1=-220}^{\tau_2=-21}(R_{m\tau}-\hat{\mu}_m)^2} = \frac{Cov(R_{i\tau},R_{m\tau})}{Var(R_{m\tau})}$$

(AIV.2) $$\hat{\propto} = \hat{\mu}_i - \hat{\beta}_i\hat{\mu}_m$$

(AIV.3) $$\hat{\sigma}_{\varepsilon_i}^2 = \frac{1}{L_1}\sum_{\tau_1=-220}^{\tau_2=-21}(R_i - \hat{\propto}_{i\tau} + \hat{\beta}_i R_{m\tau})^2 \ ,$$

where

(AIV.4) $$\hat{\mu}_i = \frac{1}{L_1}\sum_{\tau_1=-220}^{\tau_2=-21} R_{i\tau}$$

(AIV.5) $$\hat{\mu}_m = \frac{1}{L_1}\sum_{\tau_1=-220}^{\tau_2=-21} R_{m\tau}.$$

L_1 is the length of the estimation period (–220, –21) and thus consists of 200 trading days. The estimators were estimated by using Excel 2007.

APPENDIX III: STRUCTURE OF BAFIN-SAMPLE—SAMPLE SHEET

Table Appendix 1: Example of BaFin-Sample Pursuant to sections 21 et seq. WpHG

Company	Office	Notifying party	Domicile	Holdings of voting rights directly held %	additionally counted %	Total %	Publication in Germany Official stock exchange gazette	Date
AGIV Real Estate AG	Hamburg	EnBW AG	Karlsruhe	14.2		14.2	Börsenzeitung	27.09.2002
Heidelberger Druck-maschinen AG	Heidelberg	Allianz AG	Stuttgart	0.06	5.98	6.04	Börsenzeitung	28.09.2002
...		**...**		**...**		**...**		...
Linde Aktiengesellschaft	München	Atlas-Vermögensverwaltungs-GmbH	Bad Homburg v d Höhe	9.9958	12.45	9.9958	Börsenzeitung	15.02.2006
Carl Zeiss Meditec AG	Jena	Carl Zeiss AG	Oberkochen	52.6		65.05	Börsenzeitung	16.02.2006
...		**...**		**...**		**...**		...
Siemens ag	München / Berlin	Werner Siemens-Stiftung	Zug	3.034		3.034	gem. § 26 Abs.1 WpHG erfolgt	21.01.2008
Solon AG	Berlin	Immosolar GmbH für Ener-giemanagement	Mörfelden	24.2	5.67	29.87	gem. § 26 Abs.1 WpHG erfolgt	21.01.2008

APPENDIX IV: THOMSON ONE BANKER OWNERSHIP EXCEL SHEET—SAMPLE SHEET

Table Appendix 2: T1BO Sample Sheet—Volkswagen AG

		% Ownership											
Investor Name	Investor Sub-Type	31.Mar-2005	31.Dec-2004	30. Sep-2004	30.Jun-2004	31.Mar-2004	31.Dec-2003	30.Sep-2003	30.Jun-2003	31.Mar-2003	31. Dec. 2002	30.Sep.-2002	30.Jun-2002
Étoile Gestion	Investment Advisor	0.00	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.01
Zürcher Kantonalbank	Bank and Trust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zenit SGR S.p.A.	Investment Advisor		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Yasuda PaineWebber Mutual Fund Company Ltd.	Individual Investor												0.00
Yasuda Asset Management Co., Ltd.	Investment Advisor												0.00
YMG Capital Management Inc.	Investment Advisor												0.00
WestLB Mellon Asset Management Kapitalanlagegesell	Investment Advisor	0.04	0.05	0.04	0.04	0.06	0.06	0.02	0.02	0.04	0.05	0.04	0.05
WenglerSchwab Asset Management GmbH	Investment Advisor	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weisenhorn & Partner Financial Services GmbH	Investment Advisor	0.00	0.00	0.00									
Warburg Invest Kapitalanlagegesell-schaft mbH	Investment Advisor	0.02	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06
WGZ Bank Luxembourg S.A.	Bank and Trust	0.01											
...		...		...		...		...		...		...	

APPENDIX V: COMPANIES IN THE EVENT STUDY SAMPLE

Table Appendix 3: Companies in Event Study Sample (Company No.1-No.80)

No	Company	Events	No	Company	Events
1	4SC	2	41	ecotel communication	1
2	A.S. Création Tapeten	1	42	Ehlebracht	1
3	Adidas	1	43	Elexis	2
4	ADVA Optical Networking	2	44	EPCOS	1
5	Alta Fides	1	45	Epigenomics	1
6	AMADEUS FIRE	2	46	Escada AG	1
7	Analytik Jena	2	47	euromicron communication & control technology	2
8	Arcandor	2	48	Franconofurt	1
9	ARQUES INDUSTRIES	1	49	Francotyp-Postalia Holding	1
10	artnet	1	50	freenet	1
11	Augusta Technologie	2	51	FUCHS PETROLUB	1
12	Axel Springer Verlag	1	52	GCI Management	2
13	Babcock Borsig	1	53	GEA Group	1
14	Balda AG	3	54	GFT Technologies	1
15	Beta Systems Software	1	55	Grammer	1
16	Bijou Brigitte modische Accessoires	1	56	Group Technologies	1
17	Bilfinger Berger	2	57	Hannover Rueckversicherungs	1
18	Borussia Dortmund	2	58	Hawesko Holding	1
19	Broadnet	3	59	HCI Capital	2
20	Burgbad	1	60	Heidelberger Druckmaschinen	1
21	Caatoosee	1	61	Heiler Software	2
22	cash.life	1	62	Heliad Equity Partners	3
23	CCR Logistics Systems	1	63	Hochtief	3
24	CDV Software Entertainment	1	64	HYMER	1
25	Centrotec Sustainable	3	65	Hypo Real Estate Holding	4
26	CeWe Color Holding	2	66	I:FAO	2
27	COLEXON Energy	1	67	independent capital	1
28	Colonia Real Estate	2	68	INTERHYP	2
29	Compugroup Holding	1	79	InTiCa Systems	1
30	Constantin Medien	3	70	ISRA VISION	2
31	CTS Eventim	2	71	Itelligence	1
32	Curanum	2	72	iXOS Software	1
33	CyBio	3	73	Jetter	1
34	D+S europe	4	74	Klassik Radio	2
35	Demag Cranes	1	75	Klöckner & Co	1
36	Deutsche Beteiligungs	2	76	KPS	1
37	Deutsche Börse	2	77	KUKA	1
38	Deutsche Telekom	1	78	KUNERT	1
39	Deutsche Wohnen	1	79	Lang & Schwarz Wertpapierhandelsbank	1
40	Duerr	1	80	LANXESS	2

Table Appendix 4: Companies in Event Study Sample (Company No.81-142)

No.	Company	Events	No.	Company	Events
81	Linde	1	112	REpower Systems	1
82	Loewe	1	113	Rheinmetall	3
83	MAX Automation	1	114	RHÖN-KLINIKUM	1
84	MDB	1	115	Rücker	1
85	MediGene	1	116	Salzgitter	1
86	Medion	3	117	Schaltbau Holding	1
87	MISTRAL Media	2	118	Schön & Cie	1
88	MME MOVIEMENT	1	119	Schumag	1
89	Mologen	3	120	Schwarz Pharma	1
90	MPC Münchmeyer Petersen Capital	1	121	SCHWEIZER ELECTRONIC	2
91	MTU Aero Engines Holding	1	122	SENATOR Entertainment	1
92	Munich Re	1	123	SFC Smart Fuel Cell	2
93	Netlife	1	124	Silicon Sensor International	4
94	Neue Sentimental Film	1	125	SKW Stahl-Metallurgie Holding	1
95	OHB Technology	2	126	Softing	1
96	P&I Personal & Informatik	3	127	Software	1
97	Pandatel	1	128	Solar-Fabrik	2
98	paragon	2	129	Techem	2
99	PETROTEC	1	130	technotrans	3
100	Pfeiffer Vacuum Technology	5	131	Telegate	1
101	PFLEIDERER	4	132	TFG Capital	1
102	Phoenix Solar	1	133	Thielert	4
103	PONAXIS	1	134	Tipp24	1
104	Praktiker Bau- und Heimwerkermärkte Holding	2	135	TOMORROW FOCUS	1
105	Premiere	4	136	TUI	1
106	primion Technology	1	137	Utimaco Safeware	2
107	PSI für Produkte und Systeme der Informations-technologie	1	138	Uzin Utz	1
108	Pulsion Medical Systems	3	139	Vivacon	1
109	PUMA	2	140	WashTec	8
110	PVA TePla	2	141	WIGE MEDIA	1
111	REALTECH	3	142	XING	1

APPENDIX VI: COMPANIES IN THE CROSS-SECTIONAL SAMPLE

Table Appendix 5: Companies in Cross-Sectional Sample (Company No.1-80)

