

## Business Groups, Bank Control, and Large Shareholders: An Analysis of German Takeovers\*

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To analyze the consequences of concentrated ownership and bank control for the performance of acquiring firms, I employ a unique data set of 715 German takeovers. First, I find that takeovers increase bidder value, but majority owners provide no clear benefit. Second, bank control is beneficial only if it is counterbalanced by another large shareholder. Third, the worst takeovers are completed by firms that are majority-controlled by financial institutions. I conclude that majority control, whether exercised by a bank or another shareholder, increases the likelihood of decisions that do not maximize shareholder value. *Journal of Economic Literature* Classification Numbers: G34, G32, G21. © 2000 Academic Press

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The efficiency of different corporate governance systems has attracted great academic and political interest during the past decade.<sup>1</sup> Of particular interest has been the question of whether capital markets in the United States and the United Kingdom or strong blockholders and universal banks (as, for example, in Germany

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<sup>1</sup> See Kojima (1995), Shleifer and Vishny (1997), and Zingales (1998) for surveys.

and Japan) are better suited to monitor corporate management. Especially the German system is characterized by highly concentrated ownership, and several authors have performed cross-sectional studies of how ownership structure and strong banks affect firm performance. Unfortunately, these results are inconsistent with one another and depend strongly on the data set employed, the period, and the methodology.<sup>2</sup>

In this study, I employ a unique data set of 715 German takeovers obtained from the *Bundeskartellamt* (BKartA), the German federal antitrust agency.<sup>3</sup> While there are no general publication requirements at the time a takeover is initiated, all but the smallest bidders must register with the BKartA and provide details on their group structure when their stake in the target company crosses 25, 50, or 75% of the voting rights. My sample is based on these filings, official and unofficial correspondence surrounding them, and related material such as press releases. Because blockholdings are more widespread and substantially larger in Germany than in the Anglo-Saxon countries, the former provides an ideal setting for testing the role of ownership structure. The basic idea is that if effective monitoring by shareholder representatives can discipline management, firms with “better” monitors should make “better” acquisitions. Specifically, I ask the following question: Based on their influence on acquiring firms, do large shareholders and banks affect the quality (net present value) of takeover decisions? Takeovers are typically important investment decisions where a substantial fraction of a firm’s resources is committed to a specific project. Nevertheless, on average, they result in small abnormal returns to the shareholders of bidding firms.<sup>4</sup> Therefore, the average takeover does not substantially change the bidder’s market value. Many empirical studies, however, show that several cross-sectional factors systematically affect the value of the transaction. These studies typically justify value-decreasing deals by arguing that managers’ interests diverge from those of shareholders, or by eluding to managerial incompetence in valuing target firms and potential synergies. In this paper, I build on these ideas and ask to what extent the bidders’ ownership structures determine the value of takeovers to its shareholders. In contrast to previous studies of the relation between ownership and performance (see footnote 2), I employ an event-based method in place of a cross-sectional analysis. This is designed to measure the effect of ownership structure and bank control on the net present value of major corporate investment decisions: the acquisition of companies. This approach overcomes three problems associated with the

<sup>2</sup> While Cable (1985) and Gorton and Schmid (1998) find a positive relation between bank influence and firm performance, Chirinko and Elston (1996) find no effect, and Nibler (1995) and Perlitz and Seger (1994) find a negative effect. Schmid (1996a) documents a U-shaped relation where typical parameter values also yield a negative relationship. See also Edwards and Fischer (1995) and Boehmer (1999a) for a survey and additional references.

<sup>3</sup> In the context of this paper, I define a takeover as the acquisition of voting rights associated with common stock where the acquirer purchases at least 50% of outstanding votes.

<sup>4</sup> For German takeovers, see Gerke *et al.* (1995) and Boehmer and Loeffler (1999); Jensen and Ruback (1983) and Jarrell *et al.* (1988) provide surveys of literature on U.S. takeovers.

cross-sectional one. First, I can use market-based performance measures, because I can precisely identify the date information about a pending takeover becomes public. Most cross-sectional studies use performance measures based on financial-statement data to avoid the forward-looking nature of stock prices. Market-based data cannot be employed in such a cross-sectional approach, because any effect of ownership structure would be impounded into the stock price once the market became aware of a change. Thus, during any period after the change there should be no further relation between ownership structure and market returns. Therefore, in cross-sectional studies performance must be measured using backward-looking variables such as financial-statement data. Second, to isolate and measure the effect of ownership in a cross-sectional study, it is necessary to control for other factors that might affect performance, but these are not always known or measurable. In contrast, since the cross-sectional correlation of variables in event time is typically negligible, such controls are less important in the event-based approach. Third, the causal relation between ownership structure and performance is ambiguous in cross-sectional studies. For example, Perlitz and Seger (1994) interpret the negative effect of bank control on performance as evidence that bank influence reduces profitability. On the other hand, such a result would also materialize if banks were to often take control of poorly performing companies and reduce their involvement after improving profitability. The event-based approach resolves this issue, because performance is only measured over very short periods.

One caveat to my approach is that no data are available on the market value of corporate debt. A public bond market is almost nonexistent in Germany, and information on bank loans is generally not published. Therefore, my results do not capture potential changes in firm value that are caused by changes in the market value of corporate debt. For example, a takeover may reduce the value of the bidder's equity, but simultaneously increase the value of its debt. Due to the absence of data on debt, my analysis cannot incorporate this potentially important dimension of the consequences of takeovers.

This paper also sheds some light on the motives behind takeovers in Germany, which have been largely ignored by research in financial economics. This is mostly due to a shortage of data. While Germany is the world's third largest economy and its corporate governance structure attracts substantial interest, the activities of its business sector have not been characterized by widespread transparency in the past. This study uses previously untapped data to enhance our understanding of an important economy.

The remainder of this paper is organized as follows. In the next section, I discuss related previous studies and present my hypotheses. In Section 2, I outline the institutional and legal environment in Germany. I describe the sample and define basic variables in Section 3 and provide descriptive statistics on ownership structure and bank control in Section 4. Section 5 presents the empirical methodology, results, and several plausibility tests to assess the robustness of the results. The final section concludes the paper.

## 1. GAINS FROM ACQUISITIONS AND THE ROLE OF LARGE SHAREHOLDERS AND BANKS

In the presence of operational, financial, or other synergies, takeovers can increase the value of the bidding firm.<sup>5</sup> These potential gains can only be realized if the consideration paid does not exceed the net present value (NPV) of the target if controlled by the bidder. Such an overpayment may occur due to agency problems (Jensen, 1986) or due to managerial incompetence (Roll, 1986). The separation of ownership and control gives rise to conflicts of interest between management and shareholders (Jensen and Meckling, 1976) that potentially lead to value-reducing takeovers. While shareholders only gain from deals with positive NPV, other factors such as increased firm size and diversification may increase management's pecuniary and nonpecuniary benefits. If these private benefits are sufficiently large, value-reducing takeovers may be in the interest of management. For example, their empirical analysis leads Ravenscraft and Scherer (1987) to view management interests as the motive for many acquisitions. Increasing firm size often increases power, prestige, and income of management. Firth (1991) documents that top managers in the United Kingdom can significantly increase their income after acquisitions, even if the deal reduces the market value of the bidder. Even after subtracting management's loss on shareholdings in their firm, such managers gain from initiating such acquisitions.<sup>6</sup> The problem is potentially exacerbated in the case of German takeovers, because neither do German managers hold significant equity investments in their firms nor is their compensation tied to their firm's market value.<sup>7</sup> Therefore, if acquisitions increase private benefits to management, the potential negative consequences for shareholders should be greater for German bidders. I hypothesize that the stronger the managerial control and the

<sup>5</sup> For example, Asquith (1983) and Bradley *et al.* (1988) view market power and a more efficient management as potential sources of synergies, while Ravenscraft and Scherer (1987) also incorporate tax savings. Jensen and Ruback (1983) argue that synergies primarily derive from cost savings, especially related to distribution and production cost. These savings can be realized through vertical integration, economies of scale, the pooling of resources, or the elimination of repeated efforts.

<sup>6</sup> Roll (1986) argues that even in the absence of egocentric management decisions value-reducing acquisitions can result from incompetence or arrogance (hubris) on part of management. In a test of this hypothesis, Mørck *et al.* (1990) propose that managers who were particularly successful in the past in increasing market value are most likely to overestimate their decision-making ability. The authors, however, do not find empirical support for their hypothesis. Successful bidders, as measured by industry-adjusted earnings and returns over three years before the acquisition, make better acquisitions than other acquirers do. This result is corroborated by results in Lang *et al.* (1989, 1991), who document a positive relation between abnormal returns to acquiring firms and their proxy for Tobin's  $q$ . In line with these results, Shleifer and Vishny (1988) argue that overpayment in acquisitions is not due to hubris, but rather reflects private benefits to bidder management. Since shareholders must pay for, but do not gain from these benefits, this argument can explain value-reducing acquisitions.

<sup>7</sup> Schwalbach and Graßhoff (1997) have analyzed the relation between managerial pay and performance and found little evidence of positive sensitivity. Schmid (1996b) obtains a marginally significant positive relation, and Knoll *et al.* (1997) find no sensitivity for the remuneration of supervisory board members.

weaker the shareholder incentives to provide effective monitoring, the more value-reducing acquisitions occur. The foundations for this hypothesis are discussed in the following two sections.

