Unifications of Dual Class Shares in Germany

Empirical evidence on the effects of related changes in ownership structure, market value, and bid-ask spreads on the cost of capital

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Abstract:

This paper examines the unification of non-voting preference shares into a one share-one vote structure using a sample of all German dual-class companies from 1987 until 2003. We test several hypotheses with regard to the reasons for the abolition of preference shares. First, as the separation of ownership and control is viewed as a means of keeping control over a firm, a detailed analysis of changes in the ownership structure of firms abolishing their preference shares is performed. Indeed, family firms losing the majority of control by unifying their share classes seem to restrain from this step by selling controlling blocks before the unification. Second, dual class firms may comprise higher agency costs due to the violation of the one-share-one-vote rule and thus face higher costs of equity capital. The unification could then be seen as a means to reduce the cost of equity. Therefore, we apply two methods for estimating changes in the cost of capital of unifying firms: (i) we perform an event study analysis to examine the market reaction to the announcement of share class unifications and (ii) we investigate bid-ask spreads before and after the unification computed from intraday trading data to analyze liquidity effects on the cost of capital associated with the unification. In sum, the unification of dual-class preference shares into single-class voting shares seems to be strictly shareholder-value increasing. Dual-class firms seem to be able to significantly reduce their cost of capital through unification, because of increases in firm value as well as a substantial reduction in bid-ask spreads.

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1 Introduction

When majority shareholders aim to maintain a concentrated ownership structure without the burden of keeping all the equity, they separate cash flow rights from voting rights by issuing dual-class shares (DCS). This decision to deviate from the one-share-one-vote principle can best be explained by the expropriation of private benefits of control by the majority shareholder to the detriment of the minority shareholders. Because of this expropriation risk, non-voting preference shares usually trade at a discount against ordinary shares with voting rights when both share classes are traded.

Given the potential disadvantages of higher cost of capital and a value gap due to a complicated DCS structure, firms all around the world have recently begun to abandon preference shares and convert them into single class again. A large number of such unifications happened already in Germany during recent years. These dual class share unifications are an important and interesting event for the capital markets. From the analysis of these events we can learn about the cost of dual class shares structures and if conversion or unification is beneficial to shareholders. This paper investigates German companies who decide to convert preference shares into ordinary shares by analyzing whether there is evidence that value is created, and if the return performance of companies with preference shares is worse than those without.

In order to do this, we first acquire data on the conditions of all former German unifications over the long-term horizon 1987-2003. Second, we then investigate price gaps and returns from the announcement to the conversion date and classify firms by their treatment of minority shareholders. Third, since the conversion of preference shares into ordinary shares changes the concentration and distribution of voting rights, we analyze the influence of the announcements and their effects in terms of potential coalitions of minority shareholders on the firm's future decisions. Finally, we also analyze the liquidity effects of the conversion by looking at transaction quote data before and after the transaction.

The main goal of our empirical analysis is to derive statistical evidence on the market price reaction due to the information content of the announcement of a conversion of preference shares into ordinary shares. From this evidence we may also be able to

make predictions about the behaviour of potential converting firms in the future. Therefore, we extend our empirical research to price reactions of non-converting dual-class firms ('control group') on announcements of share unification firms. The amplitude of this price reaction can be used to apply a business strategy to ranking potential candidates for unifications.

The rest of the paper proceeds as follows: Section 2 reviews the relevant literature concerning the effects associated with the announcement of share class unifications in general. Section 3 describes our data sample selection of dual-class firms and the legal environment in Germany. Section 4 looks at the drivers for unification by analyzing changes in the ownership structure around the event and performing random-effects probit and logit regressions on the decision to convert. Section 5 describes the applied empirical methodology, the main empirical results, and several robustness checks, both for the event study as well as the liquidity analysis of bid-ask spreads. Section 6 presents the stock price effects for the control group, i.e., possible unification candidates. The final Section concludes.