No	Company	Events	No	Company	Events
1	4SC	2	41	Group Technologies	1
2	A.S. Création Tapeten	1	42	Hawesko Holding	1
3	adidas	1	43	Heidelberger Druckmaschinen	1
4	ADVA Optical Networking	2	44	Heiler Software	2
5	Analytik Jena	2	45	Hochtief	3
6	Arcandor	2	46	HYMER	1
7	Augusta Technologie	2	47	I:FAO	2
8	Babcock Borsig	1	48	InTiCa Systems	1
9	Balda	3	49	ISRA VISION	2
10	Beta Systems Software	1	50	Itelligence	1
11	Bijou Brigitte modische Accessoires	1	51	iXOS Software	1
12	Bilfinger Berger	2	52	Jetter	1
13	Borussia Dortmund	2	53	Klassik Radio	2
14	Broadnet	1	54	Klöckner & Co	1
15	burgbad	1	55	KPS	1
16	caatoosee	1	56	KUKA	1
17	CDV Software Entertainment	1	57	KUNERT	1
18	Centrotec Sustainable	3	58	LANXESS	2
19	CeWe Color Holding	2	59	Linde	1
20	COLEXON Energy	1	60	Loewe	1
21	Compugroup Holding	1	61	MAX Automation	1
22	Constantin Medien	3	62	MDB	1
23	CTS Eventim	2	63	MediGene	1
24	CyBio	3	64	Medion	3
25	D+S europe	3	65	MISTRAL Media	2
26	Demag Cranes	1	66	MTU Aero Engines Holding	1
27	Deutsche Telekom	1	67	Netlife	1
28	Duerr	1	68	Neue Sentimental Film	1
29	ecotel communication	1	69	OHB Technology	2
30	Ehlebracht	1	70	P&I Personal & Informatik	3
31	elexis	2	71	Pandatel	1
32	EPCOS	1	72	paragon	2
33	Epigenomics	1	73	PETROTEC	1
34	Escada	1	74	Pfeiffer Vacuum Technology	5
35	euromicron AG communication & control technology	2	75	PFLEIDERER	4
36	freenet	1	76	Phoenix Solar	1
37	FUCHS PETROLUB	1	77	Praktiker Bau- und Heimwerkermärkte Holding	2
38	GEA Group	1	78	Premiere	4
39	GFT Technologies	1	79	primion Technology	1
40	Grammer	1	80	PSI für Produkte und Systeme der Informations-technologie	1

Table Appendix 6: Companies in Cross-Sectional Sample (Company No.81-112)

No	Company	Events	No	Company	Events
81	Pulsion Medical Systems	3	97	SKW Stahl-Metallurgie Holding	1
82	PUMA	2	98	Softing	1
83	PVA TePla	2	99	Software	1
84	REALTECH	3	100	Solar-Fabrik	2
85	REpower Systems	1	101	Techem	2
86	Rheinmetall	3	102	technotrans	3
87	Rücker	1	103	Telegate	1
88	Salzgitter	1	104	Thielert	4
89	Schaltbau Holding	1	105	Tipp24	1
90	Schön & Cie	1	106	TOMORROW FOCUS	1
91	Schumag	1	107	TUI	1
92	Schwarz Pharma	1	108	Utimaco Safeware	2
93	SCHWEIZER ELECTRONIC	2	109	Uzin Utz	1
94	SENATOR Entertainment	1	110	WashTec	8
95	SFC Smart Fuel Cell	2	111	WIGE MEDIA	1
96	Silicon Sensor International	4	112	XING	1

APPENDIX VII: RESULTS OF EVENT STUDY ANALYSIS

Table Appendix 7: AR and CAAR for Event Study Sample

AR for *EVENT STUDY SAMPLE* (N=234)			CAAR for *EVENT STUDY SAMPLE* (N=234)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in%)	(6) t_{CAAR}
–20	-0.022	-0.1150	–20; –20	-0.022	-0.1150
–19	-0.100	-0.5227	–20; –19	-0.122	-0.4509
–18	0.042	0.2194	–20; –18	-0.080	-0.2415
–17	0.210	1.0998	–20; –17	0.130	0.3407
–16	0.212	1.1089	–20; –16	0.343	0.8007
–15	-0.165	-0.8630	–20; –15	0.177	0.3786
–14	-0.430**	-2.2487	–20; –14	-0.253	-0.4994
–13	0.266	1.3909	–20; –13	0.013	0.0246
–12	0.098	0.5126	–20; –12	0.111	0.1940
–11	-0.532***	-2.7815	–20; –11	-0.421	-0.6955
–10	-0.234	-1.2233	–20; –10	-0.655	-1.0320
–9	0.304	1.5906	–20; –9	-0.351	-0.5289
–8	-0.134	-0.7026	–20; –8	-0.485	-0.7030
–7	0.085	0.4454	–20; –7	-0.400	-0.5584
–6	0.230	1.2016	–20; –6	-0.170	-0.2292
–5	0.005	0.0286	–20; –5	-0.164	-0.2148
–4	0.036	0.1869	–20; –4	-0.129	-0.1630
–3	0.262	1.3709	–20; –3	0.134	0.1647
–2	0.479**	2.5036	–20; –2	0.613	0.7347
–1	0.158	0.8273	–20; –1	0.771	0.9010
0	0.926***	4.8377	–20; –0	1.697*	1.9350
+1	0.208	1.0861	–20;+1	1.904**	2.1221
+2	0.391**	2.0454	–20;+2	2.296**	2.5019
+3	0.235	1.2303	–20;+3	2.531***	2.7004
+4	0.051	0.2663	–20;+4	2.582***	2.6991
+5	0.225	1.1750	–20;+5	2.807***	2.8771
+6	0.427**	2.2297	–20;+6	3.234***	3.2524
+7	-0.109	-0.5719	–20;+7	3.124***	3.0857
+8	0.167	0.8737	–20;+8	3.291***	3.1943
+9	-0.072	-0.3766	–20;+9	3.219***	3.0719
+10	-0.178	-0.9282	–20;+10	3.042***	2.8552
+11	-0.001	-0.0028	–20;+11	3.041***	2.8097
+12	-0.403**	-2.1080	–20;+12	2.638**	2.3999
+13	-0.262	-1.3703	–20;+13	2.376**	2.1293
+14	-0.041	-0.2151	–20;+14	2.334**	2.0623
+15	0.136	0.7110	–20;+15	2.471**	2.1520
+16	-0.168	-0.8762	–20;+16	2.303**	1.9787
+17	-0.403**	-2.1084	–20;+17	1.899	1.6104
+18	0.070	0.3674	–20;+18	1.970*	1.6485
+19	0.250	1.3067	–20;+19	2.220*	1.8343
+20	-0.164	-0.8583	–20;+20	2.056*	1.6778

(*) t_{AR} and t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

Table Appendix 8: AR and CAAR for Cross-Sectional Sample

AR for *CROSS-SECTIONAL SAMPLE* (N=186)			CAAR for *CROSS-SECTIONAL SAMPLE* (N=186)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in%)	(6) t_{CAAR}
–20	0.085	0.3910	–20; –20	0.085	0.3910
–19	-0.278	-1.2734	–20; –19	-0.192	-0.6239
–18	-0.051	-0.2332	–20; –18	-0.243	-0.6441
–17	0.264	1.2096	–20; –17	0.020	0.0470
–16	0.160	0.7322	–20; –16	0.180	0.3695
–15	-0.081	-0.3707	–20; –15	0.099	0.1859
–14	-0.525**	-2.4092	–20; –14	-0.426	-0.7385
–13	0.197	0.9035	–20; –13	-0.229	-0.3713
–12	0.185	0.8465	–20; –12	-0.044	-0.0679
–11	-0.564***	-2.5870	–20; –11	-0.608	-0.8825
–10	-0.106	-0.4855	–20; –10	-0.714	-0.9878
–9	0.275	1.2595	–20; –9	-0.440	-0.5822
–8	-0.232	-1.0639	–20; –8	-0.672	-0.8544
–7	0.048	0.2217	–20; –7	-0.623	-0.7641
–6	0.133	0.6116	–20; –6	-0.490	-0.5803
–5	0.090	0.4107	–20; –5	-0.400	-0.4592
–4	0.021	0.0983	–20; –4	-0.379	-0.4216
–3	0.294	1.3481	–20; –3	-0.085	-0.0920
–2	0.505**	2.3146	–20; –2	0.420	0.4415
–1	0.061	0.2777	–20; –1	0.480	0.4924
0	0.930***	4.2667	–20; –0	1.410	1.4116
+1	0.185	0.8463	–20;+1	1.595	1.5596
+2	0.463**	2.1252	–20;+2	2.058**	1.9684
+3	0.295	1.3540	–20;+3	2.353**	2.2033
+4	-0.022	-0.0995	–20;+4	2.331**	2.1389
+5	0.339	1.5571	–20;+5	2.671**	2.4028
+6	0.251	1.1492	–20;+6	2.921***	2.5790
+7	0.025	0.1163	–20;+7	2.947**	2.5545
+8	0.126	0.5771	–20;+8	3.073***	2.6172
+9	-0.002	-0.0102	–20;+9	3.070**	2.5714
+10	-0.102	-0.4676	–20;+10	2.968**	2.4456
+11	0.180	0.8248	–20;+11	3.148**	2.5529
+12	-0.448**	-2.0572	–20;+12	2.700**	2.1558
+13	-0.251	-1.1501	–20;+13	2.449*	1.9266
+14	-0.119	-0.5449	–20;+14	2.330*	1.8068
+15	-0.010	-0.0453	–20;+15	2.320*	1.7740
+16	-0.207	-0.9494	–20;+16	2.113	1.5937
+17	-0.348	-1.5962	–20;+17	1.765	1.3137
+18	0.055	0.2522	–20;+18	1.820	1.3371
+19	0.257	1.1797	–20;+19	2.078	1.5068
+20	-0.224	-1.0265	–20;+20	1.854	1.3280