### 1.1. *Blockholders' Incentives to Act in Shareholders' Interest*

Large blockholders have incentives to maximize the value of their shares. Whether this involves maximizing firm value depends on the degree to which they can extract transfers from small shareholders. First, the typical German group includes several firms with outside equity and several without. Thus, it may be rational for large shareholders to transfer resources from subsidiaries with outside equity to other group units. Second, German law effectively allows sizeable transfers to blockholders once a coalition owns at least 75% of the votes. Specifically, a 75% majority may factually make a binding tender offer to minority shareholders below market value.<sup>8</sup> The 75% majority need not even be held by one party, since two or more large blockholders may collude. Wenger *et al.* (1996) analyze such offers to minority shareholders and find that in 39 of 53 cases the offer is below the market value on the day before, and in 32 cases below the market value three months earlier. For the former 39 cases, the market value on average exceeds the compensation to minority shareholders by 74%. Additionally, blockholders can potentially use crossholdings and pyramidal groups to transfer resources from subsidiaries with outside shareholders to units without. Therefore, *a priori* it is not clear that it is easier for blockholders to increase the value of their stake by acting on behalf of all shareholders.

### 1.2. *Institutional Investors' Incentives to Act in Shareholders' Interest*

The German pension system currently does not involve public funds but rather leaves pension contributions under control of either the government or the employer. Therefore, institutional investors consist primarily of banks, insurance firms, dependent investment funds, and foreign funds. Of these, banks play the most important role. They can exert control over corporations in several ways. The most obvious are direct ownership of shares, the provision of loans, by being represented on supervisory boards, and other business relations. Maybe most importantly, a further channel of substantial influence comes via proxy votes that small shareholders delegate to the banks acting as custodians for their stock portfolios.<sup>9</sup>

Due to their information advantage, banks are potentially very effective monitors but may have little incentive to act on behalf of other shareholders. First, due to proxy votes and board memberships their control rights substantially exceed their

<sup>8</sup> Sections 304, 320b AktG. See also Hecker and Wenger (1995) for a detailed discussion of potential transfers between large and small shareholders and Adams (1994) for the implications of cross-shareholdings in this regard. Bebchuck and Kahan (1999) model and discuss the problems arising in determining an appropriate consideration in such transactions.

<sup>9</sup> For discussions of the German proxy-voting mechanism, see, for example, Köndgen (1994), Baums and Randow (1995), and Baums (1996). For a comparison of different mechanisms in the EU member countries, see Baums (1997).

interest in equity cash flow. Second, for the typical firm, the amount of debt held by banks exceeds the amount of equity held in the same firm by a factor greater than 10 and much likely substantially larger.<sup>10</sup> A third reason is additional fee-generating activity involving these firms. It is widely known that decisions maximizing the value of debt often reduce the market value of equity. The same argument holds for fee-maximizing decisions.<sup>11</sup> Therefore, the objective of the banks should be to balance decisions increasing the value of debt versus those increasing the value of equity. Given the substantially larger size of the debt portfolio, it is rational for banks to act primarily as debtors, and their decisions may have a negative effect on the value of equity. Thus, the effectiveness of banks as actively monitoring shareholder representatives is ultimately an empirical question.

### 1.3. Previous Studies of German Takeovers

Only a few studies analyze the consequences of German takeovers for the bidder's market value. Franks and Mayer (1996) do not focus specifically on takeovers, but rather on sales of large stakes of shares. They show that Germany is characterized by an active market for control in that control is more likely to change after periods of unusually poor performance. For 105 takeovers between 1987 and 1992, Gerke *et al.* (1995) document small positive abnormal returns over longer event periods, but do not detect abnormal performance in the month surrounding the event date. Furthermore, they do not consider the effect of legal filing requirements with the BKartA on the informational content of the analyzed event. Boehmer and Loeffler (1999) document that completed-deal filings do not lead to market reactions if bidders are required to file their takeover intentions earlier.

This study extends the former in several ways. I use a large sample of 715 takeovers (by 127 acquiring firms) between 1984 and 1995. From the BKartA correspondence, I obtain precise event dates and detailed information on the individual transactions. More importantly, I use extensive information on bidders'

<sup>10</sup> No publicly available figures provide information on the precise composition of banks' interests in equity and debt to German listed corporations. A back-of-the-envelope calculation proceeds as follows. In 1996, the DAI reports that the equity-to-capital ratio of listed corporations is 39% (DAI Fact Book 1996). Our own calculations reveal that banks own about 8% of these firms' equity. Since German firms very rarely use public bonds, it is safe to assume that most long-term debt consists of bank loans. Thus, the portfolio of a typical bank can be described as a function of the ratio of bank loans to total corporate liabilities. For example, if all corporate debt were from banks, the banks finance  $8\% \times 39\% = 3.12\%$  of listed firms' total assets in the form of equity shares, and 61% in the form of loans. Using the cautious assumption that corporate liabilities comprise only one third of bank loans, banks still finance about 20% of the corporations' total assets using loans. Therefore, for the typical bank the value of its loan portfolio to a typical listed corporation exceeds the equity interest in the same firm by a factor between 7 and 20. Economy-wide, Edwards and Fischer (1994) estimate that bank-supplied equity to non-banks is about 3% of bank-supplied loans to the same firms.

<sup>11</sup> For the United States, Payne *et al.* (1996) document evidence consistent with the view that banks use their voting rights in the interest of management (as opposed to that of shareholders) when they have debt or fee-related income associated with the firm. For Japanese firms, Mørck and Nakamura (1999) find that banks act primarily in the interest of creditors.

ownership structures and bank control to assess the effect of external monitoring on the *ex ante* NPV of completed takeovers. In particular this second issue extends the insights gained from studying U.S. takeovers. While large shareholdings (exceeding 25%) are very rare in the United States, they are widespread in Germany. This paper is the first attempt to isolate the effect of the structure of industrial groups, the identity of shareholders, and bank control on the quality of major investment decisions by management.

## 2. RELEVANT DISCLOSURE RULES IN GERMANY DURING THE SAMPLING PERIOD

During the sampling period, German bidders are not required to announce their intent to acquire another company immediately or publicly, not even if a publicly traded target is involved. Responding to the Large Holdings Directive of the European Commission, such a requirement was first instituted in January 1995 for firms listed in the German official stock market.<sup>12</sup> Before this legislation, there were three legal provisions relating to the disclosure of information about takeovers that are discussed below.

### 2.1. *Ex Post Publication Requirements*

Section 21 AktG (corporate code) specifies that target management must be notified immediately if another corporation's engagement exceeds 25 or 50% of the target's voting rights. In addition, Section 313 HGB (commercial code) stipulates that shareholdings exceeding 20% of target capital must generally be published in the annual report of the shareholding company. Neither provision applies to shareholders who are not incorporated. It is not required that a public announcement be made, nor that bidder shareholders be notified of the transaction immediately. Since the bidder may selectively approach large target shareholders, there need not even be a public announcement when exchange-listed targets are involved.

### 2.2. *Publication Requirements Based on Antitrust Legislation during the Sampling Period*

The German antitrust legislation *Gesetz gegen Wettbewerbsbeschränkungen* (GWB) contains the most stringent disclosure requirements for bidding firms in Sections 22, 23, 24, and 24a. Bidders are classified into three groups based on their consolidated sales, on market share, and in certain circumstances on the combined figures of bidder and target. Only the smallest bidders (less than DM 500 million in sales) are exempt from control by the BKartA, the German antitrust agency, but they must still provide a postacquisition filing to inform the agency about the deal. The second smallest bidders are also required to provide a post-transaction filing containing details on the transaction. Within 1 year of the filing, the BKartA has

<sup>12</sup> Directive 88/627/EEC. See Becht and Boehmer (1997) for a critical discussion of Germany's implementation of the Large Holdings Directive, also known as the Transparency Directive.

the authority either to require these bidders to undo the acquisition or to impose restrictions, such as the sale of certain assets. The largest bidders are required to provide a preacquisition filing detailing the planned takeover. The BKartA can request a maximum period of 4 months to evaluate the deal, but must respond to the filing within 30 days. If companies required to file pretransaction requests are allowed to complete the deal, they must provide a post-transaction filing as well.<sup>13</sup>

Postacquisition filings are published monthly in BKartA reports and are publicly accessible in the BKartA before publication. Therefore, this category of filings can be considered public information on the day of the filing. On the other hand, it is somewhat ambiguous whether and when pretransaction filings become public information. While these filings are not published, the BKartA generally provides information on pending deals if requested. In personal conversations, BKartA officials stated that only in the most politically or otherwise sensitive cases, when additionally bidders explicitly request that information remain classified, might the BKartA not provide information on pending deals. Similarly, the BKartA is generally reluctant to provide detailed information on deals it is currently investigating.

In summary, for firms that only need to file post-transaction reports, it is not likely that earlier information becomes available (unless the bidder voluntarily announces the takeover intent publicly). For firms that are required to provide preacquisition filings, information about the pending deal most likely becomes available earlier, although not necessarily immediately on the filing date. This view is supported by the empirical results in Boehmer and Loeffler (1999) and provides the basis for selecting appropriate event dates (discussed in more detail in Section 5.1 below).

### 3. DATA SOURCES AND DESCRIPTIVE STATISTICS

#### 3.1. *Sample Selection and the Treatment of Groups*

The basic sample consists of all corporations that are listed in the Frankfurt official market segment (*amtlicher Handel*) between 1980 and 1995. The *Deutsche Finanzdatenbank* (DFDB) contains daily share prices and distributions for these firms, and I use the 300 companies that have at least one class of shares traded during that period. The official market segment includes the largest and most actively traded German corporations.<sup>14</sup>

<sup>13</sup> In addition to the required filings, some bidders file voluntary (preacquisition) requests. These filings are intended to resolve regulatory uncertainties if bidders expect the BKartA to oppose the deal or if bidders are not sure into which size category they will be assigned.

<sup>14</sup> To calculate returns, I always use the most actively traded class if more than one is listed. I have calculated returns using different methods: (1) exclusively based on actual transactions or trade orders—if no trade orders were given on a particular day, prices are estimated by specialists and are treated as if no price was available; (2) using all available price information; (3) compounding returns discretely; and (4) compounding returns continuously. Since none of these variations qualitatively alters the results, I report only discretely compounded returns based on all available price information.