2 Literature Review

The creation of a dual class of (mostly) non-voting or inferior voting shares - mainly as anti-takeover provision - has been widely examined in theoretical models.[1] Empirically, the capital market reactions to the establishment of DCS structures have been studied for various countries.[2] Denis and Denis (1994) find that firms with majority ownership and higher family involvement tend to have DCS. Taylor and Whittred (1998) show that Australian DCS IPO firms are controlled by their founding family.

With respect to the consequences, Zingales (1994) was the first to proxy the correct size of the value gap through the control premium that voting shares have over non-voting shares.[3] Modigliani and Perotti (2000) find that voting premiums are higher in countries with poor shareholder protection. Doidge (2003) shows that voting rights premia decrease when non-U.S. firms cross-list their shares in the US. The study by Nenova (2003) in the spirit of La Porta et al. (1999) shows that the control or voting rights premium differs significantly across countries and legal environments. Germany, although a civil law country with low investor protection, is characterized by control values of intermediate magnitude of 10 to 15 percent.[4] On the other hand, Fatemi and Krahnen (2000) find that the voting premium in Germany from 1990-93 was in excess of 40 percent and affected by liquidity as well as by the identity of the largest shareholder.

In comparison, only a relatively small number of articles cover the abolition of dual class structures into a one-share-one-vote structure. For a sample of 152 dual class firms in the UK, Ang and Megginson (1989) identify 49 companies that voluntarily retire the separate class of restricted shares by extending full voting rights to the holders of those shares in the 1955-1982 period. In 45 of these 49 cases, superior voting

[1] See e.g. Grossman and Hart (1988), Harris and Raviv (1988), Burkart et al. (1998).
[2] See e.g. Partch (1987), Jarrell and Poulsen (1988), Cornett and Vetsuypens (1989), Hanson and Song (1995) for the United States, Ang and Megginson (1989) for the United Kingdom, Liljeblom and Rydqvist (1992) for Sweden.
[3] Kunz and Angel (1996) analyze voting rights premiums in Switzerland, Rydqvist (1996) in Sweden, and Nicodano (1998) in Italy.
[4] However, Nenova's study covers only the year 1997, in which the voting rights premium in Germany has been extraordinarily low. In fact, the voting rights premium is highly volatile, ranging from 36 percent in December 1992 to 11 percent in June 1997 (the Nenova period), and it has fallen dramatically in the second half of the 90ies in Germany. Hoffmann-Burchardi (1999) attributes this decrease to the introduction of the Takeover Code in July 1995.

shareholders received an special stock dividend as an explicit compensation for their surrender of special voting privileges averaging 12,28% of the voting share stock price.

Amoako-Adu and Smith (2001) examine 56 firms on the Toronto Stock Exchange that unified their dual-class shares in the 1979-1998 period mostly to meet the terms of a debt restructuring agreement, to facilitate the sale of a control block, and to increase institutional appeal for their stocks prior to a seasoned offering. They find evidence of post-IPO conflicts between controlling and outside shareholders, which they attribute to attempts of the incumbents to expropriate private benefits.

Hauser and Lauterbach (2004), using a sample of 84 stock unifications during 1990 and 2000 in Israel, estimate the value of the voting rights from compensation paid on high voting shares for abolishing some of the votes. Due to a new regulation, dual class companies were forced to unify their share classes in order to raise new equity effectively. 55% of the companies compensated their superior vote shareholders, 45% did not. Such compensations were used to infer the value of the voting right. The median price of one percent of the vote is some 0.09 percent of the value of equity. Additionally, family firms sell their voting shares at higher prices. In an event study they find that the announcement of share class unifications is accompanied by positive abnormal returns.

Pajuste (2004) analyzes a data set comprising 108 unifications covering seven European countries for the period 1996 to 2002. She finds that the probability of a stock unification is positively related with new equity issues, the number of subsequent acquisitions, and growth opportunities, and that it is negatively related with a high voting premium. Pajuste interprets these results that share class unifications are a means of raising the company's share price and are good for the shareholders.