(*) t_{AR} and t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

APPENDIX VIII: RESULT OF SENSITIVITY ANALYSIS—EVENT STUDY

Table Appendix 9: AR and CAAR for Non-Overlapping Event Study Sample

AR for Non-Overlapping Event Study Sample (N=164)			CAAR for Non-Overlapping Event Study Sample (N=164)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in%)	(6) t_{CAAR}
–20	-0.007	-0.0316	–20; –20	-0.007	-0.0316
–19	-0.083	-0.3997	–20; –19	-0.090	-0.3050
–18	0.093	0.4479	–20; –18	0.003	0.0096
–17	0.300	1.4409	–20; –17	0.304	0.7287
–16	0.180	0.8649	–20; –16	0.484	1.0386
–15	-0.286	-1.3722	–20; –15	0.198	0.3879
–14	-0.415**	-1.9941	–20; –14	-0.218	-0.3946
–13	0.179	0.8587	–20; –13	-0.039	-0.0655
–12	0.132	0.6358	–20; –12	0.094	0.1502
–11	-0.463**	-2.2226	–20; –11	-0.369	-0.5604
–10	-0.084	-0.4047	–20; –10	-0.454	-0.6563
–9	0.266	1.2761	–20; –9	-0.188	-0.2600
–8	-0.143	-0.6846	–20; –8	-0.330	-0.4397
–7	0.181	0.8695	–20; –7	-0.149	-0.1913
–6	0.150	0.7216	–20; –6	0.001	0.0015
–5	-0.032	-0.1513	–20; –5	-0.030	-0.0364
–4	0.123	0.5910	–20; –4	0.093	0.1081
–3	0.298	1.4282	–20; –3	0.390	0.4417
–2	0.461**	2.2141	–20; –2	0.852	0.9378
–1	0.159	0.7611	–20; –1	1.010	1.0843
0	0.801***	3.8455	–20; –0	1.811*	1.8973
+1	0.095	0.4569	–20;+1	1.907*	1.9511
+2	0.476**	2.2833	–20;+2	2.382**	2.3843
+3	0.263	1.2626	–20;+3	2.645***	2.5918
+4	-0.021	-0.1020	–20;+4	2.624**	2.5191
+5	0.207	0.9932	–20;+5	2.831***	2.6649
+6	0.565***	2.7100	–20;+6	3.396***	3.1366
+7	-0.050	-0.2378	–20;+7	3.346***	3.0352
+8	0.193	0.9269	–20;+8	3.539***	3.1545
+9	-0.056	-0.2688	–20;+9	3.483***	3.0524
+10	-0.133	-0.6404	–20;+10	3.350***	2.8877
+11	0.048	0.2324	–20;+11	3.398***	2.8834
+12	-0.509**	-2.4445	–20;+12	2.889**	2.4138
–20,+13	-0.340	-1.6306	–20;+13	2.549**	2.0984
+14	-0.043	-0.2073	–20;+14	2.506**	2.0332
+15	0.174	0.8350	–20;+15	2.680**	2.1439
+16	-0.168	-0.8046	–20;+16	2.512**	1.9824
+17	-0.419**	-2.0105	–20;+17	2.093	1.6300
+18	0.070	0.3378	–20;+18	2.164*	1.6631
+19	0.202	0.9698	–20;+19	2.366*	1.7955
+20	-0.098	-0.4682	–20;+20	2.268*	1.7004

(*)t_{CAAR} and t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

Table Appendix 10: AR and CAAR for Non-Overlapping Cross-Sectional Sample

AR for Non-Overlapping Cross-Sectional Sample (N=164)			CAAR for Non-Overlapping Cross-Sectional Sample (N=164)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in%)	(6) t_{CAAR}
–20	0.129	0.5447	–20; –20	0.129	0.5447
–19	-0.276	-1.1677	–20; –19	-0.147	-0.4405
–18	-0.007	-0.0293	–20; –18	-0.154	-0.3766
–17	0.351	1.4876	–20; –17	0.197	0.4177
–16	0.154	0.6519	–20; –16	0.351	0.6651
–15	-0.254	-1.0740	–20; –15	0.098	0.1687
–14	-0.450*	-1.9039	–20; –14	-0.352	-0.5635
–13	0.115	0.4852	–20; –13	-0.237	-0.3555
–12	0.209	0.8870	–20; –12	-0.028	-0.0395
–11	-0.595**	-2.5179	–20; –11	-0.623	-0.8337
–10	0.055	0.2329	–20; –10	-0.568	-0.7247
–9	0.247	1.0476	–20; –9	-0.320	-0.3914
–8	-0.248	-1.0496	–20; –8	-0.568	-0.6672
–7	0.140	0.5937	–20; –7	-0.428	-0.4842
–6	0.080	0.3371	–20; –6	-0.348	-0.3808
–5	-0.029	-0.1214	–20; –5	-0.377	-0.3990
–4	0.092	0.3913	–20; –4	-0.284	-0.2922
–3	0.350	1.4837	–20; –3	0.066	0.0657
–2	0.480**	2.0334	–20; –2	0.546	0.5305
–1	0.104	0.4405	–20; –1	0.650	0.6155
0	0.821***	3.4789	–20; –0	1.471	1.3598
+1	0.144	0.6088	–20;+1	1.615	1.4584
+2	0.543**	2.3013	–20;+2	2.159*	1.9062
+3	0.367	1.5552	–20;+3	2.526**	2.1835
+4	-0.064	-0.2726	–20;+4	2.461**	2.0849
+5	0.363	1.5372	–20;+5	2.824**	2.3458
+6	0.403*	1.7088	–20;+6	3.228***	2.6308
+7	0.049	0.2078	–20;+7	3.277***	2.6227
+8	0.197	0.8360	–20;+8	3.474***	2.7323
+9	0.072	0.3046	–20;+9	3.546***	2.7420
+10	-0.098	-0.4151	–20;+10	3.448***	2.6229
+11	0.260	1.1028	–20;+11	3.709***	2.7765
+12	-0.558**	-2.3647	–20;+12	3.150**	2.3225
–20,+13	-0.310	-1.3134	–20;+13	2.840**	2.0628
+14	-0.090	-0.3813	–20;+14	2.750**	1.9687
+15	0.081	0.3435	–20;+15	2.831**	1.9984
+16	-0.235	-0.9933	–20;+16	2.597*	1.8079
+17	-0.338	-1.4316	–20;+17	2.259	1.5517
+18	0.077	0.3270	–20;+18	2.336	1.5841
+19	0.219	0.9274	–20;+19	2.555*	1.7108
+20	-0.130	-0.5491	–20;+20	2.425	1.6040

(*)t_{AR} and t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

Table Appendix 11: AR for Event Study Sample—Choice of t*-statistics*

AR for Event Study Sample (N=234)						
(1) Day	(2) AR (in %)	(3)	(4) t_{AR} (*)	(5) t_{SAR}(#)	(6) t_{SCAR} (+)	(7) t_{rank} (i)
–20	-0.022		-0.1150	-0.2137	-0.1807	0.7470
–19	-0.100		-0.5227	-0.5845	-0.4944	-0.5458
–18	0.042		0.2194	0.1972	0.1668	0.7732
–17	0.210		1.0998	0.4384	0.3708	0.9174
–16	0.212		1.1089	0.6592	0.5576	0.7086
–15	-0.165		-0.8630	0.0341	0.0288	-0.3670
–14	-0.430**	##+ii	-2.2487	-2.1286	-1.8005	-2.3740
–13	0.266		1.3909	1.3331	1.1276	0.9698
–12	0.098		0.5126	0.4681	0.3960	1.0653
–11	-0.532***	###+++iii	-2.7815	-4.0948	-3.4636	-3.2633
–10	-0.234	##+	-1.2233	-2.1937	-1.8556	-1.4594
–9	0.304	ii	1.5906	1.2509	1.0581	2.0585
–8	-0.134		-0.7026	-0.1661	-0.1405	-0.4156
–7	0.085		0.4454	0.5112	0.4324	0.3164
–6	0.230		1.2016	0.8414	0.7117	1.2029
–5	0.005		0.0286	0.5534	0.4681	0.0974
–4	0.036		0.1869	0.3483	0.2946	0.2331
–3	0.262		1.3709	1.0531	0.8907	1.6223
–2	0.479**	##++ii	2.5036	2.5509	2.1577	2.0080
–1	0.158		0.8273	1.3432	1.1361	0.1928
0	0.926***	###+++iii	4.8377	5.5002	4.6524	3.0901
+1	0.208		1.0861	0.7855	0.6644	-0.3145
+2	0.391**	##++	2.0454	2.3998	2.0299	0.6066
+3	0.235		1.2303	1.1407	0.9649	0.9483
+4	0.051		0.2663	-0.5675	-0.4800	0.0374
+5	0.225	#	1.1750	1.8341	1.5514	1.0793
+6	0.427**	##+ii	2.2297	2.3095	1.9535	2.1708
+7	-0.109		-0.5719	-1.1222	-0.9492	-0.8107
+8	0.167		0.8737	0.7035	0.5951	0.9679
+9	-0.072		-0.3766	-0.2534	-0.2143	0.0440
+10	-0.178		-0.9282	-0.9657	-0.8169	-1.0513
+11	-0.001		-0.0028	-0.0850	-0.0719	0.1891
+12	-0.403**	## +i	-2.1080	-2.1622	-1.8289	-1.9275
+13	-0.262		-1.3703	-1.3956	-1.1805	-0.8547
+14	-0.041		-0.2151	0.1793	0.1516	0.4250
+15	0.136		0.7110	0.7578	0.6410	-0.2237
+16	-0.168		-0.8762	-1.6322	-1.3806	-0.9136
+17	-0.403**	#i	-2.1084	-1.6735	-1.4155	-1.8909
+18	0.070		0.3674	0.3004	0.2541	0.6899
+19	0.250		1.3067	1.3612	1.1514	0.9773
+20	-0.164		-0.8583	-0.3448	-0.2917	-1.2563

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels; (#) t_{CSAR} is the value of the parametric *t*-test according to Patell (1976), I use "#" to indicate significance levels; (+) t_{CSCAR} is the value of the parametric *t*-test according to Boehmer et al. (1991), I use "+" to indicate significance levels; (#); t_{rank} is the value of the non-parametric *t*-test according to Corrado (1989) I use "#" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively.