Next, I identify all acquisitions by these firms from BKartA filings. The BKartA organizes filings according to group structure. Each acquisition is registered under the name of the firm at the top of a business group or, equivalently, the top-level company in a chain of voting majorities. These majorities can be attained through direct or indirect shareholdings or other contractual arrangements. To use this information, I first identify the groups around the sample firms based on information in *Wer gehört zu wem?* and various annual editions of Hoppenstedt's *Handbuch der Aktiengesellschaften*. I then consider each filing a relevant acquisition, if the filing company is either an exchange-listed sample firm or a lower-level group member. Thus, the actual acquirer can be the listed firm itself or one of its subsidiaries, but not one of its parent companies. If companies on two different levels of a group are exchange listed, I assign the acquisition to the listed firm that lies closest to (and above) the actual acquirer in the group hierarchy.

To exclude transactions that do not change control, I do not collect data on internal group restructurings and joint ventures (*Gemeinschaftsunternehmen* according to Section 23 II GWB). I also exclude acquisitions that fail to obtain BKartA approval.<sup>15</sup> The resulting data set contains 836 takeovers by 144 exchange-listed firms or their subsidiaries. I further require that the bidder acquire at least 50% of the target's equity and that at least 50 daily returns be available during the market-model estimation period for the acquiring firms. This leaves 715 takeovers by 127 listed firms for the empirical analysis.

### 3.2. Definition of Variables and Descriptive Statistics on Bidder Firms

I retrieve information on several variables from the official BKartA filings and related correspondence between bidder and BKartA. Following Section 23 V GWB, the filings must contain standardized information relating to these variables. In 77% of the sample deals (549 takeovers) the bidder had to provide preacquisition filings (see Table I). The remaining 23% furnished only postacquisition filings (166 takeovers). A total of 290 firms are acquired directly by the listed sample firm, while 425 are bought indirectly via a subsidiary. Of those, 287 were bought by a direct subsidiary of the listed firm, while the remaining ones were acquired by subsidiaries further down the hierarchy.

I supplement data gathered from filings with information from various annual editions of Hoppenstedt's *Handbuch der Aktiengesellschaften*. For each variable, I have cross-checked information from the primary source with others to minimize data errors and to increase reliability.

**3.2.1. Relative size of bidder and target.** Since only 46 out of 715 target firms in my sample are publicly traded, I cannot use market values to determine firm size. Sales figures are similarly scarce. They are always available for bidders, but not for privately held targets before 1989 (when the BKartA started to systematically

<sup>15</sup> I do incorporate acquisitions that were allowed subject to restrictions, such as the sale of certain assets.

TABLE I  
Descriptive Statistics for Characteristics of German Takeovers

|                                                                                                      | N   | Percentage of acquisitions |
|------------------------------------------------------------------------------------------------------|-----|----------------------------|
| Type of control by the BKartA                                                                        |     |                            |
| Bidders that must provide pre-acquisition filings                                                    | 549 | 76.8                       |
| ...of which have news publications before filings                                                    | 80  | 11.2                       |
| Bidders that must provide post-acquisition filings                                                   | 166 | 23.2                       |
| ...of which have news publications before filings                                                    | 33  | 4.6                        |
| Total number of news publications before filings                                                     | 113 | 15.8                       |
| Type of acquisition                                                                                  |     |                            |
| Direct acquisition by listed sample firm                                                             | 290 | 40.6                       |
| Indirect acquisition by a subsidiary of the listed sample firm                                       | 425 | 59.4                       |
| ...of which have no layer between actual acquirer and listed sample firm                             | 287 | 40.1                       |
| ...of which have one layer between actual acquirer and listed sample firm                            | 109 | 15.2                       |
| ...of which have two layers between actual acquirer and listed sample firm                           | 28  | 3.9                        |
| ...of which have three layers between actual acquirer and listed sample firm                         | 1   | 0.1                        |
| Bidder stake in the target                                                                           |     |                            |
| Less than 25% prior to the acquisition                                                               | 610 | 85.3                       |
| 25% up to 50% prior to the acquisition                                                               | 105 | 14.7                       |
| Less than 75% following the acquisition                                                              | 90  | 12.6                       |
| 75% up to 100% following the acquisition                                                             | 625 | 87.4                       |
| Transaction increases bidder stake from <25% to >75%                                                 | 520 | 72.7                       |
| Direction of the acquisition                                                                         |     |                            |
| Horizontal                                                                                           | 280 | 39.2                       |
| Vertical                                                                                             | 61  | 8.5                        |
| Conglomerate acquisition with similar products                                                       | 50  | 7.0                        |
| Conglomerate relative to the listed sample firm, but horizontal or vertical relative to a subsidiary | 227 | 31.7                       |
| Purely conglomerate acquisition                                                                      | 97  | 13.6                       |

*Note.* The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included.

record target sales). The average ratio of target sales to bidder sales is about 10.11% for this subsample. A third alternative is to use the book value of equity as a size proxy. To the extent possible, I determine the book value shortly before the takeover, because several target firms increase their equity capital in the course of the acquisition. The average relative size of target and bidder based on book values is 7.72%.<sup>16</sup>

<sup>16</sup> This implies that targets are small compared to their acquirers, but several factors tend to bias this measure downward. First, book-to-market ratios differ substantially across firm size and industries. In particular, if targets are more likely to be growth firms than bidders, their relative size based on the book value of equity will be underestimated. In addition, several targets have off-balance sheet equity

TABLE II  
Percentage Acquired and Number of Deals per Bidder

|                                  | N   | Mean  | Percentiles |       |        |        |         |
|----------------------------------|-----|-------|-------------|-------|--------|--------|---------|
|                                  |     |       | Minimum     | 25%   | 50%    | 75%    | Maximum |
| Percentage of target acquired    | 715 | 85.68 | 50.00       | 73.93 | 100.00 | 100.00 | 100.00  |
| Bidder ownership before takeover | 715 | 0.08  | 0.00        | 0.00  | 0.00   | 0.00   | 50.00   |
| Bidder ownership after takeover  | 715 | 92.52 | 0.50        | 95.00 | 100.00 | 100.00 | 100.00  |
| Number of deals per bidder       | 127 | 6.43  | 1.00        | 1.00  | 3.00   | 7.00   | 83.00   |

*Note.* The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included.

**3.2.2. Size of the bidder's stake in the target firm.** To determine the bidder's stake in the target before and after the acquisition, I consider direct and indirect stakes. I assume that a stake larger than 50% allows the owner to effectively control a firm. This assumption makes it substantially easier to compute indirect holdings: the ownership is the sum of all stakes that are either held directly or held by subsidiaries that are linked to the bidder through a chain of majority stakes. I compute these stakes before and after the acquisition to infer the change in ownership due to the takeover. In about 85% of the acquisitions, bidders hold less than 25% in the target before the transaction (Table I). In 87% of the deals, bidders hold more than 75% afterward. The average bidder acquires 86% of the target, and half the deals are a purchase of 100% of the equity (Table II).

**3.2.3. Direction of the takeover.** About half of the acquired firms are horizontally or vertically related to the bidder, and an additional 32% are related to one of its subsidiaries. Only 14% are entirely unrelated acquisitions.

**3.2.4. Number of acquisitions per bidder.** As shown in Table II, the number of deals per bidder ranges from 1 to 83, with a mean of 6. Including the most frequent acquirers in the sample could affect my conclusions, if these acquisitions are part of a publicly known expansion program. I have performed various tests to isolate the effect of (partially) anticipated deals on the results that are summarized in footnote 24.

#### 4. ANALYSIS OF OWNERSHIP STRUCTURE AND BANK CONTROL OVER BIDDER FIRMS

For each sample firm I determine all blockholders who control a stake larger than 25% in the period preceding the takeover. In some cases, but not systematically, I

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in the form of unlimited-liability partners or "quiet" stakes held by outside investors. The latter usually have equity-like characteristics but appear as debt on the balance sheets.

can additionally identify smaller stakes. For firms that have a majority shareholder I also analyze that firm's shareholder structure. I follow majority stakes (considering direct, indirect, and cross-held stakes) to the top of the pyramidal business group and determine the identity of the top company's owners, who ultimately control the bidder firm. This information allows me to classify bidders in several ways according to their ownership structure. To quantify the identity of blockholders I use the categories family, government, financial institution, foreign owner, other large owners (foundations and cooperatives), and widely held. To compute family or government stakes, I add holdings by all family members or government institutions, respectively. Financial institutions include banks, insurance companies, and investment firms they control. Widely held shares are computed as the residual after considering all known blockholdings. Since stakes below 25% are not systematically reported, this measure is possibly biased upward.

#### *4.1. Shareholder Structure of the Bidder*

Table III contains descriptive statistics describing the ownership of bidders for the period preceding their most recent acquisition (the overall picture does not change when ownership characteristics are grouped by year).<sup>17</sup> The first panel shows ownership information for the listed firm itself, i.e., on blocks held directly in the listed sample firm. Of 127 bidders, 33 firms have minority stakes between 25 and 50%. This corresponds to 26% of all bidders (second column) and accounts for 40% of all acquisitions (third column). Thus, firms with minority stakes are more likely to be acquirers. An additional 77 bidders (61%) have a majority shareholder, accounting for 35% of all sample deals. Largely consistent with the ownership structure of Franks and Mayer's (1996) sample, 110 firms (87%) have a large shareholder controlling a stake of 25% or more. Of those, the most frequent blockholders are other companies (40 cases), families (28), financial institutions (17), the government (12), and foreign owners (11). The remaining two blocks are held by a foundation and a cooperative.