A sample of 43 Italian stock unifications made in the 1974-2003 period is analyzed by Bigelli (2004). Contrary to many other countries the price differential between the two classes of shares is high but no form of compensation for voting shareholders is provided in stock unifications in Italy. Bigelli argues that a stock unification can be a form of expropriation of minority (voting) shareholders. He analyzes five unifications case-by-case and detects majority shareholders taking advantage of the unification by buying non-voting shares before the unification, selling voting shares or approving stock option plans on non-voting shares. The author confirms this hypothesis

by five case studies where he finds that the price of a voting share dropped by some -4% to more than -10%. These unifications expropriated the minority voting shareholders to the benefit of the controlling shareholder and "lucky" minority non-voting shareholders.

Our findings complement and expand this strain of the literature, for the first time looking at announcement effects of voluntary unifications of dual-class firms in Germany.[5] This is also the very first study to look at the liquidity effects of share class unifications by analyzing transaction quote data.[6]

[5] There is a concurrent paper by Dittmann and Ulbricht (2004) who independently look at announcement effects of unifications in Germany. However, their sample comprises only 29 firms for the period of 1990 to 2001. They also have no transaction quote data preventing them to find any meaningful evidence about liquidity effects. Besides the limited scope of their study, their results are totally supportive of our findings: CARs in a five day period around the announcement are +9.9% for non-voting preference shares and +3.9% for ordinary shares.

[6] The only analysis that is rarely comparable in this respect is a study by Amihud et al. (2003) looking at the liquidity effects of trading consolidation of warrants, which has, however, nothing to do with dual-class shares.

3 Overview on Sample Firms and Legal Issues

3.1 Data Sample

Our study is based on all German companies with a dual class share structure listed on the German stock exchange in the time period from January 1, 1987, until December 31, 2003. The sample is based on comprehensive research covering various year-end issues of the *Boersen-Zeitung* and all issues of the *Hoppenstedt Aktienführer* from 1986 to 2004.

Figure 1 provides a breakdown of firms with (i) both common and preference shares, and (ii) only preferred shares outstanding. The significant reduction of dual class companies from 1995 to 2003 fits with a general time trend towards unifications, as the majority took place after 1995.[7] As further shown in Table 1, our initial sample comprises 162 dual class companies of which 58 firms converted their non-voting preference shares into voting shares during the period under examination. The initial sample is reduced by companies with multiple voting rights, shares with restricted transferability ("Vinkulierung") and firms with missing data. Finally, the data sample comprises 43 companies that abolished all or parts of their preference share capital (i.e. event group) and 96 firms in a control group of firms that had non-voting preference shares outstanding at some time during the period under examination. In addition, Panel B shows that the vast majority of the event group firms had both voting and non-voting shares outstanding before the unification, whereas the control group includes some 40% with non-voting preference shares outstanding only. Seven Companies abolished only parts of their non-voting share capital, e.g. 10% in the case of Henkel KGaA, or launched a non-mandatory offer to their preference shareholders, e.g. MAN AG or Metro AG.

Figure 2 surveys the development of share class unifications in the data sample over time and lists the companies under examination. Until the mid 1990's only a very few companies abolished their non-voting share class. There were no unifications in 1987, 1988, 1990, 1991, 1994 and 2003.

As we perform various analyses (event study, liquidity and ownership examinations) the sample described above represents the overall data basis. The actual sample size varies depending on the research question as the sample had to meet several

[7] See Figure 2.

criteria for each examination. Sample sizes differ between the group including common shares and the other group of preference shares as seven companies in the event group had preference shares outstanding only.