Table Appendix 12: CAAR for Event Study Sample—Choice of t*-statistics*

CAAR for Event Study Sample (N=234)						
(1) Window (days)	(2) CAAR (in%)	(3)	(4) t_{CAAR} (*)	(5) t_{CSAR}(#)	(6) t_{CSCAR} (+)	(7) t_{rank} (i)
–20; –20	-0.022		-0.1150	-0.2137	-0.1807	0.7470
–20; –19	-0.122		-0.4509	-0.5644	-0.4774	0.1423
–20; –18	-0.080		-0.2415	-0.3470	-0.2935	0.5626
–20; –17	0.130		0.3407	-0.0813	-0.0688	0.9459
–20; –16	0.343		0.8007	0.2221	0.1879	1.1630
–20; –15	0.177		0.3786	0.2167	0.1833	0.9118
–20; –14	-0.253		-0.4994	-0.6040	-0.5109	-0.0531
–20; –13	0.013		0.0246	-0.0936	-0.0792	0.2932
–20; –12	0.111		0.1940	0.0678	0.0573	0.6316
–20; –11	-0.421		-0.6955	-1.2306	-1.0409	-0.4328
–20; –10	-0.655	#	-1.0320	-1.8348	-1.5519	-0.8527
–20; –9	-0.351		-0.5289	-1.3955	-1.1804	-0.2221
–20; –8	-0.485		-0.7030	-1.3869	-1.1731	-0.3287
–20; –7	-0.400		-0.5584	-1.1998	-1.0148	-0.2322
–20; –6	-0.170		-0.2292	-0.9418	-0.7967	0.0863
–20; –5	-0.164		-0.2148	-0.7736	-0.6544	0.1079
–20; –4	-0.129		-0.1630	-0.6660	-0.5634	0.1612
–20; –3	0.134		0.1647	-0.3991	-0.3376	0.5390
–20; –2	0.613		0.7347	0.1968	0.1665	0.9853
–20; –1	0.771		0.9010	0.4921	0.4163	1.0035
–20; –0	1.697*	#i	1.9350	1.6805	1.4215	1.6536
–20;+1	1.904*	#	2.1221	1.8094	1.5305	1.5485
–20;+2	2.296**	##+	2.5019	2.2700	1.9201	1.6410
–20;+3	2.531***	##++i	2.7004	2.4550	2.0766	1.8000
–20;+4	2.582***	##+i	2.6991	2.2919	1.9386	1.7711
–20;+5	2.807***	###++i	2.8771	2.6071	2.2053	1.9484
–20;+6	3.234***	###++ii	3.2524	3.0028	2.5400	2.3298
–20;+7	3.124***	###++ii	3.0857	2.7367	2.3148	2.1346
–20;+8	3.291***	###++ii	3.1943	2.8197	2.3851	2.2772
–20;+9	3.219***	###++ii	3.0719	2.7261	2.3059	2.2469
–20;+10	3.042***	##++ii	2.8552	2.5083	2.1216	2.0216
–20;+11	3.041***	##++ii	2.8097	2.4537	2.0755	2.0232
–20;+12	2.638***	##+i	2.3999	2.0399	1.7255	1.6568
–20;+13	2.376**	#	2.1293	1.7703	1.4974	1.4857
–20;+14	2.334**	#	2.0623	1.7751	1.5015	1.5361
–20;+15	2.471**	#	2.1520	1.8766	1.5873	1.4773
–20;+16	2.303**		1.9787	1.5828	1.3388	1.3070
–20;+17	1.899		1.6104	1.2903	1.0914	0.9830
–20;+18	1.970*		1.6485	1.3218	1.1180	1.0808
–20;+19	2.220*		1.8343	1.5204	1.2860	1.2217
–20;+20	2.056*		1.6778	1.4479	1.2247	1.0105

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels; (#) t_{CSAR} is the value of the parametric *t*-test according to Patell (1976), I use "#" to indicate significance levels; (+) t_{CSCAR} is the value of the parametric *t*-test according to Boehmer et al. (1991), I use "+" to indicate significance levels; (#); t_{rank} is the value of the non-parametric *t*-test according to Corrado (1989) I use "#" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively.

Table Appendix 13: AR for Cross-Sectional Sample—choice of t*-statistics*

AR for Event Study Sample (N=234)						
(1) Day	(2) AR (in %)	(3)	(4) t_{AR} (*)	(5) t_{SAR}(#)	(6) t_{SCAR} (+)	(7) t_{rank} (i)
–20	0.085		0.3910	0.3261	0.2866	1.4469
–19	-0.278		-1.2734	-1.3080	-1.1493	-0.8633
–18	-0.051		-0.2332	-0.1446	-0.1270	0.5047
–17	0.264		1.2096	0.9705	0.8527	1.5003
–16	0.160		0.7322	0.0209	0.0184	-0.0491
–15	-0.081		-0.3707	0.5813	0.5108	0.1910
–14	-0.525**	##++ii	-2.4092	-2.3037	-2.0242	-2.4393
–13	0.197		0.9035	1.0393	0.9132	0.8472
–12	0.185		0.8465	0.5958	0.5235	0.7747
–11	-0.564***	###+++iii	-2.5870	-3.3467	-2.9406	-3.5907
–10	-0.106		-0.4855	-1.0565	-0.9283	-1.2047
–9	0.275	i	1.2595	1.1665	1.0250	1.6753
–8	-0.232		-1.0639	-0.6936	-0.6094	-0.4716
–7	0.048		0.2217	0.5382	0.4729	-0.0555
–6	0.133		0.6116	0.1577	0.1385	0.0704
–5	0.090		0.4107	0.8504	0.7472	0.5399
–4	0.021		0.0983	0.3235	0.2842	0.3831
–3	0.294	i	1.3481	1.0813	0.9501	1.7969
–2	0.505**	##+i	2.3146	2.1320	1.8733	1.7094
–1	0.061		0.2777	0.2735	0.2404	-0.3841
0	0.930***	###+++iii	4.2667	4.7217	4.1488	2.7701
+1	0.185		0.8463	0.3582	0.3147	0.2219
+2	0.463**	##++	2.1252	2.3128	2.0322	0.7160
+3	0.295		1.3540	1.0398	0.9136	0.4844
+4	-0.022		-0.0995	-0.7760	-0.6818	-0.3991
+5	0.339	##++i	1.5571	2.2811	2.0043	1.6689
+6	0.251		1.1492	1.5572	1.3683	1.5707
+7	0.025		0.1163	-0.3164	-0.2780	-0.0715
+8	0.126		0.5771	0.2387	0.2097	0.4065
+9	-0.002		-0.0102	0.4328	0.3803	0.4887
+10	-0.102		-0.4676	-0.5743	-0.5046	-1.1364
+11	0.180		0.8248	0.7428	0.6527	1.2335
+12	-0.448**	#+i	-2.0572	-1.9340	-1.6993	-1.7297
+13	-0.251		-1.1501	-1.3626	-1.1973	-0.4919
+14	-0.119		-0.5449	-0.4605	-0.4046	-0.1195
+15	-0.010		-0.0453	-0.1429	-0.1255	-0.6936
+16	-0.207		-0.9494	-1.6197	-1.4232	-0.5944
+17	-0.348		-1.5962	-1.1750	-1.0325	-1.3285
+18	0.055		0.2522	0.0981	0.0862	0.4183
+19	0.257		1.1797	1.2360	1.0860	0.6338
+20	-0.224		-1.0265	-0.6750	-0.5931	-1.3061

(*) t_{AR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels; (#) t_{SAR} is the value of the parametric *t*-test according to Patell (1976), I use "#" to indicate significance levels; (+) t_{SCAR} is the value of the parametric *t*-test according to Boehmer et al. (1991), I use "+" to indicate significance levels; (#); t_{rank} is the value of the non-parametric *t*-test according to Corrado (1989) I use "#" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively.