For the 77 bidders with a majority stake, panel B reports the ownership structure of the highest level. This could be the holder of the majority stake in the sample firm itself, if no party controls a further majority in this firm. Otherwise, it refers to the ownership of the highest level in a potential chain of majority stakes. Panel C combines the information on listed firms and, if a majority shareholder is present, on top tiers and presents ownership information for the complete group including the listed firm. In 13% of all cases ("largest owner other company"), the ultimate largest owner cannot be inferred from publicly available sources or data from the BKA. Families are the most important group of shareholders, but account for relatively few takeovers. Firms that are widely held or have a block controlled by a financial institution have the greatest propensity for acquiring other companies.

<sup>17</sup> To investigate potential differences to other listed firms, I have compared bidder ownership to that of other exchange-listed firms (in the official Frankfurt market) during the same period. This comparison reveals only very few significant differences between sample firms and others and is not reported here.

TABLE III

Ownership Structure and Bank Control of German Bidders in the Year Preceding the Takeover

|                                                                                                | Number of<br>bidders | Percentage of<br>127 bidders | Percentage of<br>715 takeovers |
|------------------------------------------------------------------------------------------------|----------------------|------------------------------|--------------------------------|
| A. Stakes directly in listed firm                                                              |                      |                              |                                |
| Majority widely held                                                                           | 42                   | 33.07                        | 58.04                          |
| Firms with blockholders:                                                                       |                      |                              |                                |
| 25% $\leq$ Stake < 50%                                                                         | 33                   | 25.98                        | 40.28                          |
| 50% $\leq$ Stake                                                                               | 77                   | 60.63                        | 34.55                          |
| Largest owner foreign                                                                          | 11                   | 8.66                         | 6.29                           |
| Largest owner family                                                                           | 28                   | 22.05                        | 15.38                          |
| Largest owner other company                                                                    | 40                   | 31.50                        | 24.06                          |
| Largest owner government                                                                       | 12                   | 9.45                         | 9.65                           |
| Largest owner financial institution                                                            | 17                   | 13.39                        | 18.74                          |
| Other largest owner                                                                            | 2                    | 1.57                         | 0.41                           |
| B. Ultimate stakes in 77 majority owners of listed firm (corresponding to 247 takeovers)       |                      |                              |                                |
| Majority widely held                                                                           | 13                   | 10.24                        | 7.41                           |
| Largest owner foreign                                                                          | 13                   | 10.24                        | 3.36                           |
| Largest owner family                                                                           | 28                   | 22.05                        | 10.91                          |
| Largest owner other company                                                                    | 9                    | 7.09                         | 4.62                           |
| Largest owner government                                                                       | 12                   | 9.45                         | 7.27                           |
| Largest owner financial institution                                                            | 4                    | 3.15                         | 2.38                           |
| Other largest owner                                                                            | 5                    | 3.94                         | 1.68                           |
| C. Ultimate stake in top tier of group                                                         |                      |                              |                                |
| Majority widely held                                                                           | 55                   | 43.31                        | 65.45                          |
| Largest owner foreign                                                                          | 16                   | 12.60                        | 7.13                           |
| Largest owner family                                                                           | 34                   | 26.77                        | 17.76                          |
| Largest owner other company                                                                    | 17                   | 13.39                        | 15.66                          |
| Largest owner government                                                                       | 17                   | 13.39                        | 11.75                          |
| Largest owner financial institution                                                            | 15                   | 11.81                        | 16.50                          |
| Other largest owner                                                                            | 5                    | 3.94                         | 1.68                           |
| D. Bank control considering all individual group levels                                        |                      |                              |                                |
| Some group level has a bank stake > 25%<br>or more than 50% are widely held                    | 74                   | 58.27                        | 75.94                          |
| Bank holds direct stake < 50%<br>in some group level                                           | 25                   | 19.69                        | 17.76                          |
| Bank holds direct stake $\geq$ 50%<br>in some group level                                      | 5                    | 3.94                         | 5.31                           |
| Weak bank control (other majority<br>block present in top tier)                                | 58                   | 45.68                        | 25.58                          |
| Strong bank control (direct holding in top<br>tier > 50% or direct holding + free float > 75%) | 43                   | 33.90                        | 49.22                          |
| Medium bank control (remaining cases)                                                          | 26                   | 20.43                        | 25.20                          |

*Note.* The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Ownership structure is recorded during the year preceding the first takeover announcement. Panels B and C may have double counts. Financial institutions include banks, insurance firms, and investment funds.

## 4.2. Bank Control over Bidders

Bank control over equity voting rights derives primarily from two sources: direct holdings and proxy votes. Baums and Fraune (1995) show that banks control about 60% of the votes associated with widely held shares. This is due to the German proxy-voting system, where shareholders usually deposit their shares with banks and periodically grant general power of attorney to the custodian bank to vote all shares in the portfolio. Bank-owned direct stakes represent a lower bound on the fraction of voting rights controlled and average 7% for all bidders (measured right before the takeover; see Table IV). The sum of direct stakes and widely held shares represents an upper bound on bank control, averaging 55% for all bidders. This measure overstates true bank influence to the extent that banks cannot vote all shares deposited with them. Banks have at least some votes in 123 of 127 bidders. Considering the highest group level, bank ownership and potential control diverge even more. While banks own only 4.2% directly, they potentially control up to 58% of the voting rights.

In the empirical analysis, I employ several additional measures of bank control over bidders. Bank control refers to influence exerted by banks, insurance

TABLE IV  
Ownership Concentration and Bank Control in the Year Preceding the Takeover

|                                                                                    | Number not<br>equal to zero | Mean (%) | Median (%) |
|------------------------------------------------------------------------------------|-----------------------------|----------|------------|
| A. Stakes directly in listed firm (127 bidders, 715 acquisitions)                  |                             |          |            |
| Widely held                                                                        | 122                         | 47.48    | 50.00      |
| Largest stake                                                                      | 110                         | 47.41    | 50.00      |
| Second largest stake                                                               | 30                          | 4.23     | 0.00       |
| Third largest stake                                                                | 7                           | 0.84     | 0.00       |
| Sum of large stakes                                                                | 110                         | 52.48    | 50.00      |
| Number of different shareholder categories                                         | 110                         | 1.16     | 1.00       |
| Direct bank holdings                                                               | 29                          | 7.03     | 0.00       |
| Bank votes (direct stake + free float)                                             | 123                         | 54.52    | 50.00      |
| B. Ultimate stakes in majority owner of listed firm (77 bidders, 247 acquisitions) |                             |          |            |
| Widely held                                                                        | 65                          | 39.56    | 47.00      |
| Largest stake                                                                      | 71                          | 57.36    | 50.00      |
| Total blockholdings                                                                | 71                          | 60.44    | 53.00      |
| Direct bank holdings                                                               | 4                           | 1.38     | 0.00       |
| Bank votes (direct stake + free float)                                             | 65                          | 41.10    | 47.00      |
| C. Ultimate stake in top tier of group (127 bidders, 715 acquisitions)             |                             |          |            |
| Widely held                                                                        | 115                         | 53.77    | 50.00      |
| Largest stake                                                                      | 104                         | 42.00    | 40.00      |
| Total blockholdings                                                                | 104                         | 46.19    | 50.00      |
| Direct bank holdings                                                               | 20                          | 4.21     | 0.00       |
| Bank votes (direct stake + free float)                                             | 115                         | 58.07    | 50.00      |

*Note.* The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Ownership variables are recorded during the year preceding the first takeover announcement.

companies, or associated investment firms.<sup>18</sup> The first measure in Panel D of Table III is very general. It assumes bank control either if the bank has a direct stake exceeding 25% in some group level or if more than 50% of shares are widely held at the highest group level. According to this definition, about 58% of the firms are bank controlled, accounting for 76% of all takeovers. The second measure considers only direct stakes and assumes bank control if a bank owns between 25 and 50% in some group level. This applies to 20% of the bidders (18% of takeovers). The third measure is similar to the second, but based on majority stakes (4% of bidders and 5% of takeovers).

Fourth, I use both direct holdings and proxy votes in the top tier of the group to categorize firms into three groups with varying degrees of bank control. Specifically, I assume (1) weak bank control if the top tier has a majority shareholder who is not a financial institution and has less than 50% of its shares widely held (46% of bidders, 26% of takeovers); (2) strong bank control if either a financial institution holds a majority stake in the top tier or its stake plus the fraction widely held exceeds 75% (34% of bidders, 49% of takeovers). The residual group ("medium bank control") consequently has no majority shareholders, less than 75% free float, and one or more non-bank minority blockholders in its top tier and accounts for 25% of all acquisitions.

## 5. CROSS-SECTIONAL ANALYSIS OF THE MARKET REACTION TO TAKEOVER ANNOUNCEMENTS

To analyze the effect of ownership structure and bank control on performance, I first use event-study methodology to calculate market-and-risk-adjusted abnormal returns around the acquisition date. I then relate estimated abnormal returns to the ownership and bank control variables discussed above. Finally, I perform a series of sensitivity tests to investigate the robustness of the empirical results. The following sections describe the selection of the event date, the design of the statistical tests, and the results.

### 5.1. *Selection of the Event Date*

An essential condition for conducting an event study is to determine the event date as precisely as possible. Up to five events can potentially relay takeover-related information to investors: the first press release, the BKartA dates for the preacquisition filing, the approval (if applicable), the deal completion, and the postacquisition filing. I obtain all these dates from BKartA files and supplement

<sup>18</sup> Substantial links of ownership and control exist between the insurance and banking industries in Germany. For example, the largest insurer (Allianz) has substantial stakes in the two largest banks (Deutsche Bank and Dresdner Bank), and vice versa (see Boehmer, 1999b). Similarly, most investment funds are directly owned by banks. Therefore, it is difficult to separate the influence of banks from that of insurance firms and funds.

press releases on record at the BKartA with stories contained in Reuter's *Textline* and *Lexis-Nexis* databases.