Share price data, transaction quote data and data covering capital actions such as splits, dividend payments, etc. were taken from the *Karlsruher Kapitalmarktdatenbank* (KKMDB). Deutsche Börse AG provided some further transaction quote data. In order to capture only stock prices for days where at least one trade took place, only daily stock price data associated with a trading volume was used irrespective of the "Kurszusatz". Subsequently, daily stock price data was cleaned by corporate actions such as splits, capital increases and reductions as well as ordinary and extraordinary dividend payments. Daily stock price movements[8] exceeding ± 20% were identified from the entire stock price database and verified respectively corrected by other sources.[9] Ownership data was comprised from several issues of the *Hoppenstedt Aktienführer* which presents ownership data of ordinary and preference shares as of September 30th of each year. Shareholders holding less than 5% of any share class were ignored and classified as freefloat. As in most cases no detailed ownership data right before and after the unification was available, ownership data per Sept. 30 of the year preceding the unification respectively of the unification year is used depending on when the unification exactly took place. Whenever possible, press research was used to verify the computed dilution of voting equity ownership. The sample is reduced from 43 to 41 companies as for two firms no ownership data subsequent to the unification was available.[10]

3.2 Legal background and jurisdiction

There are no mandatory legal conditions as how to convert preferred shares into ordinary shares in Germany. AktG §141 only describes the annulment and the restriction of the preference right. The jurisdiction in the case of the conversion of preference shares of German retailer Metro AG can be seen as an instructive example: preference shares

[8] Instead of monthly or weekly returns daily stock returns are used for calculating abnormal returns in order to directly analyze informational effects with regard to the event.
[9] E.g. Bloomberg stock prices, *Börsenzeitung*, *Hoppenstedt Aktienführer* and online information systems such as www.onvista.de.
[10] Leffers AG merged with Sinn AG, Südmilch AG filed for reorganization.

traded with a 45% discount in comparison to Metro‘s ordinary shares. Metro decided to convert its preference shares due to their limited liquidity.

In Germany, a general shareholder meeting has to agree to the conversion which will subsequently be offered to the preference shareholders. The preference and extra-dividend right, regulated by the statute, will be abolished in case of the conversion. The company‘s statute has to be changed. Preference shareholders have to agree with an extraordinary decision. The following problem concerning the extent of a conversion premium arises: Preference shareholders will receive ordinary shares with a discount to their current market price. After the proclamation, preference shareholders can accept the offer within a specific period of time (e.g., three weeks) to convert their preference shares by signing a conversion declaration and by paying the conversion premium. However, a conflict of interest remains: Preference shareholders are not interested in paying a conversion fee, while holders of ordinary shares fear a dilution effect and are consequently interested in receiving the complete price difference as a premium. Thus, any discount to the price difference can be interpreted as a premium for the preference shareholders and as a necessary incentive for the conversion. Concerning the level of the conversion premium one has to assume that it is justified with regard to the “current and actual condition due to a due diligence“.

In the case of the Metro AG a successful compromise was found between the preference shareholders‘s objective not to pay a conversion fee and the ordinary shareholders‘ interest in a conversion premium as high as possible. Finally, 88% of the preference shareholders accepted the offer. Holders of ordinary shares principally have to anticipate a dilution effect due to the revivification of the voting right. Since, the conversion and the entire abolishment of preference shares is in the interest of the company and all its shareholders, the county court and appellate court of Cologne did not see a illegitimate preferential treatment of preference shareholders with a conversion fee of some 1/3 of the price difference during the last three months before the official announcement. The premium would not seem to be unsuitable when considering the specific positions of interests. In addition, the conversion would not violate the axiom of neutrality of treatment as it is only valid within one type of shares.

Usually, in case of a share class unification each non-voting share is converted into one voting share without any additional payment or any other form of compensation by non-voting shareholders to the old voting shareholders. Table 2 summarizes the terms of conversion. As can be seen, 24 out of 43 employed this standard rule. For a significant number of fourteen firms, mostly referring to unifications in the 1980's and early 1990's, details were not obtainable by press research anymore. Only in three cases, i.e. RWE AG, Metro AG and MAN AG, non-voting shareholders had to pay a conversion fee. In seven cases outstanding minimum dividends were not paid, thus the unification can be interpreted as a coercive action.

