The Corporate Governance Endgame – An Economic Analysis of Minority Squeeze-out Regulation in Germany

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This Version: January, 2012

Abstract

This paper examines minority squeeze-outs and their regulation in Germany, a country where majority shareholders have extensively used this tool since its introduction in 2002. Using a brand-new and unique sample with data on final court rulings and compensations, we carry out a detailed analysis of the costs and benefits of the procedure on a sample of 323 squeeze-outs of publicly listed companies from 2002 to 2011. In general, we find that stock prices react positively to squeeze-out announcements. This reaction is larger when the squeeze-out offer does not follow a previous takeover offer. We also find that German majority shareholders pay larger premia than non-German ones. Finally, we observe that squeeze-outs are often legally challenged by minority shareholders, either with an action of avoidance (*Anfechtungsklage*) or with an appraisal procedure (*Spruchstellenverfahren*), and we document substantial differences among the two procedures.

JEL classification: G14, G34, G38, K22

Keywords: Corporate Governance, Investor protection, Event studies, Squeeze-outs, Germany.

*We thank Shrikant Jategoankar, Christopher Priberny, conference participants at the 17th Meeting of the German Finance Association (Hamburg), FMA Annual Meeting 2010 (New York), 5th Annual Conference on Empirical Legal Studies (New Haven), and seminar participants at the Free University of Bolzano/Bozen, and Università Cattolica. We also thank Olsi Greveni and Michele Agnoletti for valuable research assistance. Croci acknowledges financial support for this project from the Italian Ministry of Research and Higher Education (PRIN 2008 - Research Number 20082R4ZKJ).

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Abstract

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1. Introduction

According to Shleifer and Vishny (1997) corporate governance "deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment". Following their definition, we consider squeeze-out offers to be *corporate governance endgames.* The right to squeeze out minority shareholders allows a shareholder who owns, or a bidder who has acquired, a very large part of the share capital to acquire the outstanding shares. If minority shareholders do not get an appropriate return on their investment when being forced out of the company, they will never have a second chance to get a return again in the future.

To facilitate delistings of publicly listed companies, particularly after an acquisition, national legislations in Europe give controlling shareholders who own a large fraction of the targets' equity capital the right to acquire the remaining outstanding shares. In fact, at the time of the "Report on the implementation of the Directive on Takeover Bids" prepared by the European Commission (EC) in February 2007, all EU countries had a so-called *squeeze-out* rule already in place or they were introducing it in their legislations. Many countries introduced squeeze-out rules to implement the Directive on Takeover Bids (2004).[1] As the EC Report states "the aim of the squeeze out rule is to force minorities out of the company liberating the bidder from costs and risks which the continued existence of minorities could trigger".[2] Moreover, the report argues that the squeeze-out rule lowers the cost of completing an acquisition, thus making takeovers more attractive.

[1] Directive 2004/25/EC of the European Parliament and of the Council of 21 April 2004 on takeover bids.
[2] See page 9.

While it is clear that a squeeze-out rule minimizes the risks that a few small shareholders unwilling to accept the initial offer may block an efficient takeover, it also gives rise to a situation where the majority shareholder can take unfair advantage of minority shareholders. In fact, once the bidder has obtained control and owns more than 90%-95% of the target's capital, it can offer a very low price to buy out the remaining shareholders. Trading liquidity issues worsen this situation. In fact, minority shareholders cannot really hope to sell their shares in the open market because they lack liquidity. Therefore, as argued by Maug (2006), there is a trade-off between fairness-- that is the rights of minority shareholders to a fair distribution of the takeover gains –and efficiency of the takeover process –that is the maximization of the value of the company.

Even if the squeeze-out rule exists in many countries, the specific regulations and the legal frameworks are different. In Germany, the largest economy in the European Union (EU), the squeeze-out rule was introduced on January 1, 2002 and the percentage of the equity capital required to force a squeeze-out is 95%. Since the squeeze-out rule is part of the Stock Corporation Act (AktG) and not of the Takeover Act, squeeze-out offers do not have to follow previous public takeover offers.[3]

Studying squeeze-out offers in Germany is particularly important because of its regulation and the extensive use that German majority shareholders made of this tool. Once the squeeze-out proposal is announced by the controlling shareholder, the company's general shareholder meeting has to approve it. A simple majority is enough to guarantee the approval of the proposal, a sure thing considered the large stake held by the controlling shareholder. In

[3] In fact, in Germany, the squeeze-out rule also applies to private companies. Since 2006, a new procedure that applies solely after takeover has also been introduced (übernahmerechtlicher Squeeze-out).

the proposal, the acquirer offers to the minority shareholders a cash compensation. To protect minority shareholders, the German legal system relies on two different procedures: the appraisal procedure (*Spruchstellenverfahren* in German), which is a request to verify the fairness of the cash compensation offered; and the *Anfechtungsklage*, which is an action of avoidance. Differently from the action of avoidance, the appraisal procedure does not block the delisting of the target company. This procedure is only aimed at increasing the compensation offered to minority shareholders. While both the action of avoidance and the appraisal procedure are decided by a court ruling, the *latter* is de facto simply an arbitration procedure.

Immediately after the introduction of the new squeeze-out rule, 106 delistings following a squeeze-out took place in Germany only in 2002 and an additional 52 in 2003, suggesting that the new rule was certainly welcome by controlling shareholders in order to delist their companies from the Stock Exchange. Thanks to a unique hand-collected dataset provided by the German *Schutzgemeinschaft der Kapitalanleger* ("SdK – the independent association of shareholders and investors") we are able to create a sample of 307 squeeze-outs of publicly listed companies from 2002 to 2011. *SdK* also provides unique information about actions of avoidance and the appraisal procedures, with final rulings and compensations. These data permit us to carry out the first detailed analysis of the costs and benefits of the squeeze-out procedure, presenting a complete picture of all German squeeze-outs since its introduction in 2002.

Controlling shareholders owned on average 97.2% of the company's equity capital, well above the threshold required to force a squeeze-out. A significant amount of money is at stake in these transactions: the Euro value of the minority ownership stakes at the squeeze-out

announcement was about 7.2 billion Euros, with a few deals where the value of the minority stake was in excess of 500 million Euros. The squeeze-out announcement is generally well received by investors. We compute the abnormal returns around the announcement of the squeeze-out proposal and find that stock prices of target firms in squeeze-out offers increase by about 10% in the five-day interval [-2, +2] around the announcement day. The four-week bid premium is around 9%, and this magnitude is comparable to the few previous studies on squeeze-outs in other countries.[4] For example, Bates and Lemmon (2006) document a bid premium of 10% in short-form mergers in the US.

Using a unique hand-collected *SdK* data set, we can determine how often German investors use the two legal procedures designed to protect them. As of October 2011, we have information about 323 procedures on which 251 have been challenged in courts using actions of avoidance (122), appraisal procedures (226), or both (97). We examine whether using these procedures generated positive gains for minority shareholders. This leads to the analysis of the economic rationales behind squeeze-outs: is it optimal for a minority shareholder to start an arbitration procedure or even trying to block the squeeze-out? We analyze this problem both from the point of view of minority investors and from that of the controlling shareholder. For a subsample of completed procedures, we find that the average additional compensation is 35.04%, but courts usually award a larger compensation in appraisal procedures (47.52%) than in actions of avoidance (13.54%). However, these numbers fail to take into account an important issue: the length of the procedures. In fact, we document an important difference in the average length of these two procedures. The appraisal procedure is on average longer than

[4] The only other large-scale empirical study on European squeeze-outs is provided by Atanasov et al. (2010) but the focus of their analysis on tunneling in Bulgarian privatized firms is completely different from ours.

the action of avoidance (9 months vs. 43 months). Under given regulations, firms had also to pay only a legal interest rate of 2% (increased to 5% from September 2009) over the base interest rate (*Basiszinssatz)* for delaying the payment of the cash compensation with a very low initial offer. Taking into account the opportunity cost of delaying the payment of the cash compensation, we find that minority investors still obtain a very large return (an annualized rate of 15.61%) from challenging the cash compensation.

We also study the importance of the identity of the controlling shareholders that initiate squeeze-outs. As argued in the literature (Demsetz and Lehn, 1985, Holderness and Sheehan, 1988), the types of controlling shareholders can play a key role in determining the firm's strategy. Different controlling shareholders have different incentives, which can translate into differences in their behavior: an owner-manager of a family firm trying to buy out minority investors in a listed subsidiary may be more willing than a professional manager that runs a widely held company to make a large initial offer to avoid dealing with minority shareholders. Consistent with this hypothesis, our results show that minority shareholders are better off, at least initially, when the firm's ultimate owner is a family. We also notice some differences between German and non-German owners, with German owners more likely to offer higher premiums and to generate larger market reactions. However, we are able to explain part of this difference; many squeeze-outs where the owner is a non-German (company or individual) follow a takeover, and stock prices may have already incorporated part of the reaction before the announcement.

Finally, we extend our analysis to examine the determinants of the squeeze-out decision. We find that large firms controlled by a large shareholders are the most likely to be

delisted. We also note that a positive stock price performance increases the likelihood of a squeeze-out, but operating performance has the opposite effect. German owners are more reluctant than foreigners to use the squeeze-out procedure.

To summarize, our paper contributes to the literature performing the first in-depth economic cost-benefit analysis of the current squeeze-out procedures in a European Union country - Germany. Using a brand-new hand-collected database of squeeze-outs with unique and non-public data, we offer new insights on this procedure taking into account the minority investors' point of view and firms' strategies. An ancillary, but not less significant, result of our study is about the importance of the identity of the firm's ultimate owner.

The rest of the paper proceeds as follows. Section 2 reviews the institutional background, describing the introduction of the squeeze-out rule in Germany and the procedures that minority investors can use to protect their interests. Section 3 presents the sample, and the data sources used in the analysis. Section 4 summarizes the results of the empirical analysis and provides interpretation of these findings. Section 5 studies the determinants of the squeeze-out decision, and Section 6 concludes.

2. Institutional Background

2.1 Introduction of the squeeze-out rule

As of 1 January 2002, in Germany, a major shareholder who owns at least 95% of the capital of a company, can request the exclusion of the other shareholders of the Company in exchange for the payment of a reasonable cash compensation through a Squeeze-out according to §§ 327 of the German Stock Corporation Law (*Aktiengesetz*, or *AktG*).