Table Appendix 14: CAAR for Cross-Sectional Sample—Choice of t*-statistics*

CAAR for Cross-Sectional Sample (N=234)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Window (days)	CAAR (in%)		t_{CAAR} (*)	t_{CSAR}(#)	t_{CSCAR} (+)	t_{rank} (i)
–20; –20	0.085		0.3910	0.3261	0.2866	1.4469
–20; –19	-0.192		-0.6239	-0.6943	-0.6100	0.4127
–20; –18	-0.243		-0.6441	-0.6503	-0.5714	0.6284
–20; –17	0.020		0.0470	-0.0780	-0.0685	1.2943
–20; –16	0.180		0.3695	-0.0604	-0.0531	1.1357
–20; –15	0.099		0.1859	0.1822	0.1601	1.1148
–20; –14	-0.426		-0.7385	-0.7021	-0.6169	0.1101
–20; –13	-0.229		-0.3713	-0.2893	-0.2542	0.4025
–20; –12	-0.044		-0.0679	-0.0742	-0.0652	0.6377
–20; –11	-0.608		-0.8825	-1.1287	-0.9917	-0.5304
–20; –10	-0.714		-0.9878	-1.3947	-1.2255	-0.8690
–20; –9	-0.440		-0.5822	-0.9985	-0.8774	-0.3484
–20; –8	-0.672		-0.8544	-1.1517	-1.0120	-0.4655
–20; –7	-0.623		-0.7641	-0.9660	-0.8488	-0.4634
–20; –6	-0.490		-0.5803	-0.8925	-0.7843	-0.4295
–20; –5	-0.400		-0.4592	-0.6516	-0.5725	-0.2809
–20; –4	-0.379		-0.4216	-0.5537	-0.4865	-0.1796
–20; –3	-0.085		-0.0920	-0.2832	-0.2489	0.2490
–20; –2	0.420		0.4415	0.2134	0.1875	0.6345
–20; –1	0.480		0.4924	0.2692	0.2365	0.5326
–20; –0	1.410		1.4116	1.2931	1.1362	1.1242
–20;+1	1.595		1.5596	1.3397	1.1772	1.1457
–20;+2	2.058**	#	1.9684	1.7925	1.5750	1.2698
–20;+3	2.353**	##+	2.2033	1.9670	1.7284	1.3419
–20;+4	2.331**	#	2.1389	1.7721	1.5571	1.2350
–20;+5	2.671**	##+	2.4028	2.1850	1.9199	1.5383
–20;+6	2.921***	##++i	2.5790	2.4439	2.1473	1.8119
–20;+7	2.947**	##++i	2.5545	2.3400	2.0561	1.7657
–20;+8	3.073***	###++i	2.6172	2.3436	2.0593	1.8105
–20;+9	3.070**	##++i	2.5714	2.3833	2.0941	1.8693
–20;+10	2.968**	##++	2.4456	2.2414	1.9694	1.6348
–20;+11	3.148**	##++i	2.5529	2.3374	2.0538	1.8271
–20;+12	2.700**	##+	2.1558	1.9650	1.7266	1.4981
–20;+13	2.449*	#	1.9266	1.7022	1.4957	1.3915
–20;+14	2.330*		1.8068	1.5999	1.4058	1.3513
–20;+15	2.320*		1.7740	1.5537	1.3652	1.2168
–20;+16	2.113		1.5937	1.2663	1.1126	1.1025
–20;+17	1.765		1.3137	1.0589	0.9304	0.8724
–20;+18	1.820		1.3371	1.0609	0.9322	0.9281
–20;+19	2.078		1.5068	1.2430	1.0922	1.0167
–20;+20	1.854		1.3280	1.1224	0.9862	0.8002

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels; (#) t_{CSAR} is the value of the parametric *t*-test according to Patell (1976), I use "#" to indicate significance levels; (+) t_{CSCAR} is the value of the parametric *t*-test according to Boehmer et al. (1991), I use "+" to indicate significance levels; (#); t_{rank} is the value of the non-parametric *t*-test according to Corrado (1989) I use "#" to indicate significance levels. See Subsection 4.1.1 for more details regarding the test statistics; significance level, where 1%, 5%, and 10% level are ***, **, *, respectively.

Table Appendix 15: CAAR with Constant Mean Return Model—Event Study Sample

AR for Event Study Sample—Constant Mean Return Model (N=234)			CAAR for Event Study Sample—Constant Mean Return Model (N=234)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in%)	(6) t_{CAAR}
–20	-0.090	-0.4477	–20; –20	-0.090	-0.4477
–19	-0.090	-0.4497	–20; –19	-0.180	-0.6346
–18	0.034	0.1721	–20; –18	-0.145	-0.4187
–17	0.128	0.6396	–20; –17	-0.017	-0.0428
–16	0.057	0.2841	–20; –16	0.040	0.0888
–15	-0.254	-1.2697	–20; –15	-0.214	-0.4373
–14	-0.558***	-2.7906	–20; –14	-0.773	-1.4596
–13	0.246	1.2307	–20; –13	-0.526	-0.9302
–12	-0.014	-0.0719	–20; –12	-0.541	-0.9010
–11	-0.427**	-2.1341	–20; –11	-0.968	-1.5296
–10	-0.319	-1.5962	–20; –10	-1.287*	-1.9397
–9	0.295	1.4722	–20; –9	-0.993	-1.4322
–8	-0.177	-0.8841	–20; –8	-1.169	-1.6212
–7	0.148	0.7416	–20; –7	-1.021	-1.3640
–6	0.087	0.4335	–20; –6	-0.934	-1.2059
–5	-0.037	-0.1830	–20; –5	-0.971	-1.2133
–4	-0.045	-0.2273	–20; –4	-1.016	-1.2322
–3	0.469**	2.3443	–20; –3	-0.547	-0.6450
–2	0.360	1.7985	–20; –2	-0.188	-0.2152
–1	0.159	0.7924	–20; –1	-0.029	-0.0325
0	0.919***	4.5951	–20; –0	0.890	0.9710
+1	0.251	1.2530	–20;+1	1.141	1.2158
+2	0.421**	2.1065	–20;+2	1.562	1.6283
+3	0.230	1.1491	–20;+3	1.792*	1.8286
+4	0.008	0.0393	–20;+4	1.800*	1.7995
+5	0.133	0.6648	–20;+5	1.933*	1.8949
+6	0.348*	1.7379	–20;+6	2.281**	2.1940
+7	0.021	0.1067	–20;+7	2.302**	2.1746
+8	0.135	0.6763	–20;+8	2.437**	2.2624
+9	-0.185	-0.9254	–20;+9	2.252**	2.0554
+10	-0.215	-1.0771	–20;+10	2.037*	1.8285
+11	0.090	0.4504	–20;+11	2.127*	1.8793
+12	-0.459**	-2.2939	–20;+12	1.668	1.4513
–20,+13	-0.276	-1.3807	–20;+13	1.392	1.1931
+14	-0.153	-0.7626	–20;+14	1.239	1.0470
+15	0.104	0.5203	–20;+15	1.343	1.1190
+16	-0.243	-1.2132	–20;+16	1.101	0.9044
+17	-0.307	-1.5368	–20;+17	0.793	0.6431
+18	-0.205	-1.0239	–20;+18	0.588	0.4708
+19	0.140	0.6996	–20;+19	0.728	0.5755
+20	-0.258	-1.2879	–20;+20	0.471	0.3673

(*) t_{AR} and t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

Table Appendix 16: CAAR with Constant Mean Return Model—Cross-Sectional Sample

AR for Cross-Sectional Sample—Constant Mean Return Model (N=186)			CAAR for Cross-Sectional Sample—Constant Mean Return Model (N=186)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in %)	(6) t_{CAAR}
–20	0.020	0.0877	–20; –20	0.020	0.0877
–19	-0.261	-1.1537	–20; –19	-0.241	-0.7538
–18	-0.099	-0.4385	–20; –18	-0.341	-0.8686
–17	0.213	0.9413	–20; –17	-0.128	-0.2816
–16	0.016	0.0698	–20; –16	-0.112	-0.2206
–15	-0.205	-0.9060	–20; –15	-0.317	-0.5713
–14	-0.615***	-2.7165	–20; –14	-0.932	-1.5556
–13	0.148	0.6515	–20; –13	-0.784	-1.2248
–12	0.111	0.4906	–20; –12	-0.673	-0.9912
–11	-0.505**	-2.2295	–20; –11	-1.178	-1.6454
–10	-0.178	-0.7848	–20; –10	-1.356*	-1.8055
–9	0.250	1.1052	–20; –9	-1.105	-1.4095
–8	-0.239	-1.0575	–20; –8	-1.345*	-1.6475
–7	0.105	0.4642	–20; –7	-1.240	-1.4635
–6	0.062	0.2726	–20; –6	-1.178	-1.3435
–5	0.117	0.5148	–20; –5	-1.062	-1.1722
–4	-0.089	-0.3930	–20; –4	-1.151	-1.2325
–3	0.510**	2.2522	–20; –3	-0.641	-0.6669
–2	0.385*	1.7016	–20; –2	-0.255	-0.2587
–1	0.010	0.0436	–20; –1	-0.245	-0.2424
0	0.871***	3.8463	–20; –0	0.625	0.6027
+1	0.177	0.7796	–20;+1	0.802	0.7551
+2	0.442*	1.9536	–20;+2	1.244	1.1458
+3	0.303	1.3399	–20;+3	1.548	1.3952
+4	-0.038	-0.1689	–20;+4	1.509	1.3332
+5	0.277	1.2238	–20;+5	1.786	1.5474
+6	0.198	0.8760	–20;+6	1.985*	1.6870
+7	0.226	0.9972	–20;+7	2.210*	1.8451
+8	0.106	0.4665	–20;+8	2.316*	1.8996
+9	-0.118	-0.5224	–20;+9	2.198*	1.7723
+10	-0.200	-0.8854	–20;+10	1.997	1.5845
+11	0.197	0.8712	–20;+11	2.195*	1.7135
+12	-0.499**	-2.2027	–20;+12	1.696	1.3039
+13	-0.266	-1.1751	–20;+13	1.430	1.0831
+14	-0.270	-1.1924	–20;+14	1.160	0.8659
+15	-0.051	-0.2240	–20;+15	1.109	0.8165
+16	-0.225	-0.9927	–20;+16	0.884	0.6422
+17	-0.242	-1.0679	–20;+17	0.643	0.4604
+18	-0.201	-0.8883	–20;+18	0.442	0.3123
+19	0.111	0.4911	–20;+19	0.553	0.3860
+20	-0.376	-1.6602	–20;+20	0.177	0.1220