4 Which firms convert their preference shares?

4.1 Ownership Structure

This paragraph presents a detailed analysis of changes in the ownership structure of firms abolishing their preference shares. The separation of ownership and control (Berle and Means, 1932) is widely viewed as a means of keeping control over a firm. A dual class share structure is the most effective way of keeping control through separation of cash flow and voting rights – besides pyramidal structures and cross-ownership.[11] Thus, the elimination of such a deviation from one-share-one-vote can be interpreted as a signal to the capital market that the incumbent owner wishes to improve the corporate governance structure. If this hypothesis holds true, a significant number of related ownership transfers should be observed. Alternatively, unification candidates may face a situation in which further growth opportunities are obstructed by limitations of additional finance. Due to major changes and improvements in German capital markets and corporate governance a share class unification could be seen as a necessity to facilitate further growth e.g. by a subsequent seasoned capital increase.[12]

According to Bebchuck (1999), the choice between concentrated and dispersed ownership of corporate shares and votes is determined by the size of private control benefits.[13] When private benefits are low, the initial owner chooses a dispersed ownership structure and sells out ordinary shares at the IPO. In countries –such as Germany– in which private benefits of control are large, the initial owner maintains a lock on control through the separation of cash flow rights and voting rights. Such a separation will be most likely used in conjunction with a controlling shareholder, e.g. majority family ownership, but not with a dispersed ownership structure. Ehrhardt and Nowak (2003) indeed show that a deviation from the rule of one vote-one share is most likely for the

[11] See e.g. Bebchuck et al. (2000).
[12] See e.g. Nowak (2001) for a detailed overview on recent developments in German corporate governance issues.
[13] Bebchuck and Zingales (2000) show that private and social optimality might diverge when a value-maximizing entrepreneur makes the choice of ownership structure at the IPO stage. This divergence might result from the external effect that the choice has on future buyers of control, because the ownership structure influences both the conditions under which control transfer might occur and the surplus that control buyers will capture. In their model the surplus from private benefits increases with the fraction of the cash flow rights sold to small shareholders.

purpose of maintaining founding family control, especially if the family receives significant private benefits.[14] In other words: 'When private benefits of control are significant and voting rights can be isolated from cash flow rights it may be best for the seller to deviate from one vote per share, but not otherwise.'[15]

Table 3 presents ownership data for the entire sample in the year before the unification.[16] The largest shareholder on average owns 55.68% (median 53.00%) of the voting equity, thus the largest shareholder is typically a controlling owner. Families and individuals (e.g. the firm's founders) hold 64.40% and 56.62% on average, whereas institutional shareholders with lower incentives to extract private benefits (such as banks and insurance companies) hold on average less than 50%. A second largest owner is present in only 21 out of 41 firms and holds on average 16.29%. Interestingly, only six out of 41 companies can be considered as family-owned before the share class unification. Instead, a majority of firms abolishing preference shares is originally owned by individuals (13), domestic non-bank firms (8), or foreign entities (5).

Panel B of Table 3 displays that a majority of largest shareholders hold more than 50%, in ten cases even more than 75% of the voting equity. The highest ownership concentrations can be found in firms controlled by families or individuals. To summarize, firms in the sample are on average closely held before the share class unification. There are only five firms in which the largest owner did not achieve a blocking minority of at least 25% of the voting equity.

Table 4 presents ownership data for the year following the unification. Panel A shows that the largest shareholder's average holding is reduced to less than 50% (mean 44.60%, median 39.67%) after the unification. Even firms controlled by families and individuals have reduced the largest voting equity holdings to less than 50% on average giving a first indication that the change of control hypothesis could be true. The only group with still a significant majority ownership is presented by firms controlled by foreign investors. The analysis of ownership fractions in Panel B reveals that six companies changed their ownership structure from a majority-controlled one to a minority-controlled one.

[14] See also DeAngelo and DeAngelo (1985) or Grossman and Hart (1988).
[15] See Mello and Parsons (1998), p. 102.
[16] The exhibit is guided by Edwards and Nibler (2000) and Franks and Mayer (2001).