The amount of the cash compensation offered is set by the majority shareholder. This settlement offer is usually based on a valuation report commissioned by an accounting firm on behalf of the main shareholder. The latter is required to justify the appropriateness of the cash compensation offered in a written report to the general meeting (GM). The offer of cash compensation also has to be approved by an independent auditor, who shall be selected and appointed by a competent court. However, it is customary that the auditor will be appointed based on a proposal by the main shareholder and that the preparation and audit of the valuation report will be conducted in parallel. Legal actions brought up minority by shareholders against such practice regularly failed before the German courts.

The general meeting decides by a simple majority vote cast on the transfer of shares formerly held by minority shareholders. As the main shareholder has the majority of votes at the GM and as the squeeze-out is carried out at his request, the adoption of the decision is in fact already a certainty in advance. The management board of the squeezed-out company has to notify the transfer decision through registration in the Commercial Register. According to § 327e para 3 AktG through registration of the transfer resolution all the shares of minority shareholders are legally transferred to the controlling shareholder. Issued share certificates--up to their delivery –securitize only the entitlement to the cash compensation.

Any minority shareholder affected by the squeeze-out may (i) request nullification or (ii) annulment of the transfer decision of the general meeting through an action of avoidance (*Anfechtungsklage*); and (iii) can check the appropriateness of the amount of cash compensation offered in court under a so-called judicial appraisal procedure (*Spruchstellenverfahren*). A nullification is justified only if there have been serious errors made

in the decision process, the action for an annulment has to be directed against other legal faults during the transfer resolution.

If a sole shareholder requests in time an action for annulment and action for rescission, the registration of the transfer resolution in the commercial register is delayed considerably. As a consequence, registration is only possible when the action is finally dismissed, or withdrawn from the minority shareholder, or termination of proceedings was made possible by a court settlement. To overcome the registry ban, legislation provides for an expedited approval process.

The appraisal procedure to review the adequacy of the cash compensation can be used only after the end of the squeeze-out proceedings and thus have no suspensive effect. The amount of the cash payment in accordance with § 327b, para 1 AktG, must take into account the situation of the company at the time of the GM decision.

According to § 327b, para 2 AktG, from the registration date of the share transfer resolution in the commercial register on, minority shareholders are only entitled to an interest payment. Until September 2009, this interest payment was 2% above the base interest rate according to § 247 of the Civil Code. Since September 2009, the interest payment has been increased to 5% above the base interest rate.[5] Hence, following the transfer resolution, the shares have therefore no more upside price potential.

2.2 Practice of annulment and legal challenge

[5] Artikel 1 des Gesetzes vom 31. Juli 2009 (BGBl. I S. 2509).

According to a study by the German Share Institute DAI (2007) the rate of challenged squeeze-out transactions has steadily increased from 20% in 2002 to 96% in 2006. Thus, an unchallenged registration of the transfer resolution in the commercial register is currently rather the exception than the rule. Since the enactment of the UMAG law on 31 May 2007,[6] the DAI (2007) has evaluated the termination of proceedings for annulment and appeal procedures for all transactions announced until November 2005. The DAI analysis shows that more than 80% of procedures were settled. In almost all cases, the settlement has been achieved by increasing the cash compensation. In these procedures were, on average, about 15 plaintiffs involved, during an average procedure time of about 9 months.

A company survey conducted by the DAI shows that, on average, 5.8 claims were brought up in court against the GM resolution. At the same time, 4.5 third parties who were involved in several legal challenges against squeeze-out companies are co-participating on the side in each court challenge (so-called "*Nebenintervention*"). By order of 18 June 2007 (Decision II ZB 23/06) the Federal Court has established a separate cost risk for a "*Nebenintervention*" in nullity and appeal procedures.

2.3 Comparative Discussion of Squeeze-out Regulations in Germany and the US

For the forced exclusion of minority shareholders by the majority shareholder in the United States, stock corporation laws (e.g., corporation statutes like Delaware General Corporation Law, Model Business Corporation Act, Revised Model Corporation Act, Internal Revenue Code)

[6] The UMAG (the corporate integrity and modernization of the right of avoidance) law has introduced a rule that is the German equivalent of the business judgement rule applied in the US. It has also introduced a derivative action in the common law sense, allowing shareholder lawsuits against board members

offer a variety of procedures; dissolution, sale of assets, reverse stock split, and merger are available. In the United States, a long-form cash-out merger or a tender offer followed by a short-form merger are the predominant freeze-out transactions.

In a *long-form merger*, the merger has to be negotiated by the board of directors and adopted by the Board of Directors of both companies (*plan of merger*). Subsequently, the shareholders of both companies have to approve the plan of merger. Depending on the state, a simple majority (e.g., Delaware, California) or a qualified 2/3-majority (New York) is required. For the *short-form merger,* due to the concentration of share ownership, an agreement of the two shareholders meetings is not required. This simplified version is possible if the acquiring company already holds an ownership of 90%. As Subramanian (2007) points out, two-thirds of freeze-outs in the United States between June 2001 and April 2005 was executed through a long-form statutory merger. Due to differences in bargaining power, Subramanian (2007) finds strong empirical evidence that controlling shareholders pay more in statutory merger freeze-outs than in tender offer followed by a short-form merger.

A merger alone would not lead to the exclusion of minority shareholders. The key step is, to adjust the conditions of the merger so that the minority shareholders will not receive shares in the newly merged company. The payment of cash compensation (cash-out merger) has therefore become the main instrument of exclusion of minority shareholders.

Under European laws cash-out mergers are usually not allowed. Although mergers can be used to force a going private, under German law minority shareholders receive shares of the remaining entity. German company law in connection with mergers constitutes two possible interventions in the rights of shareholders as owners. While the *Eingliederung* (inclusion) into

another company implies the loss of shareholder status in the included stock corporation, it regularly leads to ownership of shares in the including entity. In a *Verschmelzung* (fusion) the minority shareholders of the acquired firm receive shareholder status in the merged entity. In both cases, a business valuation appraisal procedure for both the integrated target as well as for the acquiring company has to be performed.

According to Ventoruzzo (2010), the principal way of European firms to go private is a mandatory or voluntary tender offer on all the outstanding shares based on the Article 15 of the EU Takeover Directive. In implementing the Takeover Directive, the National jurisdictions had some choices; for example, the right of the blockholder to buy out minorities can be conditioned upon acquiring at least a stake of 90% or 95% in the capital of the target ("single threshold" option) or to 90% of the voting capital and 90% of the shares comprised in the offer ("majority of the minority" option).

In sum, the squeeze-out procedure in the E.U. countries can be interpreted as a special cash-out procedure under very restrictive conditions related to ownership concentration. After receiving that stake, the squeeze-out procedure can start after a formal decision of the general meeting of all the shareholders.

3. Sample and Data

After the introduction of the squeeze-out rule in 2002, several delistings following a squeeze-out took place in Germany. We obtain the lists of firms that underwent a squeeze-out procedure from the *Schutzgemeischaft der Kapitalanleger* E.V. (henceforth *SdK*), the German Association for the Protection of Investors. *SdK* is an independent association of shareholders

and investors founded in 1959, whose aim is the protection of minority shareholders as well as the promotion and further development of equity culture and investor protection. Starting from these annual lists, we create a complete sample of squeeze-outs of publicly listed companies from 2002 to 2011. The annual lists report the cash compensation offered in the squeeze-out (or squeeze-out offer price) and the date of the general meeting in which the squeeze-out has to be decided. We then merge this list with the dataset of squeeze-outs used by Bruechle et al. (2008), which covers the period 2002-2004. Our final sample comprises 323 squeeze-outs.

We also obtain unique information about appraisal procedures and actions of avoidance from *SdK*. The information we obtain from *SdK* concerns rulings and the additional cash compensation, if any, awarded by the courts to minority investors. These data refer to legal cases concerning squeeze-outs where *SdK* was participating as a plaintiff and terminated before October 2011. Table 1 presents a breakdown of squeeze-outs by year of the general meeting, with the number of appraisal procedures and actions of avoidance initiated in that year.

[Please insert Table 1 about here]

It is clear from Table 1 that many large shareholders took advantage of the new regulation as soon as it was introduced in the German legislation. In fact, 106 firms were delisted following a squeeze-out in 2002, the first year this rule was available. The introduction of the squeeze-out rule greatly simplified the procedure to take a listed company private in Germany. As also observed by Vetter (2002), before 2002, complete delistings from the Stock Exchange were difficult to implement in Germany, because it was not possible to force shareholders to tender their shares. Several squeeze-outs happened in 2003 (52), as well,

indicating that this rule was certainly welcome by controlling shareholders, who used the new rule to delist their companies from the Stock Exchange. The number of squeeze-outs stabilized around 22-26 in the period 2004 to 2007, and dropped to an average of 17 during the period 2008 to 2011, probably because of the financial crises.

Panel A documents other interesting facts concerning squeeze-outs. The percentage of shares held by the owner is on average well above 95% (97.14%), but in the last sample years this percentage is lower (around 96% in 2010-11) than in the first years after the introduction of the squeeze-rule. This trend is consistent with the view that initially squeeze-outs were used by long-time shareholders who owned all but a few shares in the firms to finally delist their companies from the Stock market. In fact, in a few cases, the controlling shareholder launched the squeeze-out holding more than 99.9% of the shares. Starting from 2004, the number of squeeze-outs challenged by minority shareholders is almost equal to the number of squeeze-outs, and even in 2002 and 2003, the percentage of squeeze-outs challenged is remarkably high. This finding is consistent with the DAI report, with an even higher litigiousness in the early period (2002-2003). The panel also shows that minority shareholders are very likely to have their request blocked or even to have an unsuccessful outcome for their challenge, where an unsuccessful challenge is defined as a challenge that do not result in a higher settlement price. Panel A also clarifies that sometimes these challenges take a long time to be settled, as the high number of ongoing procedures even for years 2002 and 2003 show. Finally, the challenges with unknown outcome are relatively few, attesting the quality and comprehensiveness of our data.

Panel B of Table 1 highlights an interesting trend concerning the choice between the two actions minority investors can take to protect themselves. Initially, minority investors

preferred to challenge the cash compensation offered using appraisal procedures, but starting from 2005, they switched to the more formal action of avoidance. Overall, we have 226 appraisal procedures initiated in the period examined and 122 actions of avoidance. From the lower number of ongoing procedure, we can infer that actions of avoidance are quicker than appraisal procedure, but the number of unsuccessful challenges is higher. We also find, in Panel C of Table 1, that quite often both procedures are used by the shareholders—either at the same time or one after another.