(*) t_{AR} and t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

Table Appendix 17: AR and CAAR for Event Study Sample—Adjusted for Outliers

AR for Event Study Sample—Constant Mean Return Model (N=230)			CAAR for Cross-Sectional Sample—Constant Mean Return Model (N=182)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in%)	(6) t_{CAAR}
–20	-0.031	-0.1632	–20; –20	-0.031	-0.1632
–19	-0.110	-0.5731	–20; –19	-0.141	-0.5206
–18	0.050	0.2580	–20; –18	-0.092	-0.2761
–17	0.211	1.0977	–20; –17	0.119	0.3097
–16	0.227	1.1817	–20; –16	0.346	0.8055
–15	-0.091	-0.4755	–20; –15	0.254	0.5412
–14	-0.393**	-2.0508	–20; –14	-0.139	-0.2741
–13	0.215	1.1204	–20; –13	0.076	0.1398
–12	0.098	0.5129	–20; –12	0.174	0.3027
–11	-0.457**	-2.3837	–20; –11	-0.283	-0.4666
–10	-0.263	-1.3705	–20; –10	-0.546	-0.8581
–9	0.231	1.2038	–20; –9	-0.315	-0.4741
–8	-0.129	-0.6715	–20; –8	-0.444	-0.6417
–7	0.079	0.4108	–20; –7	-0.365	-0.5086
–6	0.258	1.3455	–20; –6	-0.107	-0.1439
–5	0.041	0.2138	–20; –5	-0.066	-0.0859
–4	0.069	0.3603	–20; –4	0.003	0.0040
–3	0.297	1.5471	–20; –3	0.300	0.3686
–2	0.562***	2.9305	–20; –2	0.862	1.0310
–1	0.143	0.7450	–20; –1	1.005	1.1715
0	0.902***	4.6998	–20; –0	1.907*	2.1689
+1	0.208	1.0863	–20;+1	2.115**	2.3506
+2	0.332*	1.7320	–20;+2	2.448***	2.6601
+3	0.090	0.4712	–20;+3	2.538***	2.7003
+4	0.064	0.3322	–20;+4	2.602***	2.7121
+5	0.251	1.3096	–20;+5	2.853***	2.9163
+6	0.397**	2.0667	–20;+6	3.250***	3.2595
+7	-0.131	-0.6843	–20;+7	3.119***	3.0715
+8	0.160	0.8363	–20;+8	3.279***	3.1733
+9	-0.111	-0.5766	–20;+9	3.168***	3.0147
+10	-0.203	-1.0562	–20;+10	2.966***	2.7760
+11	-0.022	-0.1143	–20;+11	2.944***	2.7121
+12	-0.404**	-2.1051	–20;+12	2.540**	2.3042
+13	-0.227	-1.1815	–20;+13	2.313**	2.0675
+14	-0.049	-0.2548	–20;+14	2.264**	1.9946
+15	0.180	0.9367	–20;+15	2.444**	2.1229
+16	-0.161	-0.8388	–20;+16	2.283*	1.9561
+17	-0.369*	-1.9231	–20;+17	1.914	1.6182
+18	0.082	0.4294	–20;+18	1.996*	1.6661
+19	0.297	1.5474	–20;+19	2.293*	1.8898
+20	-0.170	-0.8841	–20;+20	2.124*	1.7285

(*) t_{AR} and t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

Table Appendix 18: CAAR for Cross-Sectional Sample—Adjusted for Outliers

AR for Event Study Sample—Constant Mean Return Model (N=230)			CAAR for Cross-Sectional Sample—Constant Mean Return Model (N=182)		
(1) Day	(2) AR (in %)	(3) t_{AR}	(4) Window (days)	(5) CAAR (in%)	(6) t_{CAAR}
–20	0.076	0.3464	–20; –20	0.076	0.3464
–19	-0.294	-1.3434	–20; –19	-0.218	-0.7050
–18	-0.043	-0.1981	–20; –18	-0.262	-0.6900
–17	0.265	1.2111	–20; –17	0.003	0.0080
–16	0.177	0.8080	–20; –16	0.180	0.3685
–15	0.014	0.0659	–20; –15	0.195	0.3633
–14	-0.481**	-2.1967	–20; –14	-0.286	-0.4939
–13	0.131	0.5977	–20; –13	-0.155	-0.2507
–12	0.187	0.8536	–20; –12	0.032	0.0482
–11	-0.470**	-2.1475	–20; –11	-0.438	-0.6334
–10	-0.140	-0.6375	–20; –10	-0.578	-0.7962
–9	0.181	0.8278	–20; –9	-0.397	-0.5233
–8	-0.227	-1.0371	–20; –8	-0.624	-0.7904
–7	0.039	0.1802	–20; –7	-0.584	-0.7135
–6	0.167	0.7626	–20; –6	-0.417	-0.4924
–5	0.136	0.6227	–20; –5	-0.281	-0.3211
–4	0.063	0.2891	–20; –4	-0.218	-0.2414
–3	0.338	1.5453	–20; –3	0.120	0.1296
–2	0.610***	2.7883	–20; –2	0.731	0.7658
–1	0.039	0.1782	–20; –1	0.770	0.7863
0	0.900***	4.1120	–20; –0	1.670*	1.6646
+1	0.185	0.8441	–20;+1	1.855*	1.8063
+2	0.390*	1.7829	–20;+2	2.245**	2.1384
+3	0.113	0.5174	–20;+3	2.358**	2.1990
+4	-0.007	-0.0326	–20;+4	2.351**	2.1480
+5	0.375*	1.7149	–20;+5	2.726**	2.4426
+6	0.209	0.9533	–20;+6	2.935***	2.5804
+7	0.001	0.0031	–20;+7	2.936**	2.5345
+8	0.116	0.5319	–20;+8	3.052***	2.5892
+9	-0.049	-0.2258	–20;+9	3.003**	2.5044
+10	-0.132	-0.6028	–20;+10	2.871**	2.3554
+11	0.157	0.7161	–20;+11	3.027**	2.4449
+12	-0.450**	-2.0567	–20;+12	2.577**	2.0496
+13	-0.206	-0.9393	–20;+13	2.372*	1.8581
+14	-0.130	-0.5951	–20;+14	2.241*	1.7308
+15	0.042	0.1925	–20;+15	2.284*	1.7387
+16	-0.199	-0.9108	–20;+16	2.084	1.5653
+17	-0.303	-1.3854	–20;+17	1.781	1.3198
+18	0.070	0.3194	–20;+18	1.851	1.3539
+19	0.317	1.4464	–20;+19	2.167	1.5656
+20	-0.232	-1.0595	–20;+20	1.935	1.3809

(*) t_{CAAR} is the value of the parametric *t*-test according to Brown and Warner (1985), I use "*" to indicate significance levels where 1%, 5%, and 10% level are ***, **, *, respectively

APPENDIX IX: RESULTS OF SENSITIVITY ANALYSIS—CROSS-SECTIONAL ANALYSIS

Table Appendix 19: Cross-Sectional Model Adjusted for Outliers—Control Models 1.B-3.B

Dependent Variable:	**Control Model 1.B**		**Control Model 2.B**		**Control Model 3.B**	
CAR [-5;+5]	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$
- constant	11.282	(1.26)	10.135	(1.22)	12.370	(1.54)
1. Corporate Governance Enhancement Hypothesis						
A. Partial Acquirer Characteristics						
PE	-0.135	(-0.07)	-0.162	(-0.07)	-0.477	(-0.22)
- PE*HPERIOD						
TOEHOLD	0.502	(0.26)	0.723	(0.35)	0.681	(0.33)
- TOEHOLD*HPERIOD						
BLOCK	0.278*	(1.66)	0.324*	(1.86)	0.338*	(1.93)
- BLOCK*HPERIOD						
HPERIOD						
B. Target Ownership Characteristics						
CONCENTRATION			-7.734	(-1.49)	-8.615	(-1.65)
- CONCENTRATION*HPERIOD						
CONTROLLING			2.515	(1.10)	3.136	(1.36)
- CONTROLLING*HPERIOD						
INSTITUTIONAL			-0.143*	(-1.88)	-0.151*	(-1.95)
- INSTITUTIONAL*HPERIOD						
C. Other Corp. Governance Charact.						
MOWNERSHIP			0.019	(0.41)	0.003	(0.07)
- MOWNERSHIP*HPERIOD						
SBOARD			0.919	(1.23)	0.693	(0.92)
- SBOARD*HPERIOD						
COMPETITION			0.001	(0.87)	0.001	(0.84)
- COMPETITION*HPERIOD						
DEBT			-0.001	(-0.39)	0.000	(0.11)
- DEBT*HPERIOD						
2. Other Hypotheses						
TO						
- TO*HPERIOD					-2.528	(-0.92)
UV						
- UV*HPERIOD					-0.300*	(-1.79)
Control Variables	Yes		Yes		Yes	
No Obs.	182		182		182	
F-test	2.39**		2.56***		2.52***	
Adj. R^2	0.1832		0.1841		0.1885	