Table 5 repeats the ownership concentration analysis for the largest owner and puts the previous results in a broader picture by extending the analysis to ten years before and five years after the unification. A significant proportion of the firms are controlled by a majority shareholder before the share class unification. Mean holdings are constantly over 50% of the voting equity with some ten out of 41 firms controlled by an owner holding more than 75% or even 100% of the voting equity. Mean and median holdings in the years 1, 2 and 3 after the unification are below 50%, but analysis of ownership fractions reveals that almost half of the sample firms are still owned by a majority owner.

Since 17 out of 41 unifications took place after the year 1999, the sample for the analysis up to five years after the event is significantly reduced. The largest owner holds on average 56.02% with a median of 60.10% (maybe due to subsequent acquisitions).

As family firms are often associated with high private benefits of control, the six cases of family firms abolishing preference shares should be examined case-by-case to shed more light on the change-of-control hypothesis. Henkel AG, Krones AG and Sixt AG are still owned by their families with fractions of 90%, 70% and 67%, respectively, after the unification. Only in the case of Koenig & Bauer AG, the family ownership stake was reduced from 53% before to 20.5% after the unification. Herlitz AG and FAG Kugelfischer AG already had minority family owners before the unification. In sum, family firms view share class unifications with some aversion against giving up the majority.

4.2 Ex-ante Determinants of Share Class Unifications

We are now going to further identify factors that can explain which type of companies abolish their preference shares, i.e., the firm characteristics that increase the likelihood of a unification. The data sample and the empirical approach used for this analysis is borrowed from Pajuste (2004) and contains 41 share class unifications in Germany between 1996 and 2002.[17] Two econometric models are employed: (i) a random-effects logistic regression; and (ii) a random-effects probit regression.[18] Contrary to Pajuste (2004), we use panel data instead of pooled regressions, because we do not observe any statistical problems with standard errors in random-effects models when using only the German sub-sample.[19] Table 6 lists the variables included in these regressions.

Table 7 presents the regressions results. Three variables are slightly significant for increasing the likelihood of a unification: (i) An increase in 'Equity issue proceeds / Equity', which measures the total proceeds of new equity issues scaled by book value of equity in the previous year, raises the probability of a unification. The coefficient is positive and significant at the 10% level. The intuition could be that firms try to raise the share value by unifying share classes before an SEO. In line with this finding, Ehrhardt and Nowak (2001) show that firms issuing dual-class shares at the IPO are less likely to return to equity markets for a seasoned offering. (ii) 'Size' has a negative effect on the probability of unification. The coefficient is negative and significant at the 5% level. Thus, the larger a dual class company, the lower the probability of unification. (iii) 'Control minus Ownership' is employed as a proxy for private benefits and significantly decreasing the likelihood of unification. The higher the separation of ownership and control, i.e. the higher potential private benefits are, the less likely a unification, which is in line with the existing literature.[20] This is confirmed by the insignificant variable 'Financial investor dummy', as financial investors have lower incentives to extract private benefits. Not surprisingly, the variable is highly insignificant as financial

[17] Differences in sample sizes of 41 unifications in Pajuste (2004) and 35 unifications in the one used throughout this paper might arise because of less restrictive requirements in Pajuste (2004), data availability in *Hoppenstedt Aktienführer* as well as share price data availability from different databases.
[18] Utilization of probit models is described e.g. in Pagano et al. (1998).
[19] See robustness checks at the end of Chapter 4.2.
[20] See e.g. Claessens et al. (2002).