In addition to the data provided by *SdK*, we collect information about the firm's ownership structure before the squeeze-out. We use *Hoppenstedt Aktienführer* annual CD-ROMs from 2002 to 2010 to identify the controlling shareholder in each firm. In particular, we verify the nationality (German vs. foreigner) and the type (family vs. non-family) of the ultimate owner. We also obtain from either *Hoppenstedt Aktienführer* or internet searches on the BaFIN website (www.bafin.de)[7] the percentage of shares held by the controlling shareholder at the time the squeeze-out was announced. By law, this percentage must be over 95% of the equity capital of the firm. We rely on *Thomson One Banker*'s M&A Database and internet searches to distinguish between squeeze-outs that followed takeovers and those that did not. We consider a squeeze-out induced by a takeover if it takes place less than three years after the initial takeover offer. Even if the squeeze-out procedure introduced in the Takeover Act in 2006 gives the bidder three months to request the squeeze-out after it exceeds the 95% threshold, we do not stop at the three-month deadline because 1) the more general squeeze-out procedure of the Stock Corporation Act does not have a time limit; 2) it is often reasonable to assume that

[7] BaFIN (Bundesanstalt für Finanzdienstleistungsaufsicht) is the German equivalent of the U.S. Securities & Exchange Commission.

the bidder will attempt to delist the target firm even if its ownership does not exceed 95% after the initial offer;[8] and 3) sometimes bureaucratic and legal obstacles may delay the implementation of the full takeover for long periods. We use *Thomson One Banker*'s *M&A Database*, *Lexis-Nexis*, and internet searches to retrieve the exact date on which the squeeze-out is announced. Stock prices and financial data are retrieved from *Thomson Datastream* and *Worldscope* databases.

Table 2 presents some additional descriptive statistics about our sample. Panel A shows that the amount of money at stake is not trivial at all. The average market capitalization of the target firms one week before the squeeze-out announcement is 1.29 billion Euros (median 250 million). On aggregate, the equity stakes held by minority investors, and thus to be squeezed out, are worth more than 7.7 billion Euros at the stock market price seven days before the announcement. We can interpret this value also as a lower bound for the cost of the squeeze-out. In fact, it is very unlikely that controlling shareholders will offer cash compensation below the current market price. The average minority investors' stake is worth about 35 million Euros and the median value is 4.4 million. The sample includes very large squeeze-outs like Dresdner Bank (controlling shareholder: Allianz), Hoechst (Sanofi-Aventis), Schering (Bayer), and Bayerische Hypo-und Vereinsbank (UniCredito Italiano), where the minority investors' stake was worth well in excess of 500 million Euros. For cases terminated before October 2011, Panel C of Table 2 confirms that the length of the procedures is quite different: appraisal procedures

[8] For example, Firm B acquires 85% of Firm T in year t after launching an offer for 100% of Firm T's equity capital. One year later, it acquires an additional 11%, reaching 96%. Firm B then make a squeeze-out offer to force out the remaining minority shareholders. We consider this squeeze-out related to the initial takeover.

last much longer than actions of avoidance (on average, 43 months versus 9 months; medians: 33.5 months vs. 5.5 months).

[Please insert Table 2 about here]

Concerning the type of ultimate owners, consistent with Faccio and Lang (2002), we find that families control several listed companies in Germany. We find that a family is the ultimate owner in 1017 cases (32%) out of the 318 firms we were able to determine the ultimate owner Financial institutions are the ultimate owner in 94 observations (30%), while widely-held firms, foundations, cooperatives, or employees, were the ultimate owners in the remaining 123 observations. We group these types of ultimate owners under the label "others" in the analysis.

Panel B of Table 2 brings to light another important piece of information: more than half of the squeeze-outs were carried out by firms ultimately owned by foreigners. German ultimate owners account for about 47% of the observations. This phenomenon is partially due to acquisitions by US and UK private equity groups,[9] but it certainly signals that at least in Germany, foreign ultimate owners prefer to delist the company rather than dealing with minority investors outside their home country. This result can also lead to conjecture that the squeeze-out regulation made Germany more attractive to foreign bidders.

Finally, a control change transaction took place in the three years before the squeeze-out announcement only in 39% of the observations in our sample. This implies that, rather being the last step of an M&A transaction, as presumed by Maug (2006) and by the European directive on Takeovers (see the Report on the implementation of the Directive on Takeover Bids written in 2007 by the European Commission), squeeze-outs are often rather the product of a

[9] For example, the acquisition of Celanese AG by Blackstone.

change in the controlling shareholder's strategy, which takes the decision to delist the company and force the minorities out. Non-German controlling shareholders are responsible for 85 of the 123 squeeze-outs following a takeover, confirming the fact that foreigners are more likely than German acquirers to take advantage of the new squeeze-out rule.

4. Empirical Analysis

We begin our empirical analysis examining the market reaction around the squeeze-out announcement. To take into account the lack of liquidity that affects the securities involved in squeeze-outs bids, we use both the standard market model and the Dimson (1979) model with three lags and one lead to compute abnormal returns. Since in the sample there are firms with multiple securities, the so-called dual-class-share (DCS) companies, we include only the main securities of DCS firms with stock prices available on DataStream in the event study analysis.[10] Results of the standard event study analysis are presented in Table 3. We observe a significant increase in the stock price of the firms undergoing a squeeze-out. Over the five-days event window around the announcement, i.e. [-2, +2], the abnormal return using the standard market model is a positive 9.45%, indicating that the squeeze-out announcement is perceived as good news by the market. The limited number of shares that can trade freely of course may affect the result. To mitigate this concern, we replicate the analysis using the Dimson (1979) model and obtain a rather identical abnormal return of 9.61% (Panel B). It is worth noticing that these abnormal returns are higher than those documented by Croci and Petmezas (2010) for German increase-in-ownership acquisitions, i.e. acquisitions made by controlling shareholders to

[10] Nothing changes if we include all the securities affected by the squeeze-out with stock prices available on DataStream in the analysis.

increase their stakes in a company.[11] They find that the average return for 38 German deals is 7.7% in the event window [-2, +2]. This comparison suggests that target firm's CAR is not a monotonic function of the controlling shareholder's toehold.

Table 3 also shows that the squeeze-out announcement is not anticipated by the market. In fact, abnormal returns in the period leading to the announcement, the event window [-30, -3], are negligible in magnitude and statistically not significant. When we expand the event window to the interval [-30, +30], we find that almost the entire market reaction is concentrated in the days immediately before and after the announcement.

[Please insert Table 3 about here]

Table 4 (Panel A) shows the average abnormal returns computed with the standard market model according to the type of ultimate owner. As shown in the table, abnormal returns are higher when the ultimate owner is a family, especially over the long event window [-30, +30]. Panel B shows that minority shareholders gain more when the ultimate owner is German (on average 12.94% vs. 7.68%). However, only the median test is statistically significant over the event window [-30, +30]. However, as we discussed previously, many squeeze-outs initiated by non-German controlling shareholders follow takeover offers that took place in the previous three years. So, the stock price could react less because it has already incorporated the expectation of a squeeze-out. This conjecture is supported by the results in Panel C, showing that abnormal returns are significantly smaller when the squeeze-out follows a takeover offer within 3 years.

[11] In Croci and Petmezas (2009), by sample construction, the stake of the controlling shareholder is always below 90%. So there is no overlap between the two samples.

[Please insert Table 4 about here]

We document in Table 5 the average premium offered by controlling shareholders to buy out minority investors. We compute the squeeze-out offer premium as the difference between the offer price and the stock market price scaled by the stock market price. We measure the premium four weeks and one week before the squeeze-out announcement and at the time of the general meeting (GM) where the squeeze-out has to be voted upon. While four-weeks and one-week premiums mirror abnormal returns as expected, the premium measured at the stock price value of the GM day is negative and statistically different from zero. This negative premium indicates that the stock market price incorporates an expectation of a higher final settlement price.

[Please insert Table 5 about here]

In Table 6, we compute the final settlement premiums that the minority shareholders receive. Final settlement premiums are computed as the difference between the maximum between the squeeze-out offer price and the final settlement price and the firm's stock price and scaled by the firm's stock price. We measure the final settlement premiums at different dates: 4 weeks before the announcement; 1 week before the announcement, and at the GM date. The mean final settlement premium for the full sample is 19.91%. Subsamples are based are on the type of ultimate owner at the time the squeeze-out is announced (family, financial institution, others); subsamples are based on by the nationality of the ultimate owner; and, finally, subsamples are based on whether a control change transaction took place in the 3 years preceding the squeeze-out. The differences between these subsamples are not statistically

significant from each other. The comparison between Tables 5 and 6 clearly show that the challenges bring the settlement price higher, determining a gain for the minority shareholders.

[Please insert Table 6 about here]

To further investigate the profitability of these challenges, In Table 7, we compute the additional cash compensation that the courts award to minority shareholders when they initiate a legal procedure to contest the initial cash compensation. We compute the additional cash compensation as the ratio between the increase in cash compensation awarded by the court, excluding the legal interests, and the initial squeeze-out offer. Table 7 shows that the average additional cash compensation is about 35% of the original offer, certainly not a negligible amount. However, there exist differences between the two procedures: appraisal procedure and action of avoidance. The amount awarded to compensate minority investors is larger when claimants choose an appraisal procedure (47.5%), than when they only try to have the squeeze-out avoided completely (13.5%).[12] The difference is statistically significant.

When we decompose the full sample on the basis of the type of the ultimate owner, we find a similar situation: courts award higher compensations to minority investors in appraisal procedures.[13] We do not find evidence of differences in additional compensations between types of ultimate owners. Judges asked to rule on actions of avoidance do not favor the defendant if the ultimate owner is German. Previous takeovers seem to affect the court rulings. In fact, additional cash compensations in appraisal procedures are larger when the squeeze out

[12] From Table 1, Panel C, we know that only in 1 case AP precedes AA. So, we do not compute the percentage increase over the last offer for action of avoidances.

[13] The difference in mean between the increase of appraisal procedure and action of avoidance is not statistically significant in the case of family firms. Given the large difference, this result is probably due to outliers.

does not follow a takeover. However, we do not find a significant difference in the outcome on actions of avoidance between squeeze outs preceded by takeovers and squeeze outs without takeovers.