I use the date of the press releases for all acquisitions that were publicly announced in the press before the respective filing date. Overall 271 takeovers were reported in the press, but for only 113 does the publication date precede the earliest BKartA date (see Table I). If no press release was published before the BKartA date, I distinguish between bidders that must file preacquisition forms and those that are only required to file postacquisition forms. For the former, I use the first available date from the BKartA correspondence. For the latter, I use the date of the postacquisition filing as the event date. Boehmer and Loeffler (1999) show that this approach considers the events having the largest information content. In particular, for firms not required to file preacquisition forms the completion date is not publicly known and thus no information is systematically conveyed to investors at that time.

## 5.2. Design of the Empirical Tests

To calculate abnormal returns, I first estimate market models from day  $-250$  to day  $-51$  relative to the earliest date related to the event (independent of the definition of the event date). I repeated all estimations using the adjustment for infrequent trading suggested by Scholes and Williams (1977). Since this procedure does not qualitatively alter the results below, I report only estimates based on the simple market model. The dependent variables are bidder returns adjusted for dividends and capital changes. The independent variable is the DAFOX index, a value-weighted performance index including all shares listed in the official Frankfurt market (see Goeppel and Schuetz, 1992). Then I compute cumulative abnormal returns (CARs) based on discrete and continuously compounded returns. Since the results do not differ materially, I report only estimates based on discrete compounding.

In Tables VI and VII, I compute means, medians, and the fraction of positive CARs. To determine statistical significance, I compute various test statistics, including the traditional test from Brown and Warner (1985), the standardized test (Patell, 1976), the standardized cross-sectional test (Boehmer *et al.*, 1991), and a cross-sectional test. To determine the effect of outliers on my results, I also compute simple sign and rank-sum tests. Since the results for different test statistics are qualitatively similar, the asterisks in the means column in Tables VI and VII correspond to the traditional test, those in the medians column to the rank-sum test, and those in the fraction-positive column to the sign test. The traditional test is calculated as

$$\frac{\frac{1}{N} \sum_{i=1}^N A_{iE}}{\frac{1}{N} \sqrt{\sum_{i=1}^N \frac{L}{T-1} \sum_{t=1}^T \left( A_{it} - \sum_{t=1}^T \frac{A_{it}}{T} \right)^2}}, \quad (1)$$

where  $N$  is the number of firms in the sample,  $A_{iE}$  is security  $i$ 's cumulative

abnormal over  $L$  days surrounding the event day,  $A_{it}$  is security  $i$ 's abnormal return on day  $t$ , and  $T$  is the number of days in security  $i$ 's estimation period (subscript  $i$  is omitted).

For the univariate cross-sectional analysis of CARs, I test the hypothesis that means and medians are equal across groups. For means, I apply a  $t$ -test to CARs standardized by their estimation-period standard deviation (assuming unequal variances if the null of equal variance is rejected at the 10% level), and for medians I apply a rank-sum test. The corresponding  $t$ - and  $\chi^2$ -values are listed below the respective panels. In addition, I employ multivariate WLS regressions, where all observations are divided by the estimation-period variance of abnormal returns to reduce heteroscedasticity. I have repeated all regression tests using OLS on CARs as well as on CARs divided by their estimation-period standard deviation. Since these alternative procedures do not qualitatively alter the results, I report only WLS estimates in this paper.

### 5.3. Abnormal Returns to Bidder Firms

Table V presents CARs for the whole sample for several event windows. In panel A all observations are weighted equally and I obtain significantly positive CARs

TABLE V  
Abnormal Performance for Bidder Shareholders around the Acquisition

| Event window                                    | Number of acquisitions | Average CAR% | Median CAR% | Percentage of CAR > 0 |
|-------------------------------------------------|------------------------|--------------|-------------|-----------------------|
| A. Statistics on 715 takeovers weighted equally |                        |              |             |                       |
| (-30, +1)                                       | 715                    | 0.77***      | 0.12        | 50.91                 |
| (-20, +1)                                       | 715                    | 0.82***      | 0.04        | 50.35                 |
| (-10, +1)                                       | 715                    | 0.43**       | 0.09        | 50.91                 |
| (-10, +5)                                       | 715                    | 0.43**       | 0.44*       | 53.01                 |
| (-10, +2)                                       | 715                    | 0.46**       | 0.23*       | 52.45                 |
| (-3, +1)                                        | 715                    | 0.23**       | 0.07        | 51.47                 |
| (-1, +1)                                        | 714                    | 0.15*        | 0.06        | 51.68                 |
| B. Statistics on 127 bidder averages            |                        |              |             |                       |
| (-30, +1)                                       | 127                    | 1.07         | 0.70*       | 55.12                 |
| (-20, +1)                                       | 127                    | 1.16         | 0.44**      | 56.69                 |
| (-10, +1)                                       | 127                    | 0.72         | 0.63*       | 59.84**               |
| (-10, +5)                                       | 127                    | 0.52         | 0.47*       | 56.69                 |
| (-10, +2)                                       | 127                    | 0.73         | 0.51*       | 56.69                 |
| (-3, +1)                                        | 127                    | 0.53*        | 0.28*       | 55.91                 |
| (-1, +1)                                        | 127                    | 0.22         | 0.10        | 52.76                 |

*Note.* The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Bidder CARs are estimated from a market model over the period from day -250 to -51 relative to the earliest date related to the takeover. A value-weighted index (DAFOX) is used to approximate market returns. Significance levels are indicated as follows: \*\*\* 1% level, \*\* 5% level, \* 10% level. The significance levels refer to a traditional  $t$ -test in the averages column, a rank-sum test in the medians column, and a simple sign test in the percent-positive column.

for the longer periods. For example, the CAR from day  $-10$  to  $+2$  relative to the event date has a mean of 0.46% and a median of 0.23% (53% positive). Shorter periods yield CARs that are still significantly different from zero, but somewhat smaller in magnitude. In the following cross-sectional analysis, I employ  $(-10, +2)$  CARs to represent the effects of the takeover on bidders' market values. This choice minimizes the influence of other unrelated events without relying on noisy estimates.<sup>19</sup>

To check the robustness of the estimates, I also average CARs for each bidder and then estimate statistics across bidders. This procedure gives less weight to takeovers of frequent acquirers, who often buy a series of small firms within a short time span. The results in panel B show that this exercise does not affect the results. In contrast, CARs are substantially larger across all event windows, although less significant due to the smaller number of observations.<sup>20</sup>

#### 5.4. *The Role of Bidders' Shareholder Structure*

In Table VI, I present initial results on how ownership structure affects acquisition quality. Panel A shows that the positive CARs can be attributed to bidders with a blockholder controlling at least 25%, but less than 50% of the bidder's equity (henceforth, a minority blockholder). To further investigate the effects of block ownership, I divide the sample into three categories depending on ownership of the majority of shares. Bidders in the resulting mutually exclusive categories have a majority widely held (415 deals), are majority-owned by one large shareholder (247 deals), or are owned by more than one large shareholder (53 deals). Using this stratification, we see that widely held bidders make acquisitions associated with a significantly positive CAR of 0.48% (Panel B), while majority-owned bidders have a CAR of 0.51% that is not statistically different from zero. Among the widely held firms, bidders where shareholders' interests are represented by a large

<sup>19</sup> While the economic significance in shorter windows is questionable, two factors contribute to making observed CARs small. First, in addition to the price run-up effects of potential rumors and insider trading (which was unrestricted in Germany during the sampling period), there is substantial event-date uncertainty associated with the lack of immediate publication requirements in Germany. Press publications generally appear in more than one newspaper. While I am confident that I have captured all published events, there is no guarantee that I have identified the first publication in the sense that another newspaper (that is not covered by the electronic news services I have used) may have published the same story a couple of days earlier. In addition, since the BKartA's primary goal is to monitor market concentration, and not the disclosure of information to investors, news may not always be released exactly when filings are received. Thus, I have confidence in the validity of the assigned event dates, but I cannot identify the exact date with a precision greater than about 1 week.

<sup>20</sup> To assess the economic efficiency of these transactions one would ideally compute the aggregate wealth change for each bidder–target combination. Unfortunately, only 24 sample transactions involve a publicly traded target firm, and for only 12 such pairs are stock-price data available (which cover only firms trading in the first tier of the Frankfurt stock exchange). This subset of firms is unfortunately too small to yield statistically reliable estimates and may not be representative for the full sample. Nevertheless, from day  $-10$  to  $+2$ , these 12 pairs achieve a combined abnormal gain of DM 374 million, of which 59% is due to the abnormal value increase of bidder firms. None of these estimates is statistically different from zero.