The dependent variable is CAR [–5;+5]. All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (HPERIOD) is a dummy variable taking the value of one if the holding period of the transaction is more than a year. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g., mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) is defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) is defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

Table Appendix 20: Cross-Sectional Model with CAR [-2;+5]—Control Models 1.B-3.B

Dependent Variable:	(1) **Control Model 1.B**		(2) **Control Model 2. B**		(3) **Control Model 3.B**	
CAR [-2;+5]	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$
- constant	0.154**	(2.50)	0.155***	(2.76)	0.192	(3.26)
1. Corporate Governance Enhancement Hypothesis						
A. Partial Acquirer Characteristics						
PE	-0.002	(-0.10)	-0.003	(-0.17)	-0.011	(-0.55)
- PE*HPERIOD						
TOEHOLD	-0.007	(-0.37)	-0.003	(-0.16)	-0.003	(-0.13)
- TOEHOLD*HPERIOD						
BLOCK	0.002	(1.37)	0.002	(1.44)	0.002	(1.29)
- BLOCK*HPERIOD						
HPERIOD						
B. Target Ownership Characteristics						
CONCENTRATION			-0.064	(-1.16)	-0.081	(-1.42)
- CONCENTRATION*HPERIOD						
CONTROLLING			0.038	(1.53)	0.046*	(1.81)
- CONTROLLING*HPERIOD						
INSTITUTIONAL			-0.001	(-0.91)	-0.001	(-1.03)
- INSTITUTIONAL*HPERIOD						
C. Other Corp. Governance Charact.						
MOWNERSHIP			0.000	(-0.72)	-0.001	(-1.22)
- MOWNERSHIP*HPERIOD						
SBOARD			0.004	(0.65)	0.001	(0.19)
- SBOARD*HPERIOD						
COMPETITION			0.000	(0.87)	0.000	(0.68)
- COMPETITION*HPERIOD						
DEBT			0.000	(0.64)	0.000	(1.81)
- DEBT*HPERIOD						
2. Other Hypotheses						
TO						
- TO*HPERIOD					-0.013	(-0.52)
UV						
- UV*HPERIOD					-0.006*	(-1.92)
Control Variables	Yes		Yes		Yes	
No Obs.	186		186		186	
F-test	3.19***		2.67***		2.56***	
Adj. R^2	0.1564		0.1782		0.2199	

All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (HPERIOD) is a dummy variable taking the value of one if the holding period of the transaction is more than a year. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g., mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) is defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) is defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

Table Appendix 21: Cross-Sectional with CAR [-10;+10]—Control Models 4.B-5.B

	(1) Conrol Model 4.B CAR [-10;+10]		(2) Control Model 5.B CAR [-10;+10]	
Variables	Coef.	$t_{statistics}$	Coef.	$t_{statistics}$
- constant	0.316***	(3.06)	-0.133	(-0.55)
1. Corporate Governance Enhancement Hypothesis				
A. Partial Acquirer Characteristics				
PE	-0.009	(-0.29)	0.158	(1.25)
- PE*HPERIOD			-0.184	(-1.42)
TOEHOLD	0.009	(0.31)	0.020	(0.21)
- TOEHOLD*HPERIOD			-0.028	(-0.27)
BLOCK	0.003	(1.23)	0.009	(1.70)
- BLOCK*HPERIOD			-0.006	(-1.12)
HPERIOD	-0.048	(-1.56)	0.474**	(2.08)
B. Target Ownership Characteristics				
CONCENTRATION	-0.028	(-0.34)	0.426**	(2.08)
- CONCENTRATION*HPERIOD			-0.495**	(-2.28)
CONTROLLING	0.032	(0.92)	0.000	(0.0)
- CONTROLLING*HPERIOD			0.019	(0.30)
INSTITUTIONAL	0.000	(-0.30)	0.010	(1.29)
- INSTITUTIONAL*HPERIOD			-0.010	(-1.38)
C. Other Corp. Governance Charact.				
MOWNERSHIP	0.000	(0.22)	0.001	(0.47)
- MOWNERSHIP*HPERIOD			0.000	(-0.16)
SBOARD	0.012	(1.38)	0.015	(0.64)
- SBOARD*HPERIOD			-0.004	(-0.15)
COMPETITION	0.000	(0.38)	0.000***	(-2.84)
- COMPETITION*HPERIOD			0.000***	(3.07)
DEBT	0.000	(-0.35)	0.001**	(2.06)
- DEBT*HPERIOD			-0.001**	(-2.05)
2. Other Hypotheses				
TO	-0.057*	(-1.73)	0.120*	(1.69)
- TO*HPERIOD			-0.167**	(-1.99)
UV	-0.006**	(-2.35)	-0.004	(-0.15)
- UV*HPERIOD			-0.003	(-0.13)
Control Variables	Yes		Yes	
No Obs.	186		186	
F-test	3.81***		3.54***	
Adj. R^2	0.1998		0.2540	

All calculations are carried out in StataSE 10 and regressions are estimated with white heteroskedasticity-consistent standard errors and covariance. (PE) is a dummy variable taking the value of one if the acquirer is a private equity firm. (TOEHOLD) is a dummy variable taking the value of one if the acquirer holds a toehold. (BLOCK) is defined as the proportion of common stock of the target firm held by the acquirer post-transaction. (HPERIOD) is a dummy variable taking the value of one if the holding period of the transaction is more than a year. (CONCENTRATION) is defined as the sum of the 3 largest shareholders divided by the sum of the ten largest shareholders in %. (CONTROLLING) is a dummy variable taking the value of one if the largest shareholder holds at least 25%. (INSTITUTIONAL) is defined as the sum of institutional ownership of the top ten large shareholders in %. (MOWNERSHIP) is defined as the sum of managerial ownership in %. (SBOARD) is defined as the ratio of number of supervisory board members to management board members as of last fiscal year previous to announcement day of partial acquisition. (COMPETITION) is measured as HHI according to Monopolkommission (2008, p.103). (DEBT) is defined as total debt % of common equity. (UV) is measured as MB-Value, whereas the market value is measured 40 days before the announcement date and book value is as of last fiscal year previous to announcement day. (TO) is a dummy variable taking the value of one if there is a control event (e.g., mandatory bid, takeover) according to § 10 WpÜG, §§ 29, 34, 10 WpÜG. Control Variables: in the control model I control for size effect (SIZE) is defined as the log of total assets as of last fiscal year previous to announcement day; trading volume effect (VOLUME) is defined as illiquidity measure according Amihud (2002, p.34); industry-fixed effects (INDUSTRY) which are four industry dummies based on classification of German Federal Statistical Office; and time-fixed effects (TIME) which are six time dummies for each year minus one in the investigation period. * indicates 10% level of significance. ** indicates 5% level of significance. *** indicates 1% level of significance.

LIST OF ABBREVIATIONS

AAR	Average Abnormal Return
AfU	Agentur für Unternehmensdaten
AG	Aktiengesellschaft
AktG	Aktiengesetz
APT	Arbitrage Pricing Theory
AR	Abnormal Returns
ASE	American Stock Exchange
AT	Anticipated Takeover Effect
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht
BAKred	Bundesaufsichtsamt für das Kreditwesen
BAV	Bundesaufsichtsamt für Versicherungswesen
BAWe	Bundesaufsichtsämtern für den Wertpapierhandel
BHAR	Buy-and-Hold Abnormal Return
CAAR	Cumulated Average Abnormal Return
CAR	Cumulated Abnormal Return
CAG	Creeping Acquisition Group
CAPM	Capital Asset Pricing Model
CDAX	Composite Deutscher Aktienindex
CGD	Corporate Governance Database
CGE	Corporate Governance Enhancement Effect
CRs	Corporate Raiders
DAFOX	Deutsche Aktien-Forschungsindex
DCGK	Deutsche Corporate Governance Kodex
DGAP	Deutsche Gesellschaft für Ad-hoc-Publizität
EBIT	Earnings before Interest and Taxes
EPS	Earnings per Share
EVA	Economic Value Added
GbR	Gesellschaft bürgerlichen Rechts
GmbH	Gesellschaft mit beschränkter Haftung
GPs	General Partners
HF	Hedge Funds
HGB	Handelsgesetzbuch
HHI	Herfindahl Index
i.i.d.	independently and identically distributed
KG	Kommanditgesellschaft
KGaA	Kommanditgesellschaft auf Aktien
LPs	Limited Partners
LSH	Large Shareholder
LTG	Large Toehold Group
M/B	Market-To-Book-Ratio
MBM	Management Board Members
MC	Management-Controlled
MitbestG	Mitbestimmungsgesetz
NASDAQ	National Association of Securities Dealers Automated Quotations
NYSE	New York Stock Exchange

OC	Owner-Controlled
OHG	General Partnership
OLS	Ordinary Least Squares
P2P	Public-to-Private Transactions
PAC	Partial Acquirer Characteristics
PE	Private Equity Firms
PIPE	Private Investment in Public Equity
R&D	Research and Development
RH	Raiding Hypothesis
ROA	Return on Assets
ROE	Return on Equity
SBM	Supervisory Board Members
SIC Code	Standard Industrial Classification Codes
SSPH	Superior Stock Picking Hypothesis
SSRN	Social Science Research Network
STG	Small Toehold Group
T	Thomson ONE
T1BO	Thomson ONE Investment Banking Ownership
TOC	Target Ownership Characteristic
US-GAAP	United States Generally Accepted Accounting Principles
UV	Undervaluation Signaling Effect
VC	Venture Capital Funds
WGZW	Wer gehört zu Wem
WpHG	Wertpapierhandelsgesetz
WpPG	Wertpapierprospektgesetz
WpÜG	Wertpapiererwerbs- und Übernahmegesetz
WZ	Wirtschaftszweig

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ZUSAMMENFASSUNG

Die vorliegende Dissertation beschäftigt sich mit einer Forschungsfrage bezüglich des Zusammenhanges von Corporate Governance und Unternehmenswert. Hierbei wird ein spezielles Beispiel im deutschen Corporate Governance System untersucht, und zwar Käufe von Minderheitsbeteiligungen (d.h. 3% bis 30%) von Neu-Institutionellen Investoren (d.h. Private Equity Firmen und Hedge Funds) an deutschen Aktiengesellschaften. Es wird der Frage nachgegangen, inwieweit Käufe von Minderheitsbeteiligungen einen wirksamen Corporate Governance Mechanismus in Deutschland darstellen und Neu-Institutionelle Investoren ihr Potenzial nutzen, als Shareholder Aktivisten das Corporate Governance System in Aktiengesellschaften zu stärken und dadurch Wert zu schaffen.