[Please insert Table 7 about here]

We further investigate if these additional compensations are worth waiting for considering the time value of money. In fact, challenging the original cash compensation means that bidders delay the payment and minority investors do not receive any cash today. This implies that minority investors bear the opportunity cost of delaying the reception of the cash compensation payment. The law partially mitigates this cost awarding annual interests on the cash compensation offered. To take into account this opportunity cost, we run a simple analysis. We annualize the return of *investing* the cash payment in challenging the initial offer. We then obtain the base interest rate at the end of the month in which the GM votes on the squeeze-out offer.[14] We add this base interest rate plus 2% (5% since September 2009) to the annualized return to obtain the *Total Annualized Return*.[15] This is our measure of the total (percentage) gains obtained by minority investors if they decide to contest t he initial cash payment offered by the bidder. We need a proxy for the opportunity cost of capital. In fact, if the minority investor chooses to challenge the cash offer, she implicitly forgoes other investment opportunities. Thus, we should select the return of an investment with similar risk. It can be argued that challenging the cash compensation is a risk-free investment for the minority investor. In fact, courts can reject the request of increasing the compensation (it

[14] We obtain the time series of base interest rates from the website: http://basiszinssatz.de.

[15] To keep our estimate the most conservative as possible, we do not increase the additional compensatory interest to 5% starting from September 2009. Using a 5% to increase the base interest rate starting from September 2009 does not alter our results and conclusions.

happened a few times), but they never revise downward the original offer. Thus, we believe that the (zero- coupon bond) spot interest rate for German Federal listed securities with a residual maturity of 5 years (calculate based on the *Svensson method*) at the end of the month in which the GM approves the squeeze-out offer is the most suitable measure of the opportunity cost of capital.[16] The time series data of interest rates on Federal listed securities are obtain from the German Bundesbank.[17] We subtract this cost from the total annualized returns to obtain the *Net Annualized Returns*. We report the net annualized returns in Table 8. As Table 8 clearly documents, the current legal regime gives plenty of incentives to minority investors to challenge the cash compensation. These results explain the high number of challenges we show in Table 1 and the findings of the DAI (2007) report, where 96% of squeeze-outs are challenged. In fact, net of opportunity costs, minority investors earn an annualized return of 21.6%, on average. It is also worth mentioning that the base interest rate plus 2% almost entirely covers the opportunity cost of delaying the payment.[18] Challenging cash compensation offered by bidders owned by financial offers very high returns, on average a positive 15.61% net of opportunity costs. The magnitude and economic significance of the annualized returns shown in Table 8 certainly explains why the majority of squeeze-outs are contested. Thus, we can state that, once having received the squeeze out offer, minority investors are always better off challenging the cash compensation.

However, the analysis presented here has a serious limitation. In fact, it includes only the opportunity cost of capital as a cost for the investor. This is of course not true in the real

[16] Results do not change if we use the 1, 3, or 10-year interest rate.
[17] Time series data are available:
http://www.bundesbank.de/statistik/statistik_zeitreihen.php?lang=de&open=zinsen&func=row&tr=WZ9826
[18] Since we have few decisions issued after September 2009, the new increased interest payment of 5% plus the base interest rate does not affect our results.

world, since there are both lawyers and courts to pay.[19] German corporate lawyers are the big winners from a legal system that gives incentives to firms to make artificially low offers from the beginning and thereafter induce investors to challenge these offers in court.

[Please Insert Table 8 about here]

Finally, we present the estimation of multivariate regression models in Table 9. We also report results from a multinomial logit regression to explain the challenges in Table 10. The dependent variables in the six regressions are: the cumulative abnormal returns in the event windows [-2, +2] and [-30, +30], the 4-week premium and the premium over the GM stock price, and the additional cash compensation awarded to minority investors (settlement premium) after a legal procedure, both relative to the stock price 4 weeks before the squeeze out announcement and the GM stock price. In Panel A, we include the following variables in the regressions: a dummy for firms whose ultimate owner is German (German UO); dummies for the type of ultimate owner (family and financial institution); a dummy for a control change transaction took place in the 3 years preceding the squeeze-out; and the log of the euro value of the stake of minority investors one week before the squeeze-out announcement (*money at stake*). In Panel B, we add additional firm characteristics like the firm Q-ratio, leverage, ROA, the growth rate of assets, and cash reserves. *Q-ratio* is defined as the ratio between the market value of equity plus total assets minus the book value of equity and total assets. *Leverage* is defined as the ratio between the firm's total debt over total assets. *ROA*, a measure of the firm's operating performance, is EBITDA over Total Assets. *Growth rate of assets* is the annual

[19] Courts are only to be paid in the case of actions of avoidance. The appraisal procedure is costless for what concerns court costs.

growth rate of total assets. Finally, *Cash reserves* is cash and cash equivalents over total assets. These variables, which are winsorized at the 2.5% and 97.5% to minimize the impact of outliers, are measured at the end of the year before the squeeze-out.

Panel A shows that CARs are negatively related to the value of the minority investors' stake, suggesting that the cost of the squeeze-out affects returns. A takeover in the three years preceding the squeeze-out offer impacts negatively the abnormal returns at announcement, confirming the univariate evidence. Size is also negatively related to CARs, a result that signal that abnormal returns decrease with the cost of the acquisition.[20] No variable is significant in the regression for the four-week premium. The premium offered relative to the stock price at the GM date is positively associated to the size and the percentage of equity held by minority shareholders, suggesting a smaller increase in the stock price of the firm undergoing the squeeze out in the period between the announcement and the GM for larger targets. Takeover is weakly positively associated to this premium. Finally, concerning the additional compensation awarded by the courts (the final settlement premium), we do not find a negative relationship between the cost of the squeeze-out, i.e. the value of the stake owned by minority owners, and the increase in cash compensation. We find, however, as expected, a positive effect for the action of avoidance and the appraisal procedure, with a larger coefficient for the latter.

When we include firm characteristics in Panel B, *Takeover* still negatively affects CARs, but *Size* loses its significance. However, the stake in the hands of minority investors become weakly significant. Among the firm characteristics, Leverage is negative and weakly significant in the event window [-2, +2], while the growth ratio of assets impacts positively the CARs in the

[20] We obtain similar results if instead of Size we include the log of the market capitalization of the firm.

event window [-30, +30]. The regressions for the initial premium confirm the results of Panel A, with size and the percentage held by minority shareholders positive and significant. Finally, the dummies for AA and AP are still significant in the final settlement premium regressions.

[Please insert Table 9 about here]

We examine the determinants of the choice to initiate a challenge. From Table 1 C, we know that there are three different main strategies to challenge a squeeze-out offer: action of avoidance; appraisal procedure; and both action of avoidance and appraisal procedure. To study the determinants of these choices, together with the base outcome of accepting the cash offer without any challenge, we estimate a multinomial logit model. The odds ratios for the variables included in the regressions are reported in Table 10.[21] We find that, after the inclusion of firm characteristics, being of German nationality decreases the likelihood of an appraisal procedure. Family control negatively affects the initiation of an appraisal procedure, but not of an action of avoidance. A larger stake held by minority investors increases the probability of an action of avoidance. Size positively affects the initiation of an appraisal procedure alone and together with an action of avoidance when we do not include firm characteristics. Takeover does not affect the likelihood to start of procedure. Finally among the firm characteristics, a good operating performance (ROA) has a positive effect on appraisal procedure and again on the use of both appraisal procedure and action of avoidance. Another measure of performance (and of overvaluation), the Q ratio, increases the probability of an action of avoidance.

[21] We decide to report odds ratio and not coefficients because odds ratio are easier to interpret: an odds ratio above (below) one indicates that the variable increases (decreases) the probability of a given outcome with respect to the base outcome (no challenge in our case). For example an odds ratio of 1.05 (0.95) indicates that the variable increases (decreases) the probability of that outcome by 5%.

Surprisingly, a higher growth rate of assets decreases the probability that shareholders will recur to an appraisal procedure.

[Please insert Table 10 about here]

5. Which firms are being squeezed-out?

So far, we have analyzed the consequences and the effect of a squeeze-out offer. However, we have not examined the characteristics that make a firm a suitable candidate for a squeeze-out offer. To this end, we collect data the universe of all the German companies listed in Worldscope (2,076 firms). Ownership data for these firms are from Hoppenstedt.

To perform this analysis, we use a hazard rate model to study the determinants of a squeeze-out offer. Hazard rate models are becoming increasingly common in studies that examine the probability of being taken over (Holmen and Nivorozhkin, 2007; Caprio et al., 2011) or the probability of becoming widely held (Helwege et al., 2007). This survival analysis approach is appropriate for our goal because this methodology takes into account the sequential nature of the data and is able to handle censoring and to incorporate time-varying covariates (Holmen and Nivorozhkin, 2007). The hazard function estimates show how the explanatory variables impact the probability of a squeeze-out event in a sample year, conditional on the firm not having already been squeeze-out in the previous year. Following Helwege et al. (2007), we use the Cox proportional hazards model, a semi-parametric approach that estimates the covariates that shift a baseline hazard function up or down.

The explanatory variables used in the models, all lagged with respect to the squeeze-out offer, are the following: Tobin's Q; size; cash reserves; ROA; leverage; the stock price

performance in the calendar year; the growth rate of the firm's assets; the voting rights of the largest and second largest shareholders; dummies for family control, financial institution control, and being German. We also include industry fixed effects in all the regressions. Following Bates et al. (2006), we run several regressions with samples with different restrictions on the voting rights of the largest shareholder: 1) no restriction, i.e. the full sample; 2) the largest shareholders owns more than 25% of the voting rights; 3) the largest shareholders owns more than 50% of the voting rights; 4) the largest shareholders owns more than 75% of the voting rights; 5) the largest shareholders owns more than 90% of the voting rights; and, finally, 6) the largest shareholders owns more than 95% of the voting rights. Our choices are similar to the block sizes identified by Jenkinson and Ljungvist (2001), which are associated with different rights of minorities and the powers of the largest shareholder. A block of 25% or more gives veto powers on corporate charter amendments, supervisory board changes, and profit-transfer and control agreements. In the absence of other large shareholders, a 25% stake can provide substantial influence. A block of 50% or more gives management control of the company, but is subject to limits on the controlling party's discretion due to the existence of a blocking minority with more than 25% of the votes. A block of 75% (super-majority) or more gives the controlling party complete discretion in the supervisory board elections, profit-transfer and control agreements. A block of 90% or more severely restricts the residual rights of minority shareholders. Finally, 95% is the threshold that, once exceeded, allows the controlling shareholder to squeeze out minority investors.