TABLE VI  
The Effect of Large Blockholders on Bidder Market Value around Takeovers

| Subsample                                                                            | N   | Average CAR | Median CAR | Percentage of CAR > 0 |
|--------------------------------------------------------------------------------------|-----|-------------|------------|-----------------------|
| A.                                                                                   |     |             |            |                       |
| Bidder with blockholder owning between 25% and less than 50%                         | 288 | 0.60**      | 0.20       | 52.43                 |
| Bidder without minority blockholder                                                  | 427 | 0.36        | 0.24       | 52.46                 |
| <i>p</i> -value <i>t</i> -statistic: 0.99, <i>p</i> -value $\chi^2$ -statistic: 0.41 |     |             |            |                       |
| B.                                                                                   |     |             |            |                       |
| Majority of shares of the listed sample firm is widely held                          | 415 | 0.48**      | 0.11       | 50.60                 |
| ...of which without large shareholder ( $\geq 25\%$ )                                | 256 | 0.28        | 0.03       | 50.39                 |
| ...of which with large shareholder ( $\geq 25\%$ )                                   | 159 | 0.81*       | 0.11       | 50.94                 |
| <i>p</i> -value <i>t</i> -statistic: 0.30, <i>p</i> -value $\chi^2$ -statistic: 0.48 |     |             |            |                       |
| Majority is not widely held and not by one shareholder                               | 53  | 0.03        | 0.20       | 54.72                 |
| Listed firm has majority shareholder ( $> 50\%$ )                                    | 247 | 0.51        | 0.48       | 55.06                 |

*Note.* The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Ownership variables are recorded during the year preceding the first takeover announcement. Bidder CARs are estimated from a market model over the period from day  $-250$  to  $-51$  relative to the earliest date related to the takeover. A value-weighted index (DAFOX) is used to approximate market returns. CARs are measured from day  $-10$  to day  $+2$  relative to the event date. Significance levels are indicated as follows: \*\*\* 1% level, \*\* 5% level, \* 10% level. The significance levels refer to a traditional *t*-test in the averages column, a rank-sum test in the medians column, and a simple sign test in the percent-positive column.

minority shareholder realize almost three times the value increase compared to firms without large shareholders (resulting in CARs of 0.81 and 0.28%, respectively). These results are consistent with the hypothesis that large shareholders are beneficial, but show that majority ownership imposes a cost as well. In contrast, a minority blockholder is beneficial whether it constitutes the only block (Panel A) or balances bank control deriving from proxy votes (Panel B).

### 5.5. The Role of Bank Control

Banks' proxy votes are likely to be most important in firms with a majority of widely held shares, and Table VI shows that they experience positive CARs on average. However, these benefits are primarily due to bidders that also have a large minority blockholder. Thus, takeovers appear to have the largest value to widely held bidders when large shareholders counterbalance bank influences.

To provide additional evidence on this issue, Table VII contains bidder CARs separated by the bank-control measures discussed in Section 4.2. While most bank-control variables have little explanatory power and in some cases yield ambiguous results, none of the estimates is consistent with a special monitoring function performed by banks. Specifically, the first row shows significantly positive CARs

TABLE VII  
The Effect of Bank Control on Bidder Market Value around Takeovers

| Subsample                                                                                 | N   | Average CAR | Median CAR | Percentage of CAR > 0 |
|-------------------------------------------------------------------------------------------|-----|-------------|------------|-----------------------|
| Some group level has a bank stake >25% or >50% widely held                                | 543 | 0.42**      | 0.16       | 51.38                 |
| Others                                                                                    | 172 | 0.58        | 0.38       | 55.81                 |
| <i>p</i> -value <i>t</i> -statistic: 0.83; <i>p</i> -value $\chi^2$ -statistic: 0.64      |     |             |            |                       |
| Weak bank control (other majority block present in top tier)                              | 184 | 0.26        | 0.38       | 53.80                 |
| Strong bank control (direct holding in top tier >50% or direct holding + free float >75%) | 351 | 0.40*       | 0.16       | 51.85                 |
| Medium bank control (remaining cases)                                                     | 180 | 0.77*       | 0.22       | 52.22                 |
| <i>p</i> -value $\chi^2$ -statistic: 0.94                                                 |     |             |            |                       |
| Bank holds direct stake <50% in some group level                                          | 127 | 0.42        | 0.25       | 52.76                 |
| No group level has a bank stake >25% or >50% widely held                                  | 172 | 0.58        | 0.38       | 55.81                 |
| Others                                                                                    | 416 | 0.42*       | 0.11       | 50.96                 |
| <i>p</i> -value <i>t</i> -statistic 0.81; <i>p</i> -value $\chi^2$ -statistic: 0.93       |     |             |            |                       |
| Bank holds direct stake $\geq$ 50% in some group level                                    | 36  | -1.77**     | -0.95      | 44.44                 |
| No group level has a bank stake >25% or >50% widely held                                  | 174 | 0.54        | 0.38       | 55.75                 |
| Others                                                                                    | 505 | 0.59***     | 0.23*      | 51.88                 |
| <i>p</i> -value <i>t</i> -statistic 0.05; <i>p</i> -value $\chi^2$ -statistic: 0.12       |     |             |            |                       |

*Note.* The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Ownership variables are recorded during the year preceding the first takeover announcement. Bidder CARs are estimated from a market model over the period from day -250 to -51 relative to the earliest date related to the takeover. A value-weighted index (DAFOX) is used to approximate market returns. CARs are measured from day -10 to day +2 relative to the event date. Significance levels are indicated as follows: \*\*\* 1% level, \*\* 5% level, \* 10% level. The significance levels refer to a traditional *t*-test in the averages column, a rank-sum test in the medians column, and a simple sign test in the percent-positive column.

if banks control a minority interest at some group level. While this result would be evidence of a positive effect of bank presence, the CARs to other bidders are not significant, but are larger in terms of both the mean and the median. Thus, the explanatory power of this test is limited.

The second row provides similarly ambiguous evidence. Analysis of the mean CARs shows that acquisitions are associated with the lowest return when bank control is weak and the highest return when it is medium. Analysis of median CARs shows that the lowest returns are achieved when bank control is strong, and the highest when bank control is weak. If anything, this finding corroborates the result that minority blockholders (medium bank control) perform an important monitoring role, but does not suggest a special monitoring role of banks. The third row shows that bidders with direct bank ownership below 50% in some group level

have lower CARs than those without any bank involvement, but again this result lacks statistical significance.

The most pronounced evidence is presented in the fourth row for bidders where banks hold majority stakes in some group level. The 36 takeovers by bank-controlled firms yield a statistically significant average CAR of  $-1.77\%$  (the median CAR is  $-0.95\%$ ), implying that firms where banks have the most control make the worst decisions. Given their large equity position in these firms, banks should have a strong incentive to act in shareholders' interest. Therefore, the negative returns suggest that the interest of the bank related to loans and fee-generating relations outweighs its equity interest.<sup>21</sup>

It is possible that bank-majority-controlled firms differ systematically from other firms. Although the method used to calculate abnormal returns adjusts for differences in systematic risk and market movements, other factors such as firm size and profitability could potentially cause the negative result. To investigate this possibility, Table VIII compares firm size, the market-to-book ratio of equity, a proxy for Tobin's  $q$ , net profits, leverage, and proxies for horizontal diversification across these two groups.<sup>22</sup> Bank-controlled firms are significantly smaller in terms of the book value of equity, but none of the other variables is significantly different for bank-majority-controlled bidders. Bank-controlled firms are more often conglomerates (which may be harder to value for outside investors), but the difference is not statistically significant. Therefore, it seems unlikely that the negative results above are caused by characteristics that are unique to firms controlled by financial institutions.<sup>23</sup>

Overall, acquisitions do not increase bidders' firm value more when financial institutions have partial control over the bidder group, but do decrease firm value when they have full control. Combined with the earlier result that takeovers by widely held firms do not increase value except when a minority blockholder provides a counterweight to bank influence due to proxy votes, there is little empirical support for the widespread contention that German banks provide efficient monitoring.

<sup>21</sup> Since only one bank-majority-controlled bidder acquires a publicly traded target with stock-price information available, I can make no meaningful assessment of the economic efficiency of these transactions.

<sup>22</sup> Firm size is measured by the book and market values of equity, net profits are measured by *Jahresueberschuss*,  $q$  is the book value of total assets divided by the book value of all liabilities plus the market value of equity, and leverage is the percentage of total liabilities of the book value of total assets. As proxies for horizontal diversification I use a dummy variable indicating whether the bidder is a conglomerate (operating in at least 5 of a possible 12 major industries).

<sup>23</sup> I performed two additional tests in this context. First, I compared market model estimates for bank-majority-controlled firms to those of other firms. Second, I used a logistic regression to model the probability that a firm is bank controlled, using several financial and other firm-specific measures over the year before the acquisition as independent variables. Since neither are the performance/risk estimates significantly different for bank-controlled firms nor can bank control be predicted using available data, these results are not reported in the paper.

TABLE VIII  
Characteristics of Firms That Are Majority-Controlled by a Financial Institution

|                                                                                                                     | Majority bank control  |      | Other firms |                        | <i>p</i> -value of <i>t</i> -statistic ( <i>H</i> <sub>0</sub> : means are equal) |
|---------------------------------------------------------------------------------------------------------------------|------------------------|------|-------------|------------------------|-----------------------------------------------------------------------------------|
|                                                                                                                     | Number of observations | Mean | Median      | Number of observations | Mean                                                                              |
| A. Bidder size                                                                                                      |                        |      |             |                        |                                                                                   |
| Book value of equity (DM million)                                                                                   | 9                      | 159  | 110         | 118                    | 362                                                                               |
| Market value of equity (DM million)                                                                                 | 9                      | 1385 | 590         | 112                    | 1935                                                                              |
| B. Bidder profitability                                                                                             |                        |      |             |                        |                                                                                   |
| Market-to-book ratio of equity                                                                                      | 9                      | 9.41 | 6.30        | 112                    | 6.68                                                                              |
| <i>q</i> : Book value of total assets/(market value of equity + book value of debt)                                 | 5                      | 0.73 | 0.84        | 36                     | 0.85                                                                              |
| Net profit (DM million)                                                                                             | 5                      | 81   | 43          | 38                     | 65                                                                                |
| C. Bidder leverage                                                                                                  |                        |      |             |                        |                                                                                   |
| Total debt/total assets                                                                                             | 5                      | 0.74 | 0.71        | 38                     | 0.69                                                                              |
| D. Horizontal diversification                                                                                       |                        |      |             |                        |                                                                                   |
| Fraction of bidders that are conglomerates (operating in more than 5 of 12 possible major industry classifications) | 9                      | 0.22 | N/A         | 118                    | 0.09                                                                              |
|                                                                                                                     |                        |      |             |                        | N/A                                                                               |

*Note.* A bidder firm is assigned to the “majority bank control” group if a financial institution controls more than 50% of the equity of any level of the business group including the bidder firm. The “other” group includes the remaining sample firms. The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target’s equity and voting rights are included. Financial-statement variables are recorded during the year preceding the first takeover announcement.