Die Dissertation ist in sieben Kapitel unterteilt und wird durch die Einleitung (Kapitel 1) eröffnet, in der die Forschungsfrage vorgestellt und eingrenzt wird und der Gang der Arbeit besprochen wird. Kapitel 2 und 3 stellen den konzeptionellen Rahmen für die empirische Untersuchung im Bereich Corporate Governance dar, sichten die relevante Literatur und legen damit die Grundlage für die Analyse. Die folgenden drei Kapitel beschäftigen sich mit der empirischen Analyse. Dabei wird in Kapitel 4 die Methodik zur Untersuchung der Forschungsfrage erläutert und in Kapitel 5 der Datensatz der empirischen Analyse beschrieben und diskutiert. Anschließend werden in Kapitel 6 die Ergebnisse der Untersuchung dargestellt und interpretiert. In der Schlussfolgerung (Kapitel 7) werden noch einmal die wesentlichen Ergebnisse der Arbeit zusammengefasst und aus verschiedenen Perspektiven die Ergebnisse und Implikation reflektiert. Des Weiteren wird auf einige spezielle Probleme eingegangen und einige Ideen für zukünftige Forschungsarbeiten vorgestellt.

Die Forschungsfrage konzentriert sich auf das deutsche Corporate Governance System, welches insbesondere deshalb interessant ist, weil es im Vergleich zu anderen Corporate Governance Systemen in der Welt besondere Eigenschaften aufweist. Regulatorische Änderungen am deutschen Finanzplatz haben in den vergangenen Jahren einen Strukturbruch ausgelöst, was möglicherweise einen entscheidenden Einfluss auf das Corporate Governance System hatte. Im Mittelpunkt der Untersuchung stehen Minderheitsbeteiligungen. Diese Transaktionen haben das Potenzial, das Corporate Governance System zu verbessern und damit Wert für Aktiengesellschaften zu generieren. Vor allem vor dem Hintergrund der bedeutsamen Entwicklung im deutschen Finanz- und Corporate Governance System in den letzten Jahrzehnten könnte sich die Rolle von Kapitalmarkttransaktionen, wie Käufe von Minderheitsbeteiligungen, bedeutend verändert haben. Darüber hinaus stehen Neu-Institutionelle Investoren als Großaktionäre im Fokus der Untersuchung. Diese Investoren haben eine exzellente Organisationsstruktur, wichtige Fähigkeiten und Interessen, um die Probleme, die aus der Trennung von Eigentum und Kontrolle in Aktiengesellschaften entstehen, zu mindern. Zusammengenommen können Minderheitsbeteiligungen einen wichtigen Beitrag zur Effizienzsteigerung des Corporate Governance Systems leisten. Dadurch könnten Agency Kosten

reduziert und der Wohlfahrtsverlust, der aus der Trennung von Eigentum und Kontrolle in der Aktiengesellschaft entsteht, verringert werden. Dies kann Wert für die Ökonomie als Ganzes schaffen. Damit würden diese Transaktionen einen wichtigen Beitrag zur Effizienz des Corporate Governance Systems leisten. Während in der Theorie Gründe für Käufe von Minderheitsbeteiligungen Neu-Institutioneller Investoren vorgetragen werden, muss die Frage der Effektivität dieser Transaktionen mit empirischen Evidenzen beantwortet werden. Bisher kann die Frage in der die Literatur nicht eindeutig beantwortet werden.

In der Dissertation wird daher eine quantitative Analyse durchgeführt, basierend auf dem ökonomischen Ansatz zum Corporate Governance. Das Hauptinteresse besteht dabei in der Beziehung zwischen einer Veränderung der Eigentümerstruktur und dem Einfluss auf den Shareholder Value am deutschen Aktienmarkt. Die empirische Untersuchung ist in zwei Teile aufgeteilt. Der erste Teil ist eine Event Study über die Änderung der Eigentümerstruktur und den Einfluss auf den Shareholder Value. Dabei wird der Bekanntmachungseffekt von Veröffentlichung von Minderheitsbeteiligungen zwischen 3% und 30% untersucht. Der zweite Teil beschäftigt sich mit den Ursachen des Bekanntmachungseffekts und es wird eine Querschnittsanalyse durchgeführt. Für die Untersuchung wurde ein innovativer, neuer und handverlesener Datensatz erhoben, da es für diese Forschungsfrage keinen Standarddatensatz gibt. Der Betrachtungszeitraum für die Event Study und die Querschnittsanalyse sind jeweils der Zeitraum von Januar 2002 bis Juli 2008. Der Datensatz umfasst 234 Transaktionen für die Event Study, 186 für die Querschnittsanalyse und eine Reihe von erklärenden Variablen und Kontrollvariablen. Zunächst wird gemessen, ob der Bekanntmachungseffekt von partiellen Aktienkäufen negativ, positiv oder neutral ist (Event Study). Anschließend werden die Determinanten des Bekanntmachungseffekts untersucht (Querschnittsanalyse). Hierbei werden eine Reihe von Hypothesen basierend auf den drei wesentlichen Erklärungsansätzen für die positive Reaktion am Aktienmarkt hergeleitet: Corporate Governance Verbesserung-Effekt, Unterbewertungs-Effekt und erwarteter Übernahme-Effekt.

Ausgehend von diesen Hypothesen werden fünf verschiedene ökonometrische Modelle spezifiziert, um die Ursachen des Bekanntmachungseffekts zu untersuchen. Obwohl die Literatur in diesem Forschungsgebiet in der Regel einen positiven Bekanntmachungseffekt feststellt, besteht bisher kein Konsens bezüglich der Determinanten des Effekts. Speziell in der deutschen Literatur fehlen überzeugende Erklärungsansätze und Ideen, wie man dieses Problem angehen könnte. Das Problem besteht darin, dass es mehrere parallel bestehende Hypothesen gibt, die diesen Effekt erklären können und die Einflüsse schwer voneinander zu trennen sind. Um dieses spezielle Problem zu beleuchten, wird ein Regressionsmodell unter Einbeziehung von multiplikativen Interaktionstermen spezifiziert (Interaktionsmodell). Dabei wird eine Variable, die die Halteperiode der Investition des Neu-Institutionellen Investors misst, als ein Werkzeug (Interaktionsterm) verwendet, um die Motivation und Absichten der Investoren zu unterscheiden. Durch dieses Vorgehen werden empirische Evidenzen ermittelt, die die These unterstützen, dass der Corporate Governance Verbesserungs-Effekt

eine wesentliche Determinante des positiven Bekanntmachungseffekts von Käufen von Minderheitsbeteiligungen darstellt.

Die Quintessenz der Untersuchung besteht darin, dass Minderheitsbeteiligungen von Neu-Institutionellen Investoren in der Tat als eine Synthese von zwei Corporate Governance Mechanismen verstanden und getestet werden können, zum einen die Kontrolle durch Großaktionäre (interner Kontrollmechanismus) und zum anderen der Markt für partielle Übernahmen (externer Kontrollmechanismus). Darüber hinaus ergibt die Analyse, dass es trotz der typischen Homogenitätsannahme in vielen theoretischen Modellen bezüglich großer Aktionäre wichtig erscheint, die Heterogenität von Großaktionären zu berücksichtigen, da sie einen wichtigen Erklärungsbeitrag leistet. Dies liegt in den unterschiedlichen Anreizen und Fähigkeiten begründet, die die verschiedenartigen Aktionäre mitbringen. Hierbei ist es wichtig hervorzuheben, dass nicht nur der Art, sondern auch den Absichten des Investors entscheidende Bedeutung zukommt. Insgesamt leistet diese Arbeit einen Beitrag zur Corporate Governance Forschung, indem sie eine neue Idee hervorbringt, wie die Fähigkeit zur Wertschaffung von Käufen von Minderheitsbeteiligungen Neu-Institutioneller Investoren getestet werden kann. Des Weiteren wird ein neuer und handverlesener Datensatz entwickelt und vor dem Hintergrund der Forschungsfrage mit quantitativen Verfahren (d.h. Event Study, Querschnittsanalyse) untersucht. Dabei werden empirische Befunde vorgetragen, die zeigen, dass diese Transaktionen in deutschen Aktiengesellschaften einen effektiven Corporate Governance Mechanismus darstellen.

Curriculum Vitae

For reasons of data protection,

the curriculum vitae is not included in the online version