[Please insert Table 11 about here]

Table 11 presents the estimates of a hazard rate model for the event of being squeeze-out over the full sample period 2002-2011 (Panel A) and over the first three years after the introduction of the squeeze-out rule, i.e. 2002-2004 (Panel B). In Panel A, as expected, we find that the voting rights held by the largest shareholders positively affect the likelihood to receive a squeeze out, even when we restrict the sample to firms with shareholders owning more than 25% (Column II); 50% (Column III); and 75% (Column IV). However, in Column V (stakes larger than 90%); the coefficient for the voting rights of the largest shareholders takes a negative sign. This surprisingly result may be due to the fact that some German largest shareholders have owned this very large stakes for a while and they do not want to embark in a costly squeeze-out. The coefficient for the second largest blockholder is positive and significant in Columns I to III, but not when the largest shareholder owns more than 75% of the shares. This positive effect is consistent with the view that it is easier to negotiate the squeeze-out offer with a large blockholder than with dispersed investors. While family control result in a higher propensity to squeeze-out the remaining shareholders only when we include in the sample only observations where the controlling shareholders owns more than 90% of the votes (Column III), financial institutions tend to force minorities out of the company they control more frequently than other large shareholders, once they gain majority control (Columns III to V) the nationality of the controlling shareholder plays an important role. In fact, German ultimate owners are less prone to squeeze-out other shareholders, a result that is in line with the evidence of previous sections and the fact that the majority of squeeze outs in Germany concern firms whose ultimate parent is a foreigner. German controlling shareholders are more willing than foreigners to accept the costs of keeping the company listed.

Size is positively associated with the likelihood of a squeeze out, with the only exception of the regressions with the sample restricted to the firms where the largest shareholder already had more than 95%. This finding is, at first, counterintuitive because it means that the largest companies are more likely to be delisted. However, these companies are also the firms with a more fragmented ownership structure, which implies that the controlling shareholder has to deal with a multitude of small investors. To avoid the risks associated with keeping a company with several investors listed on the stock exchange, the controlling shareholder may opt for the squeeze outs. The coefficients for ROA and leverage are negative and significant. Firms with better stock price performance are more likely to be squeezed out. This rather surprising result, which implies that controlling shareholders are squeezing out the small investors at a high price, can be partially explained with the stock purchases made by the controlling shareholder in order to acquire control of the company or the threshold that allows the squeeze out.

Panel B presents the same regressions but limited to the sample period 2002-2004, i.e. the first three years after the introduction of the squeeze-out rule. As observed in Table 1, the majority of the squeeze outs took place immediately following the introduction of the rule. We, therefore, investigate whether the determinants of 2002-04 squeeze outs are different. Overall, when we compare Panel B with Panel A, we can observe that they are remarkably similar, suggesting that squeeze outs in the period immediately after the introduction of the rule and those in later periods share the same drivers. However, among the very few differences, we can note the more limited role of operating performance (ROA), which is now significant only in Column I, and the lack of significance for the coefficient of the second largest shareholder.

Stock performance has still the positive and significant coefficients in Columns I to IV, but the coefficient is no longer significant in Column V.

Overall, this analysis allows us to identify some of the characteristics that increase the probability of a squeeze-out. Large firms controlled by foreign large shareholders, with reasonable debt levels, bad operating performance, but positive stock price performance are the most likely to be squeezed out.

6. Conclusion

Since its introduction in Germany on January 1, 2002, majority shareholders made extensive use of the squeeze-out rule. In fact, more than 100 firms were delisted following a squeeze-out offer in 2002 alone, and 323 in the period 2002-2011. The squeeze-out rule is particularly important in Germany because it finally allows majority shareholder to delist companies in which they had held more than 95% (or even 99%) of the company's equity for a long time, but given previous regulation, they were not able to force out minority shareholders. To protect minority shareholders, the German legal system relies on two procedures: the appraisal procedure, a request to verify the fairness of the cash compensation offered; and the action of avoidance.

Using unique hand-collected data provided by *SdK*, which also include final rulings and compensations for appraisal procedures and actions of avoidance, we carry out a detailed analysis of the costs and benefits of the procedure. We document an increase in the stock price of the firms undergoing a squeeze-out of 9.45% in the event window [-2, +2], suggesting that the squeeze-out announcement is perceived as good news by the market. We also find that abnormal returns are higher around the squeeze-out announcement when the ultimate owner

is a family and when the majority shareholder is German. If the squeeze-out is not preceded by a takeover offer, minority shareholders earn larger returns.

We find significant differences between appraisal procedures and actions of avoidance in terms of the economic benefits enjoyed by minority shareholders. The amount awarded to minority investors is larger in appraisal procedures (an increase of more than 47% with respect to the initial cash compensation offered) than in actions of avoidance (13.5%). However, while the settlement procedure as such is costless (except for lawyer fees), the downside is that investors have to wait a relatively long time to obtain the compensation when they file for an appraisal procedure.

We also extend our analysis to examine the determinants of the squeeze-out decision. We find that large firms controlled by a large shareholders are the most likely to be delisted. We also note that a positive stock price performance increases the likelihood of a squeeze-out, but operating performance has the opposite effect. German owners are more reluctant than foreigners to use the squeeze-out procedure.

To sum up, we perform an economic cost-benefit analysis of the current squeeze-out procedures in Germany. Using a brand-new hand-collected database of squeeze-outs and relying on unique and often non-public data, we offer new insights on this procedure taking into account both the minority investors' point of view and firms' strategies.

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Table 1 – Squeeze-outs by Year

Panel A reports, by year of the General Meeting in which the squeeze-out was approved, the number of squeeze-outs that took place in Germany from 2002 to Oct. 2010; the percentage of firm's equity owned by the largest shareholder at the time of the squeeze-out; the number of squeeze-outs whose cash compensation was challenged; the number of squeeze-outs where the challenge was unsuccessful; the number of blocked squeeze-outs; the number of squeeze outs with procedure still pending (ongoing) at the end of October 2010; and the number of squeeze-outs with unknown outcome. Panel B shows the number of challenges, the ongoing procedure, the unsuccessful challenges, and the procedures with unknown outcome for Appraisal Procedures (AP) and Actions of Avoidance (AA). Panel C presents the strategies followed by minority investors to challenge the initial cash compensation: only Appraisal Procedures; only action of avoidance; Action of avoidance and appraisal procedure. In Panel C, AA and AP are considered contemporaneous if shareholders start a second procedure before the first one has been decided. Data are from SdK.

Panel A: General Descriptive Statistics by year of GM

Year HV	# Squeeze-outs	% Owned before SO	# of SO Challenged	Unsuccessful Challenges	Blocked SO	Ongoing Procedure	Unknown Outcome
2002	106	97.64	72	5	0	20	8
2003	52	97.77	42	6	1	22	2
2004	26	97.19	25	1	0	12	3
2005	25	97.04	24	4	0	14	1
2006	24	96.97	23	4	0	11	2
2007	22	96.74	18	3	0	13	0
2008	15	95.93	15	2	0	12	0
2009	19	96.68	16	6	0	14	0
2010	17	96.05	12	1	0	10	1
2011	17	96.07	4	0	0	4	0
Total	323	97.14	251	32	1	132	17

Panel B: Appraisal Procedure & Action of Avoidance

	Appraisal Procedure				Action of Avoidance			
Year HV	# SO	Ongoing	Unsuccessful	Unknown Outcome	# SO	Ongoing	Unsuccessful	Unknown Outcome
2002	72	20	5	8	1	0	0	0
2003	39	19	5	2	14	4	3	0
2004	23	11	0	3	19	7	2	0
2005	23	13	1	1	23	3	3	1
2006	17	10	0	2	22	3	3	0
2007	13	11	1	0	16	10	1	0
2008	14	12	0	0	12	9	1	0
2009	12	10	0	0	11	5	6	0
2010	9	7	1	1	4	4	0	0
2011	4	4	0	0	0	0	0	0
Total	226	117	13	17	122	45	19	1

Panel C: Strategies to Challenge a Cash Compensation Using both Procedures

Year GM	Only AA	Only AP	AA and AP	AP and then AA	AA and then AP	AA and AP at the same time
2002	0	71	1	0	1	0
2003	3	28	11	0	7	4
2004	2	6	17	0	8	9
2005	1	1	22	1	15	6
2006	6	1	16	0	14	2
2007	5	2	11	0	5	6
2008	1	3	11	0	2	9
2009	4	5	7	0	4	3
2010	3	8	1	0	0	1
2011	0	4	0	0	0	0
Total	25	129	97	1	56	40

Table 2 – Descriptive Statistics

The table reports descriptive statistics about the sample of 260 squeeze-outs that took place in Germany from 2002 to 2008. Panel A reports the market capitalization, and the value of the minority investors' stake at announcement. We value the market capitalization and minority investors' stakes 4 weeks and one week before the squeeze-out announcement; and on the day of the GM. Panel B reports the number and percentage of firms by the type of ultimate owner (family, financial institution, other). Other is a residual category which includes widely-held firms, foundations, employees, cooperatives, etc. The panel also reports the number of firms and percentage of firms whose ultimate owner is German and the number and percentage of firms whose squeeze-out took place less than 3 years after a takeover offer. Panel C reports information on the length of concluded actions of avoidance and appraisal procedures in months. We measure the length in two ways: 1) from the beginning to the end of the procedure (AA and AP); 2) from the day of the GM to the end of the procedure (AA GM and AP GM). GM Final indicates the time between the General meeting and the final settlement price.

Panel A: Stakes at Announcement

		Mean	Median	Sum	Obs.
Market capitalization	4-week	1287.75	250.00	294893.80	229
	1-week	1302.52	254.98	298277.60	229
	GM	1250.80	218.51	350224.00	280
Euro value of the minority stake at announcement (ml)	4-week	34.77	4.35	7615.60	219
	1-week	35.32	4.42	7735.72	219
	GM	35.88	3.97	9042.25	252

Panel B: Ownership Information

	#		Obs.
Family	101	31.76%	318
Financial	94	29.56%	318
Other	123	38.68%	318
Ultimate Owner is German	150	46.88%	320
Squeeze-outs after Takeover	123	38.56%	319

Panel C: Length of the Procedures

	AA	AA GM	AP	AP GM	GM Final
Mean	8.55	10.88	42.88	46.65	34.62
Median	5.50	8.00	33.50	42.00	28.00
No. Obs.	66	70	60	96	146

Table 3 – Abnormal Returns around Squeeze-out Announcements

The table reports the abnormal returns around the announcement of a squeeze-out for several event windows. Panel A reports the abnormal returns computed using the standard market model, while Panel B reports abnormal returns computed using the Dimson (1979) model with 3 lags and 1 lead. We include in the event study all securities involved in the squeeze-outs. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively.