### 5.6. Regression Analysis of Minority Blockholders and Bank Control

Two basic findings have emerged from the analysis so far: minority blockholders are beneficial for bidder shareholders and bank control lacks the positive effects often attributed to it. In this section, I use a WLS (each observation is divided by the estimation-period abnormal return variance) regression analysis to obtain some insights into the robustness of these findings. The dependent variable is always the bidder CAR from  $-10$  to  $+2$  relative to the event day. I analyze two groups of variables describing bank control and other ownership information. An additional group of variables is used to control for deal-specific characteristics.

To measure bank control, I first use a dummy variable indicating that financial institutions own a majority stake in some level of the bidder group. Next, I construct three different continuous variables representing bank stakes depending on whether the bank owns the largest, the second, or third largest stake. In addition to these variables, I have used other bank control variables. Since they have no significant explanatory power for CARs, I do not report those additional regressions. The lack of explanatory power, however, again does not support the presumption that banks perform an important monitoring role.

Other ownership variables are the percentage of closely held shares in the bidder and two dummy variables indicating the presence of majority and minority blockholders in the bidder firm. In addition, I construct two interactive variables representing the percentage of shares closely held for firms with majority and minority blocks, respectively. Finally, I employ three control dummy variables indicating frequent acquirers, horizontal, and purely conglomerate acquisitions. I have repeated all regressions using several different sets of continuous and discrete control variables. Since none of these alternatives alters the main conclusions on bank control, they are not reported in this paper.

The regression results are presented in Table IX. Each of the control variables enters with a plausible sign. Specifically, deals by frequent acquirers and conglomerate acquisitions have lower CARs on average, while horizontal acquisitions have larger CARs. The latter coefficients are consistent with the results obtained by Mørck, *et al.* (1990) for U.S. takeovers.

Regressions (1)–(3) test the effect of direct block ownership on abnormal performance. Consistent with the univariate tests above, majority ownership has a negative and minority ownership a positive coefficient, although neither is statistically significant when controlling for other firm characteristics. Thus, the multivariate analysis provides only limited support for the conclusions from the univariate tests on ownership structure.

The subsequent three regressions (3)–(6) focus on the bank-control variables defined above and yield results that are more pronounced. First, bidders that are majority-owned by banks make significantly worse acquisitions than other bidders, even when controlling for other variables. Second, abnormal performance decreases in bank ownership if the financial institution owns the largest stake, but

TABLE IX  
Regression Results for the Effect of Bank Control and Large Blockholders on Bidder Value around Takeovers

| Model number                                                          | 1                 | 2                 | 3                 | 4                 | 5                 | 6                 | 7                          | 8                            | 9                               |
|-----------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------------------|------------------------------|---------------------------------|
| Sample                                                                | All               | All               | All               | All               | All               | All               | First<br>deal of<br>bidder | Low<br>frequency<br>acquirer | Target is<br>exchange<br>listed |
| Intercept                                                             | 0.0067<br>1.765   | 0.0070<br>1.819   | 0.0054<br>1.284   | 0.0047<br>1.460   | 0.0047<br>1.454   | 0.0057<br>1.374   | -0.0002<br>-0.018          | 0.0013<br>0.209              | 0.0006<br>0.024                 |
| Bank owns $\geq 50\%$ in some<br>level of bidder group                |                   |                   |                   | -0.0169<br>-1.782 |                   | -0.0197<br>-1.957 | -0.0216<br>-0.841          | -0.0227<br>-1.791            | -0.0339<br>-0.418               |
| % bank votes if bank holds<br>largest block                           |                   |                   |                   | -0.0000<br>-0.011 | -0.0001<br>-1.160 | 0.0000<br>0.024   | -0.0000<br>-0.087          | 0.0000<br>0.052              | -0.0004<br>-0.354               |
| % bank votes if bank holds<br>second largest block                    |                   |                   |                   | 0.0005<br>1.895   | 0.0005<br>1.820   | 0.0007<br>2.358   | -0.0002<br>-0.312          | -0.0000<br>-0.083            | 0.0067<br>1.838                 |
| % bank votes if bank holds third<br>largest block                     |                   |                   |                   | 0.0024<br>1.784   | 0.0024<br>1.799   | 0.0027<br>1.970   | 0.0028<br>1.706            | 0.0024<br>1.792              | -0.0045<br>-0.474               |
| (% held by large blockholders) * 100                                  | -0.0038<br>-0.617 |                   |                   |                   |                   | -0.0187<br>-2.000 | 0.0123<br>0.638            | -0.0159<br>-1.332            | -0.1564<br>-1.377               |
| (% held by large blockholders if<br>largest block $\geq 50\%$ ) * 100 |                   | -0.0063<br>-0.950 |                   |                   |                   |                   |                            |                              |                                 |
| (% held by large blockholders if<br>largest block $\geq 50\%$ ) * 100 |                   | 0.0028<br>0.307   |                   |                   |                   |                   |                            |                              |                                 |
| Dummy variable indicating<br>majority ownership in bidder             |                   |                   | -0.0014<br>-0.316 |                   |                   | 0.0081<br>1.249   | 0.0072<br>0.460            | 0.0101<br>1.037              | 0.1052<br>1.688                 |
| Dummy variable indicating<br>minority ownership in bidder             |                   |                   | 0.0023<br>0.653   |                   |                   | 0.0053<br>1.192   | 0.0163<br>1.221            | 0.0135<br>1.608              | 0.0932<br>2.715                 |

|                                                     |                   |                   |                   |                   |                   |                   |                   |                   |
|-----------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Dummy variable indicating frequent acquirers        | -0.0077<br>-2.237 | -0.0085<br>-2.408 | -0.0079<br>-2.264 | -0.0070<br>-2.154 | -0.0066<br>-2.046 | -0.0087<br>-2.437 | -0.0047<br>-0.433 | -0.0369<br>-1.610 |
| Dummy variable indicating horizontal acquisitions   | 0.0074<br>2.089   | 0.0071<br>2.001   | 0.0071<br>2.011   | 0.0075<br>2.129   | 0.0074<br>2.094   | 0.0081<br>2.288   | 0.0049<br>0.479   | 0.0156<br>2.879   |
| Dummy variable indicating conglomerate acquisitions | -0.0072<br>-1.642 | -0.0075<br>-1.700 | -0.0075<br>-1.701 | -0.0064<br>-1.477 | -0.0068<br>-1.566 | -0.0059<br>-1.355 | -0.0261<br>-2.453 | -0.0137<br>-2.030 |
| No. of observations                                 | 715               | 715               | 715               | 715               | 715               | 715               | 109               | 342               |
| Adjusted $R^2$                                      | 0.016             | 0.016             | 0.016             | 0.027             | 0.024             | 0.043             | 0.105             | 0.072             |
| p-value $F$ -statistic                              | 0.004             | 0.006             | 0.006             | 0.000             | 0.001             | 0.001             | 0.020             | 0.000             |

*Note.* The dependent variable is the  $(-10, +2)$  bidder CAR. Each cell contains the WLS parameter estimate (each observation is divided by the estimation-period abnormal return variance) and the corresponding  $t$ -statistic (in italics). The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Ownership and financial-statement variables are recorded during the year preceding the first takeover announcement. Bidder CARs are estimated from a market model over the period from day  $-250$  to  $-51$  relative to the earliest date related to the takeover. A value-weighted index (DAFOX) is used to approximate market returns. In model 7, the subsample is based on the first deals over the whole sampling period and all available transaction. Since stock-price information is not available not for all deals, the number of observations is less than 127. In model 8, low frequency bidders are defined as bidders that acquire less than the median number of targets during the sampling period.

increases significantly if another party owns the largest stake. These estimates are robust in the sense that they do not change in sign or magnitude as other variables are added to the model.

The last three regressions provide additional tests of the robustness of the results by applying the full model (6) to different subsamples. Model (7) includes only each bidder firm's first deal during the sampling period and (8) includes only acquisitions of bidders making less than the median number of acquisitions. While 95 cases share both characteristics, each sample should contain firms where it is less likely that the current acquisition has already been anticipated by the market.<sup>24</sup> Model (9) includes only exchange-listed target firms, where greater public interest and investor scrutiny may accentuate the consequences of the control structure. Out of the 24 listed-target deals, four are also first transactions and sixteen are completed by infrequent acquirers. The estimated coefficients have about the same sign and magnitude as in the full sample but are generally less significant.

Overall, the regression results are consistent with the univariate analysis above in that they corroborate the lack of benefits to bidders from having financial institutions as shareholders, unless there is a counterbalancing large non-bank shareholder. When bank stakes are dominated by the voting power of another blockholder, bank involvement is beneficial to bidder firms. In contrast, majority control by banks is clearly to the detriment of shareholders.

### 5.7. *Assessing the Plausibility of the Results*

Several problems are associated with an analysis like the one presented above. An issue that cannot be addressed due to lack of data is how the market value of debt is affected by takeovers, especially by bank involvement. Another issue is that German equity markets may not be sufficiently deep to efficiently respond to new information. The consequence of this is that stock returns do not react quickly to new information and inferences based on event studies are misleading. In addition, the lack of immediate publication requirements increases event-date uncertainty, which in turn reduces the power of the tests. In this section, I attempt to address these issues in some detail. To reduce heteroscedasticity, all regressions

<sup>24</sup> Since several firms in my sample acquire more than one firm, the frequency of takeovers should be related to the announcement effect associated with acquisitions. To the extent that a series of acquisitions is anticipated by the market, the first takeover should result in more pronounced CARs (see Malatesta and Thompson, 1985). Alternatively, frequent acquirers should have lower CARs on average. In supplemental regressions not reported here I find some support for these arguments. First deals are associated with larger CARs, although the effect is not significantly different from zero. Univariate estimations show, however, that the mean CAR for first acquisitions is 1.12% and highly significant, while subsequent deals have a mean of 0.34% (the corresponding medians are 1.15 and 0.20%, respectively). The number of deals per bidder also has a significantly negative effect using the regression model. The latter result holds both for a dummy variable representing frequent acquirers and a continuous variable representing the logarithm of the number of acquisitions, and models additionally incorporating the first-deal dummy variable. On average, infrequent acquirers achieve significant CARs of 0.85% (median: 0.50%), while frequent bidders have CARs of only 0.05% (−0.11%).

below are weighted by the estimation-period variance of abnormal returns. Where appropriate, the magnitudes of CARs are reported in the text.

*5.7.1. The role of deal size and group structure.* If the net present value of acquisitions is indeed reflected in the estimated CARs, they should be positively related to the relative size of the transactions (*ceteris paribus*). Similarly, CARs should be more pronounced for direct acquisitions (the exchange-listed firm itself purchases the target) than for indirect acquisitions (a subsidiary purchases the target). Since most target firms are not publicly traded, I use sales and the book value of equity as size proxies.

The regression results in Table X are consistent with a positive relation between abnormal performance and relative deal size. The first two regressions yield coefficients on relative book value and relative sales that have the expected signs, but only the former is significant. The third regression shows that CARs increase significantly in the (logarithm of) target size when (the logarithm of) bidder size is held constant (not transforming bidder and target size does not alter this result). The fourth regression shows that indirect acquisitions are associated with lower abnormal returns than direct acquisitions. The corresponding CARs for direct acquisitions have a highly significant mean of 1.04% (median: 0.36%), while the mean CAR of indirect acquisitions is only 0.06% (median: 0.05%) and not significant.

TABLE X

Regression Results of Relative Transaction Size for German Acquisition between 1984 and 1995

|                                                                           |                       |                       |                       |                       |                       |                       |
|---------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Intercept                                                                 | 0.002<br><i>0.817</i> | 0.001<br><i>0.766</i> | 0.028<br><i>0.909</i> | 0.006<br><i>2.438</i> | 0.003<br><i>1.079</i> | 0.026<br><i>0.814</i> |
| Ratio of book value of equity of target<br>firm to bidder firm            | 0.026<br>2.283        |                       |                       |                       | 0.025<br>2.127        |                       |
| Ratio of sales of target firm to bidder firm                              |                       | 0.010<br>1.525        |                       |                       |                       |                       |
| ln (book value of target equity in<br>DM billion)                         |                       |                       | 0.002<br>2.679        |                       |                       | 0.002<br>2.638        |
| ln (book value of bidder equity in<br>DM billion)                         |                       |                       | -0.003<br>-1.880      |                       |                       | -0.003<br>-1.674      |
| Dummy variable: 0 for direct acquisitions,<br>1 for indirect acquisitions |                       |                       |                       | -0.007<br>-2.155      | -0.003<br>-0.727      | -0.002<br>-0.491      |
| Number of observations                                                    | 486                   | 422                   | 486                   | 715                   | 486                   | 486                   |
| Adjusted $R^2$                                                            | 0.009                 | 0.003                 | 0.017                 | 0.005                 | 0.008                 | 0.015                 |
| $p$ -value $F$ -statistic                                                 | 0.023                 | 0.128                 | 0.007                 | 0.032                 | 0.058                 | 0.017                 |

*Note.* The dependent variable is the (-10, +2) bidder CAR. Each cell contains the WLS parameter estimate (each observation is divided by the estimation-period abnormal return variance) and the corresponding  $t$ -statistic (in italics). The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Ownership and financial-statement variables are recorded during the year preceding the first takeover announcement. Bidder CARs are estimated from a market model over the period from day -250 to -51 relative to the earliest date related to the takeover. A value-weighted index (DAFOX) is used to approximate market returns.

Adding the size variables to the model, however, eliminates the explanatory power of the indirect-purchase dummy. Nevertheless, I have repeated the complete analysis of the effects of ownership structure and bank control above using only direct acquisitions. Since this alters none of the results and conclusions, I retain the larger sample including direct and indirect acquisitions.

*5.7.2. The role of takeover-related performance and risk changes.* In Table XI, I investigate whether (1) investors can anticipate the takeover's subsequent effect on performance and risk at the time the deal is first publicly announced and (2) this anticipation is reflected in abnormal returns. To this end I calculate the takeover-induced changes in the market-model intercept (a crude performance proxy), the market-model  $\beta$ , and its root mean-squared error (proxies for systematic and unsystematic risk, respectively). I estimate each measure during the year preceding the first takeover-related event minus 1 month and during the year following the postacquisition filing plus 1 month. From these estimates, I compute percentage and absolute changes from before to after the takeover.

TABLE XI  
Regression Results of Takeover-Related Performance and Risk Changes for German Acquisition  
between 1984 and 1995

|                                                                                                      |                         |                         |
|------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|
| Intercept                                                                                            | 0.003<br><i>1.666</i>   | 0.011<br><i>2.304</i>   |
| Absolute change in the market-model intercept from the<br>year before to the year after the takeover | 3.704<br><i>2.492</i>   |                         |
| Absolute change in systematic risk from the year before to<br>the year after the takeover            | 0.000<br><i>0.037</i>   |                         |
| Absolute change in the market-model root MSE from the<br>year before to the year after the takeover  | -0.472<br><i>-1.801</i> |                         |
| Relative change in the market-model intercept from the<br>year before to the year after the takeover |                         | 0.000<br><i>1.150</i>   |
| Relative change in systematic risk from the year before to<br>the year after the takeover            |                         | -0.002<br><i>-0.936</i> |
| Relative change in the market-model root MSE from the<br>year before to the year after the takeover  |                         | -0.006<br><i>-1.775</i> |
| Adjusted $R^2$                                                                                       | 0.010                   | 0.005                   |
| $p$ -value $F$ -statistic                                                                            | 0.019                   | 0.100                   |

*Note.* The dependent variable is the  $(-10, +2)$  bidder CAR. Each cell contains the WLS parameter estimate (each observation is divided by the estimation-period abnormal return variance) and the corresponding  $t$ -statistic (in italics). The sample includes 715 German takeovers by 127 bidders between 1984 and 1995. Only transactions where the bidder acquires at least 50% of the target's equity and voting rights are included. Ownership and financial-statement variables are recorded during the year preceding the first takeover announcement. Bidder CARs are estimated from a market model over the period from day  $-250$  to  $-51$  relative to the earliest date related to the takeover. A value-weighted index (DAFOX) is used to approximate market returns. To estimate changes in risk and performance, the market model before the takeover is estimated over the year preceding the earliest related announcement minus 20 trading days; the market model afterward is estimated over the year following the latest related announcement plus 20 trading days.

While subsequent performance and risk changes are not known at the time of the takeover, the tests provide evidence on the plausibility of the CAR estimates. The estimation yields significantly positive coefficients on absolute changes of the performance proxy and significantly negative coefficients on both absolute and relative changes in unsystematic risk. The signs of the coefficients are consistent with a correct anticipation by market participants: takeovers associated with larger increases in performance and larger decreases in systematic (and unsystematic) risk yield larger CARs.

*5.7.3. Target-firm abnormal performance.* To validate the event-date selection, I estimate abnormal performance for 46 publicly traded target firms (including 12 acquired by the bidders analyzed in this study), using the same event dates applied to the bidder estimations. The target sample experiences a significant CAR of about 15% over the period  $(-10, +2)$  relative to the earliest deal announcement. This result is comparable to but slightly lower than target returns in the United States. The results suggest that it is unlikely that new information about the pending acquisition did not emerge on the selected dates.

*5.7.4. Summary of plausibility tests.* The estimated CARs for German bidder firms are small, but show plausible correlations with variables representing the relative size, acquisition-induced risk and performance changes, and the timing of the transactions. Moreover, publicly traded target firms show substantial abnormal performance around the event dates selected for the bidder firms.

## 6. CONCLUSIONS

In an attempt to establish a link between ownership structure and performance, I analyze the effect of German takeovers on the market value of bidding firms. I identify the pyramidal business groups around listed German corporations, their respective owners, and the degree of bank control, and document that most exchange-listed German firms are controlled by large shareholders and financial institutions. The empirical analysis reveals several interesting features of German corporate governance.

- On average, takeovers increase the value of the acquiring firm.
- Majority owners provide no clear-cut benefit to bidder firms in that the quality of takeover decisions is not better for majority-owned companies.
- Large blockholders controlling less than 50% appear to play an important monitoring role, especially if banks are involved. Specifically, bidders where banks potentially control a large fraction of the voting power via proxy votes clearly benefit from minority blockholders. Bank involvement is beneficial if the institution holds the second- or third-largest stake, but not if it holds the largest stake. Therefore, it seems that decision quality is improved (in the sense of increasing shareholder wealth) only if there is a force independent of the bank.

- The most value-reducing takeovers are completed by bidders whose groups include firms that are majority-controlled by financial institutions. This result, not consistent with the presumption that German banks provide an efficient monitoring function to corporations, is robust with respect to various specifications of the test. Even if these acquisitions are part of an efficiency-enhancing restructuring program, bidder shareholders lose wealth.

While the lack of data on corporate debt limits the ability to draw inferences on the efficiency of the transactions studied in this paper, I show that both highly concentrated ownership and substantial bank control per se have only a modest cross-sectional effect on German corporations and generally lack the positive consequences often ascribed to them.

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