Event Window	*Mean*	*Median*	*Min*	*Max*	*Std. Dev.*	*#Obs*
			Panel A: Market Model			
[-30, +30]	10.19%***	5.49%***	-70.03%	125.24%	25.58%	234
[-30, -3]	0.91%	-0.42%	-49.62%	118.58%	13.51%	234
[-2, 2]	9.45%***	3.64%***	-16.91%	102.25%	17.48%	234
			Panel B: Dimson (1979) Model			
[-30, +30]	10.77%***	6.60%***	-44.64%	124.11%	25.31%	233
[-30, -3]	1.09%	-0.02%	-50.40%	117.91%	13.46%	233
[-2, 2]	9.61%***	4.18%***	-17.02%	102.25%	17.54%	233

Table 4 – Abnormal Returns around Squeeze-out Announcements by subsample

The table reports the abnormal returns around the announcement of a squeeze-out for several event windows. Abnormal returns are computed using the standard market model. We include in the event study all securities involved in the squeeze-outs. Panel A reports abnormal returns by the type of ultimate owner at the time the squeeze-out is announced (family, financial institution, others). Other is a residual category which includes widely-held firms, foundations, employees, cooperatives, etc. Panel B reports abnormal returns by the nationality of the ultimate owner. Finally, Panel C reports abnormal returns for squeeze-outs took place less than 3 years after a takeover offer and squeeze-outs that did not follow any control change transaction. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively. The symbols [a, b, c] denote statistical significance at the 1, 5, and 10 levels, respectively, between Family and Financial Institution, and the symbols [x, y, z] denote statistical significance at the 1, 5, and 10 levels, respectively, between Family and Other subsamples respectively.

		Panel A: Announcement Returns by UO		
		Family	Financial Institution	Other
[-30, +30]	Mean	18.12%***[a,y]	5.28%**	7.30%***
	Median	10.34%***[c,y]	5.18%**	3.96%**
[-30, -3]	Mean	3.04%	-0.25%	0.00%
	Median	-1.06%	0.13%	-0.09%
[-2, 2]	Mean	13.37%***[b,z]	7.20%***	7.88%***
	Median	5.11%***	3.64%***	2.63%***
# Obs		76	72	86

		Panel B: German vs. Non-German		
		German	Non German	Difference
[-30, +30]	Mean	12.94%***	7.68%***	5.26%
	Median	10.14%***	3.61%***	6.53%**
[-30, -3]	Mean	1.89%	0.01%	1.88%
	Median	0.13%	-1.06%*	1.18%
[-2, 2]	Mean	9.94%***	9.01%***	0.93%
	Median	4.90%***	3.27%***	1.63%
# Obs		112	122	

		Panel C: Announcement Returns by Control Change Transaction		
		YES	NO	Difference
[-30, +30]	Mean	3.56%*	15.06%***	-11.50%***
	Median	2.47%***	10.11%***	-7.64%***
[-30, -3]	Mean	-0.19%	1.72%	-1.90%
	Median	-0.72%	-0.31%	-0.42%
[-2, 2]	Mean	5.01%***	12.71%***	-7.70%***
	Median	2.91%	5.62%	-2.70%
		99	135	

Table 5 – Squeeze-out Premiums

The table reports the squeeze-out premiums. Squeeze-out premiums are computed as the difference between the squeeze-out offer price and firm's stock price and scaled by the firm's stock price. We measure the squeeze-out premiums at different dates: 4 weeks before the announcement; 1 week before the announcement, and at the AGM date. We include in the event study all securities involved in the squeeze-outs. We reports premiums for the full sample, subsamples based on the type of ultimate owner at the time the squeeze-out is announced (family, financial institution, others); subsamples based on by the nationality of the ultimate owner; and, finally, subsamples based on whether a control change transaction took place in the 3 years preceding the squeeze-out. The number of observations is reported in parentheses. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively. The symbols a, b, c denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means and equality of medians between Family and Financial; German vs. no-German; and Takeover vs. no-Takeover. The symbols d, e, f (x, y, z) denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means and equality of medians between Family and Other (Financial and Other).

			4-week	**1-week**	**GM**
Full Sample		Mean	8.85%***	6.97%***	-6.38%**
		Median	0.35%	-0.53%	-5.86%***
		Minimum	-64.69%	-64.69%	-96.57%
		Maximum	344.48%	354.57%	403.14%
			235	235	287
Type UO	Family	Mean	8.57%**	6.11%	-12.74%***,[f]
		Median	0.33%	0.00%	-6.00%***
		Minimum	-64.69%	-64.69%	-90.80%
		Maximum	200.14%	182.13%	4.77%
			75	75	90
	Financial	Mean	7.98%*	4.97%	-6.43%*
		Median	0.54%	-1.04%	-5.75%***
		Minimum	-53.73%	-55.41%	-96.57%
		Maximum	227.54%	227.54%	227.54%
			72	72	80
	Other	Mean	9.81%**	9.35%*	-0.31%
		Median	-0.18%	-0.16%	-5.58%***
		Minimum	-42.29%	-42.33%	-86.65%
		Maximum	344.48%	354.57%	403.14%
			88	88	113
German UO	Yes	Mean	9.24%**	7.51%	-5.99%
		Median	-0.31%	-0.81%	-5.77%***
		Minimum	-53.73%	-55.41%	-96.57%
		Maximum	344.48%	354.57%	403.14%
			113	113	133
	No	Mean	8.49%***	6.47%**	-6.55%**
		Median	0.56%	0.05%	-5.98%***
		Minimum	-64.69%	-64.69%	-86.65%
		Maximum	200.14%	182.13%	361.54%
			122	122	152
Takeover	Yes	Mean	12.27%***	9.25%***	1.44%[b]
		Median	0.79%	0.39%	-4.52%***,[a]
		Minimum	-22.09%	-31.11%	-88.30%
		Maximum	227.54%	227.54%	403.14%
			98	98	113
	NO	Mean	6.40%*	5.34%	-11.46%***
		Median	-0.66%	-1.19%	-6.95%***
		Minimum	-64.69%	-64.69%	-96.57%
		Maximum	344.48%	354.57%	360.45%
			137	137	174

Table 6 – Final Settlement Premiums

The table reports the final settlement premiums. Final settlement premiums are computed as the difference between the maximum between the squeeze-out offer price and the final settlement price and firm's stock price and scaled by the firm's stock price. We measure the final settlement premiums at different dates: 4 weeks before the announcement; 1 week before the announcement, and at the GM date. We include in the event study all securities involved in the squeeze-outs. We reports premiums for the full sample, subsamples based on the type of ultimate owner at the time the squeeze-out is announced (family, financial institution, others); subsamples based on by the nationality of the ultimate owner; and, finally, subsamples based on whether a control change transaction took place in the 3 years preceding the squeeze-out. The number of observations is reported in parentheses. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively. The symbols a, b, c denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means and equality of medians between Family and Financial; German vs. no-German; and Takeover vs. no-Takeover. The symbols d, e, f (x, y, z) denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means and equality of medians between Family and Other (Financial and Other).

			4-week	**1-week**	**GM**
Full Sample		Mean	19.91%***	17.85%***	4.26%
		Median	5.31%***	4.00%***	-3.08%***
		Minimum	-64.69%	-64.69%	-96.57%
		Maximum	413.83%	425.49%	514.20%
			235	235	287
Type UO	Family	Mean	20.32%***	17.70%***	2.62%
		Median	9.55%***	5.56%***	-3.00%***
		Minimum	-64.69%	-64.69%	-90.80%
		Maximum	275.00%	284.62%	514.20%
			75	75	90
	Financial	Mean	18.57%***	15.16%**	2.02%
		Median	2.99%**	1.46%	-3.83%***
		Minimum	-53.73%	-55.41%	-96.57%
		Maximum	408.98%	408.98%	408.98%
			72	72	80
	Other	Mean	20.67%***	20.18%***	8.43%
		Median	5.03%	6.77%**	-2.49%***
		Minimum	-42.29%	-42.29%	-79.52%
		Maximum	413.83%	425.49%	432.28%
			88	88	113
German UO	Yes	Mean	20.65%***	18.79%***	7.99%
		Median	4.55%***	2.90%**	-3.74%***
		Minimum	-53.73%	-55.41%	-96.57%
		Maximum	413.83%	425.49%	514.20%
			113	113	133
	No	Mean	19.23%***	16.98%***	1.31%
		Median	5.63%***	6.77%***	-2.89%***
		Minimum	-64.69%	-64.69%	-79.52%
		Maximum	200.14%	192.31%	361.54%
			122	122	152
Takeover	Yes	Mean	22.65%***	19.21%***	9.38%
		Median	7.63%***	6.28%***	-2.84%***
		Minimum	-22.09%	-31.11%	-88.30%
		Maximum	408.98%	408.98%	408.98%
			98	98	113
	NO	Mean	17.96%***	16.87%***	0.93%
		Median	4.76%***	3.76%**	-3.75%***
		Minimum	-64.69%	-64.69%	-96.57%
		Maximum	413.83%	425.49%	514.20%
			137	137	174

Table 7 – Additional Cash Compensation

The table reports the additional cash compensation awarded to minority shareholders after a legal procedure aimed at contesting the cash compensation offered (Appraisal Procedures and Actions of Avoidance) was initiated. Additional cash compensations (in percentage) are computed as the ratio between the additional cash compensation awarded and the squeeze-out offer price for columns All, AP Cash Comp, and AA. The additional cash compensation is computed as the ratio of the additional cash compensation and the last offered price, which in some cases is the AA settlement price. We include in the event study all securities involved in the squeeze-outs. We reports additional cash compensation for the full sample, subsamples based on the type of ultimate owner at the time the squeeze-out is announced (family, financial institution, others); subsamples based on by the nationality of the ultimate owner; and, finally, subsamples based on whether a control change transaction took place in the 3 years preceding the squeeze-out. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively. The symbols a, b, c denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means and equality of medians between Takeover vs. no-Takeover (other tests between subsamples are not significant). The symbols x, y, z denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means between AP Cash Comp and AA; and between AP last offer and AA.

			All	AP Cash Comp.	AP last offer	AA
Full		Mean	35.04%***	47.52%***,x	42.84%***,x	13.54%***
		Median	15.60%***	22.81%***	19.05%***	7.90%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	725.81%	725.81%	725.81%	84.09%
			145	95	95	74
Type UO	Family	Mean	47.75%**	61.75%**	55.57%*	16.17%***
		Median	19.05%***	24.52%***	18.65%**	9.38%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	725.81%	725.81%	725.81%	44.01%
			37	26	26	20
	Financial	Mean	21.24%***	29.31%***,y	27.33%***,y	11.02%***
		Median	13.33%***	22.81%***	20.29%***	7.67%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	121.15%	121.15%	121.15%	55.39%
			45	23	23	29
	Other	Mean	38.50%***	50.57%***,y	45.14%***,y	14.37%***
		Median	15.60%***	25.26%***	19.02%***	5.74%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	564.96%	564.96%	564.96%	84.09%
			61	44	44	25
German	Yes	Mean	40.12%***	49.78%***,y	47.74%***,y	11.08%***
		Median	15.79%***	19.79%***	19.05%***	6.17%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	725.81%	725.81%	725.81%	55.39%
			63	47	47	28
	No	Mean	31.15%	45.32%***,y	38.04%***,z	15.05%***
		Median	15.41%	27.38%	17.73%	8.65%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	564.96%	564.96%	564.96%	84.09%
			82	48	48	46
Takeover	Yes	Mean	18.30%***,b	25.18%***,b,y	19.15%***,b,y	12.89%***
		Median	11.85%***	19.78%***	15.52%***	7.15%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	104.55%	104.55%	57.66%	84.09%
			55	27	27	38
	NO	Mean	46.13%***	57.88%***,y	53.60%***,y	14.64%***
		Median	19.16%***	25.26%***,y	19.80%***,z	8.73%***
		Minimum	0.00%	0.00%	0.00%	0.00%
		Maximum	725.81%	725.81%	725.81%	49.06%
			88	66	66	35

Table 8 – Cost & benefit Analysis: Net Annual Returns

The table reports the results of a cost & benefit analysis. We reports net annual returns for the full sample, subsamples based on the type of ultimate owner at the time the squeeze-out is announced (family, financial institution, others); subsamples based on by the nationality of the ultimate owner; and, finally, subsamples based on whether a control change transaction took place in the 3 years preceding the squeeze-out. We annualize the return of the additional cash compensation (assuming the reinvestment of the initial cash compensation) and add to this annualized return the *Basiszinssatz* (plus 2) to determine the Total annual return. The *Basiszinssatz* is the interest rate at the end of the month of the AGM where the squeeze-out is voted. We then obtain the net annual return subtracting opportunity cost of capital to the total annual return. The proxy for the opportunity cost of capital is the interest rate on listed German Federal securities with a maturity of 5 years at the end of the month of the general meeting (data from the Bundesbank). The number of observations is reported in parentheses. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively. The symbols a, b, c denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means and equality of medians between Family and Financial; German vs. no-German; and Takeover vs. no-Takeover. The symbols d, e, f (x, y, z) denote statistical significance at the 1, 5, and 10 levels, respectively, for the tests of differences in means and equality of medians between Family and Other (Financial and Other).

			All	Appraisal Procedure	Action of Avoidance
Full Sample		Mean	15.61%***	12.85%***	30.14%***
		Median	7.72%***	6.74%***	10.80%***
		Minimum	-0.51%	-0.19%	-0.51%
		Maximum	147.11%	147.11%	425.28%
			132	81	70
Type UO	Family	Mean	19.08%***	18.06%**	27.73%***
		Median	7.37%***	7.56%***	12.84%***
		Minimum	-0.22%	-0.03%	-0.28%
		Maximum	147.11%	147.11%	140.01%
			33	24	16
	Financial	Mean	17.98%***	11.11%***	21.22%***
		Median	9.98%***	5.95%***	10.47%***
		Minimum	0.18%	1.06%	0.18%
		Maximum	126.58%	42.27%	126.58%
			40	17	29
	Other	Mean	12.39%***	10.87%***	42.03%**
		Median	6.74%***	6.84%***	11.13%***
		Minimum	-0.51%	-0.19%	-0.51%
		Maximum	94.69%	74.03%	425.28%
			57	38	25
German UO	Yes	Mean	14.07%***	13.11%***	32.46%*
		Median	7.60%***	7.22%***	9.50%***
		Minimum	-0.22%	-0.03%	-0.28%
		Maximum	147.11%	147.11%	425.28%
			58	42	26
	No	Mean	16.82%***	12.57%***	28.77%***
		Median	8.20%***	6.21%***	11.26%***
		Minimum	-0.51%	-0.19%	-0.51%
		Maximum	126.58%	74.03%	211.65%
			74	39	44
Takeover	Yes	Mean	15.18%***	8.37%***,c	21.55%***
		Median	6.34%***	5.95%***	9.33%***
		Minimum	-0.51%	0.46%	-0.51%
		Maximum	126.58%	23.61%	126.58%
			50	23	36
	NO	Mean	15.74%***	14.89%***	40.31%***
		Median	8.01%***	7.36%***	16.64%***
		Minimum	-0.22%	-0.03%	-0.28%
		Maximum	147.11%	147.11%	425.28%
			80	57	33

Table 9 – Multivariate Analysis

The table reports the estimates of multivariate OLS regression models where the dependent variables are the cumulative abnormal returns in the event windows [-2, +2] and [-30, +30], the 4-week and the GM premium, the 4-week and GM final settlement premium. The independent variables are: a dummy for firms whose ultimate owner is German (German UO); dummies for the type of ultimate owner (family and financial institution); a dummy for a control change transaction took place in the 3 years preceding the squeeze-out (Takeover); the log of market value of the company 4-week before the SO announcement (Size); the percentage of the firm's equity owned by minority investors (minority shareholders); dummies for AA and AP; the firm's Q-ratio defined as the ratio between the market value of equity plus total assets minus the book value of equity and total assets ; the firm's leverage defined as total debt over total assets; the operating performance (ROA), which is EBITDA over Total Assets; the growth rate of total assets; and the firm's cash reserves, which is cash and cash equivalents over total assets. Size, Q-ratio, leverage, ROA, the growth rate of assets, and cash reserves are winsorized at 2.5 and 97.5. All regressions include time fixed-effects for the year of the General meeting. Robust standard errors are in parentheses. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively.

Panel A

	CAR(-2, 2)	CAR(-30, 30)	4w Premium	GM Premium	4w Final Settlement Premium	GM Final Settlement Premium
Constant	0.2322***	0.3018**	0.0253	-0.2529***	-0.0367	-0.2336**
	[0.0695]	[0.1380]	[0.1299]	[0.0676]	[0.2133]	[0.1151]
German	-0.0235	0.0204	0.0155	0.0356	0.0149	0.0423
	[0.0259]	[0.0380]	[0.0542]	[0.0388]	[0.0798]	[0.0664]
Family	0.0259	0.0699	-0.0005	0.001	0.0182	0.0202
	[0.0301]	[0.0432]	[0.0532]	[0.0203]	[0.0719]	[0.0377]
Financial	0.0109	-0.0035	0.0257	0.0441	0.0131	0.0422
	[0.0262]	[0.0397]	[0.0554]	[0.0341]	[0.0786]	[0.0593]
Takeover	-0.0837***	-0.1160***	0.0747	0.0698**	0.0785	0.0745
	[0.0225]	[0.0365]	[0.0487]	[0.0313]	[0.0702]	[0.0548]
Size	-0.0167**	-0.0266**	-0.0119	0.0133***	-0.0331**	0.0005
	[0.0080]	[0.0118]	[0.0119]	[0.0050]	[0.0157]	[0.0084]
Min. Shareh.	-1.0087	-1.298	0.5801	2.4368**	-0.2577	2.2853
	[0.7420]	[1.0546]	[1.5498]	[0.9749]	[2.4469]	[1.7961]
AA					0.1152**	0.0636**
					[0.0565]	[0.0311]
AP					0.1648**	0.0983**
					[0.0708]	[0.0474]
Adjusted R2	0.058	0.0976	-0.0277	0.0789	0.0187	0.0472
Observations	219	219	219	216	219	216

Panel B

	CAR(-2, 2)	CAR(-30, 30)	4w Premium	GM Premium	4w Final Settlement Premium	GM Final Settlement Premium
Constant	0.3780***	0.5276***	0.3280*	-0.2637***	0.5633***	-0.0939
	[0.0935]	[0.1241]	[0.1808]	[0.0596]	[0.2053]	[0.0575]
German	-0.0575*	-0.0402	-0.0411	-0.0043	-0.1026	-0.0470*
	[0.0323]	[0.0477]	[0.0547]	[0.0147]	[0.0659]	[0.0272]
Family	0.0014	0.0413	-0.0122	0.0239	-0.0318	0.0166
	[0.0356]	[0.0502]	[0.0584]	[0.0174]	[0.0712]	[0.0281]
Financial	0.0146	0.0134	0.0361	0.0231*	-0.0037	0.0018
	[0.0361]	[0.0570]	[0.0786]	[0.0131]	[0.1000]	[0.0284]
Takeover	-0.0839***	-0.1437***	0.0476	0.0199	0.042	0.0061
	[0.0274]	[0.0468]	[0.0602]	[0.0142]	[0.0738]	[0.0230]
Size	-0.0162	-0.0217	-0.0189	0.0143***	-0.0450**	-0.0023
	[0.0101]	[0.0141]	[0.0162]	[0.0043]	[0.0210]	[0.0087]
Min. Shareh.	-2.4949**	-2.9686**	-3.0009	1.0965**	-4.2128*	0.692
	[1.0681]	[1.4229]	[1.9412]	[0.5339]	[2.3200]	[0.8336]
Q ratio	-0.0124	-0.0152	-0.0319*	-0.002	-0.0301	0.002
	[0.0081]	[0.0153]	[0.0170]	[0.0051]	[0.0186]	[0.0082]
Leverage	-0.1174*	0.0854	-0.0699	0.0079	-0.0616	0.017
	[0.0642]	[0.1267]	[0.1429]	[0.0324]	[0.1621]	[0.0624]
ROA	-0.0281	-0.0053	0.2044	0.001	0.3027*	0.0935
	[0.1017]	[0.1337]	[0.1325]	[0.0513]	[0.1714]	[0.0772]
Growth rate Assets	0.0987	0.1037	0.0253	0.0241	0.0478	0.0291
	[0.1266]	[0.1344]	[0.0816]	[0.0246]	[0.0977]	[0.0440]
Cash reserves	-0.0697	-0.166	-0.1149	0.0878*	-0.1136	0.0891
	[0.1014]	[0.1732]	[0.1559]	[0.0498]	[0.1842]	[0.1067]
AA					0.1193*	0.0663*
					[0.0678]	[0.0337]
AP					0.1411**	0.0577*
					[0.0708]	[0.0333]
Adjusted R2	0.0719	0.0645	-0.044	0.1717	0.0517	0.1426
Observations	154	154	154	151	154	151

Table 10 – Determinants of Action of Avoidance and Appraisal Procedures

The table reports the estimates of the odds ratio of multivariate of multinomial logit models where the dependent variable is the type of challenge used by minority investors to contest the original cash compensation. The type of challenge can be: 1) no challenge; 2) AA; 3) AP; 4) AA and AP. No challenge is used as the base outcome. The independent variables are: a dummy for firms whose ultimate owner is German (German UO); dummies for the type of ultimate owner (family and financial institution); a dummy for a control change transaction took place in the 3 years preceding the squeeze-out (Takeover); the log of market value of the company 4-week before the SO announcement (Size); the percentage of the firm's equity owned by minority investors (minority shareholders); dummies for AA and AP; the firm's Q-ratio defined as the ratio between the market value of equity plus total assets minus the book value of equity and total assets ; the firm's leverage defined as total debt over total assets; the operating performance (ROA), which is EBITDA over Total Assets; the growth rate of total assets; and the firm's cash reserves, which is cash and cash equivalents over total assets. Size, Q-ratio, leverage, ROA, the growth rate of assets, and cash reserves are winsorized at 2.5 and 97.5. All regressions include time fixed-effects for the year of the General meeting. Robust standard errors are in parentheses. The constant is included in all models, but its odds ratio not reported. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively.

	I			II		
	AA	AP	AA & AP	AA	AP	AA & AP
German	0.682	1.4993	1.0844	1.1981	3.3205**	1.1377
	[0.3865]	[0.6029]	[0.4361]	[0.8410]	[1.9412]	[0.6242]
Family	1.1659	0.4758*	0.5637	1.076	0.2782**	0.524
	[0.8695]	[0.2141]	[0.2634]	[0.8549]	[0.1656]	[0.2968]
Financial	2.6133	0.9441	1.3291	8.3476**	3.713	3.22
	[2.1102]	[0.4920]	[0.6778]	[8.7075]	[3.2295]	[2.7648]
Takeover	0.554	0.7891	1.1361	0.3986	0.4748	0.6177
	[0.3496]	[0.3243]	[0.4724]	[0.2994]	[0.2616]	[0.3459]
Size	1.3032	1.3484**	1.4301***	1.3935	1.2496	1.2605
	[0.2289]	[0.1786]	[0.1877]	[0.3274]	[0.2287]	[0.2063]
Min. Shareh.	5.77e+15*	0.1916	2.30E+08	3.35e+16*	0	4.34E+08
	[1.11e+17]	[2.2766]	[2.70e+09]	[7.37e+17]	[0.0008]	[7.25e+09]
Q-ratio				1.4016*	1.0238	1.1186
				[0.2555]	[0.1480]	[0.1801]
Leverage				3.638	0.4433	0.85
				[6.7854]	[0.6990]	[1.2829]
ROA				1.0374	40.9570**	38.3633**
				[2.5015]	[70.1408]	[66.2552]
Growth rate Assets				0.8663	0.1181**	0.2197
				[0.8432]	[0.1177]	[0.2164]
Cash Reserves				10.0496	14.3255	0.8757
				[25.2612]	[33.9540]	[2.0644]
Pseudo R2		0.056			0.1192	
No. Obs.		219			154	

Table 11 – Probability to be squeezed out

The table presents the estimates of a hazard rate model for the event of being squeeze-out over the full sample period 2002-2011 (Panel A) and over the first three years after the introduction of the squeeze-out rule, i.e. 2002-2004 (Panel B). The explanatory variables used in the models, all lagged with respect to the squeeze-out offer, are the following: Tobin's Q; size; cash reserves; ROA; leverage; the stock price performance in the calendar year; the growth rate of the firm's assets; the voting rights of the largest and second largest shareholders; dummies for family control, financial institution control, and being German. We run several regressions with samples with different restrictions on the voting rights of the largest shareholder: Column 1) no restriction, i.e. the full sample; Column 2) the largest shareholders owns more than 25% of the voting rights; Column 3) the largest shareholders owns more than 50% of the voting rights; Column 4) the largest shareholders owns more than 75% of the voting rights; Column 5) the largest shareholders owns more than 90% of the voting rights; and, finally, Column 6) the largest shareholders owns more than 95% of the voting rights. We also include industry fixed effects in all the regressions. The symbols ***, **, * denote statistical significance at the 1, 5, and 10 levels, respectively.

Panel A: Full Sample

	I	II	III	IV	V	VI
Tobin's Q	0.0067	0.0007	-0.0459	-0.0167	-0.0594	-0.197
	[0.0229]	[0.0174]	[0.0555]	[0.0468]	[0.0901]	[0.1419]
Log (Size)	0.2061***	0.2137***	0.2100***	0.1718**	0.1547**	0.1389
	[0.0428]	[0.0454]	[0.0526]	[0.0678]	[0.0770]	[0.1027]
Cash Reserves	-0.6237	-0.4651	-0.4704	-0.3456	-2.0364**	-3.5618*
	[0.6739]	[0.6679]	[0.7247]	[0.7823]	[0.9922]	[1.8264]
ROA	-0.0096***	-0.1507	-0.6216***	-0.5692***	-0.4989***	-0.7261***
	[0.0014]	[0.1034]	[0.1015]	[0.1219]	[0.1602]	[0.2758]
Leverage	-1.5739***	-1.5842***	-1.7154***	-1.5114**	-1.1933*	-1.2438
	[0.5126]	[0.5102]	[0.5935]	[0.6470]	[0.6924]	[0.8508]
Stock Performance	0.2635***	0.2770***	0.3242***	0.2801***	0.2631**	0.3044
	[0.0651]	[0.0746]	[0.0798]	[0.0864]	[0.1103]	[0.2018]
Growth Assets	-0.0882	-0.0509	-0.0027	0.0036	-0.6284	-0.5685
	[0.1849]	[0.1229]	[0.0424]	[0.0569]	[0.6365]	[1.2137]
VR 1st Shar.	4.3118***	4.1753***	4.8596***	4.6645***	-7.8751**	-9.5184
	[0.4716]	[0.5950]	[0.8331]	[1.5135]	[3.6023]	[10.6288]
VR 2nd Shar	2.2023**	2.2034**	2.3799*	2.2399		
	[1.0556]	[1.1105]	[1.4171]	[2.8867]		
Family	-0.0711	-0.08	0.0785	0.1162	0.5968**	0.6082
	[0.1914]	[0.1977]	[0.2092]	[0.2270]	[0.2621]	[0.3861]
Financial	0.3283	0.2721	0.4997**	0.2494	0.6700**	0.7770**
	[0.2049]	[0.2095]	[0.2107]	[0.2260]	[0.2726]	[0.3770]
German	-0.7044***	-0.7434***	-0.8446***	-0.8200***	-0.6846***	-0.9429***
	[0.1720]	[0.1750]	[0.1844]	[0.1915]	[0.2327]	[0.3650]
Pseudo R-squared	0.157	0.1324	0.1245	0.0841	0.0797	0.1067
Observations	7175	5089	3023	1370	594	390

Panel B: Sample 2002-2004

	I	II	III	IV	V	VI
Tobin's Q	0.0155	0.0333	-0.1335	-0.0983	-0.1639	-0.2579
	[0.0555]	[0.1172]	[0.1107]	[0.1104]	[0.1107]	[0.1695]
Log (Size)	0.2237***	0.2339***	0.2381***	0.1098	0.1163	0.1718
	[0.0520]	[0.0571]	[0.0680]	[0.0818]	[0.0859]	[0.1208]
Cash Reserves	-1.1684	-0.9757	-0.463	-1.6916	-1.9891	-1.5294
	[1.0867]	[1.0536]	[1.1069]	[1.3627]	[1.3887]	[1.7919]
ROA	-0.0075***	-0.5696	-0.5565	-0.6228	-0.6564	-1.2698
	[0.0013]	[0.3492]	[0.3867]	[0.4527]	[0.5034]	[0.8934]
Leverage	-2.1110***	-2.1621***	-1.9036**	-2.2481***	-1.3535	-1.5037
	[0.7224]	[0.7590]	[0.7733]	[0.8709]	[0.8868]	[1.0831]
Stock Performance	0.1860**	0.1975*	0.2501**	0.2651**	0.2626	0.1793
	[0.0946]	[0.1024]	[0.1077]	[0.1167]	[0.2361]	[0.4961]
Growth Assets	-0.553	-0.4245	-0.2925	-0.1397	-0.2394	0.0675
	[0.4595]	[0.4476]	[0.4600]	[0.3894]	[0.7062]	[0.7339]
VR 1st Shar.	3.7138***	4.1468***	5.1095***	6.1293***	-5.8764	0.0108
	[0.6748]	[0.8086]	[1.0668]	[2.3317]	[4.0352]	[13.8116]
VR 2nd Shar	1.117	1.9403	0.6552	2.8041		
	[1.5250]	[1.4727]	[1.8807]	[4.8393]		
Family	0.0353	0.1402	0.2475	0.3351	0.5692*	0.5468
	[0.2638]	[0.2752]	[0.2827]	[0.2974]	[0.3301]	[0.4766]
Financial	0.4627	0.4223	0.6897**	0.5335	0.6963*	0.4292
	[0.2858]	[0.3036]	[0.3089]	[0.3374]	[0.3762]	[0.5360]
German	-0.5608**	-0.5895**	-0.8347***	-0.6876***	-0.7207**	-0.6401
	[0.2428]	[0.2557]	[0.2708]	[0.2552]	[0.2856]	[0.4979]
Pseudo R-squared	0.1591	0.1433	0.1301	0.0818	0.0711	0.0956
Observations	2198	1669	1011	477	267	189