investors, e.g. banks or insurance companies, are seldomly the largest shareholders in voting equity.[21] A cross-listing in the US through an ADR can be interpreted as a sign of improved corporate governance. Thus, the cross-listing should reduce potential private benefit extraction.[22] The coefficient of 'US cross-listing dummy' is positive but insignificant at least not violating the hypothesis. Acquisitions can be made by own shares. Raising the share price through unification can be interpreted as a positive sign concerning future growth expectations. Although the variable does not distinguish between cash and stock acquisitions, the positive coefficient indicates that a higher acquisition activity raises the probability of unification. The variable 'herding effects' takes into account the number of unification that took place in the data sample before a specific company converted its preference capital. The hypothesis is that as a larger number of dual class firms abolish their preference shares the higher the probability of unification should be. Due to improved corporate governance standards in Germany the pressure for any dual class company to unify its share classes should increase. In line with this the coefficient is positive but insignificant. In addition, the herding effect is adopted for the analysis of the market's reaction in the control group in Chapter 6.

Summarizing, the German data set analyzed in this Chapter and borrowed from Pajuste (2004) does not provide any striking deviations from her sample covering seven European countries. The signs of all coefficients are as expected, supporting her evidence for the single case of Germany. As random-effects regressions use Gauss-Hermite quadrature some caution should be led to two possible inaccuracies: large group sizes and large correlations within the groups. In case of the logit regression, the within-group correlation *?* is small (*?* = 0.0706). Due to the group size of 91 the Gauss-Hermite quadrature should be reliable.[23] Alternatively, regressions were performed by population-averaged models using the Huber-White estimator of variance.[24] Both, compared to the random-effects logit and probit regressions' relevant population-averaged models, do not reveal any significant differences.

[21] See Table 3.
[22] For a more detailed discussion see Reese and Wiesbach (2002), Doidge (2003) and Siegel (2003).
[23] See StataCorporation (2003), p. 10.
[24] See White (1980).

5 Unifications and Reduction of the Cost of Capital

In this section we analyze the capital market reaction to the announcement and the abolition of non-voting preference shares. Our study on unifications, for the very first time, employs a two-fold research design: (i) a classical event study is used to measure wealth effects in share prices around the announcement. Since traditional valuation models do not take into account factors such as private benefits as well as liquidity, which both play an important part in the valuation of dual class shares[25], (ii) another study is performed which analyzes changes in liquidity around the share class unification to draw conclusions on the effect of cost of capital. The hypothesis is that following unification, the cost of capital should decrease due to the elimination of expropriation risk in the event of control transfer. This hypothesis implies that *ceteris paribus* single-class firms should have lower cost of capital as compared to dual-class firms. Thus, the market value relative to book assets should rise after unification, as an effect of lower cost of capital reflected by a positive stock price increase.

5.1 Announcement Effects

5.1.1 Methodolody

Measuring Abnormal Performance

Assuming that capital markets are efficient in a semi-strong form according to Fama (1970) new stock prices should always reflect all publicly available and relevant information, e.g. the announcement of unifications of non-voting preference shares into voting ordinary shares. As new information is not predictable, a significant stock price reaction should be observable on the announcement day. The observed return of the relevant share should differ significantly from its expected value.[26]

We apply standard event study methodology to estimate the market's reaction to the event using daily stock price data.[27] We use a market model approach for the analysis estimating the parameters for a period of -270 to -20 days relative to the event date. As the relevant market index, the DAFOX is used. The DAFOX is a value-weighted all share

[25] See e.g. Gardiol et al. (1997).
[26] Event study methodology is based on an examination of stock splits by Fama et al. (1969).
[27] See e.g. Maynes and Rumsey (1993).

index covering the whole population of the Amtlicher Handel, the prime segment of the Frankfurt stock exchange.[28] The DAFOX is a total-return index including dividend payments. Thus, the DAFOX mirrors the changes in the value of a broadly diversified portfolio. To estimate the model parameters, regression models for each stock j with an estimation period between 270 and 20 days before the event date are used.[29] The event date, t_0, is defined as the day of the public announcement of the share class unification or a partial abolition of preference shares. All companies are included that meet the requirement of at least 30 utilizable – i.e. the stock was traded at the relevant day – share prices within the estimation period. If there is no price for the first day of the estimation period the subsequent was chosen as the beginning of the estimation period.

The abnormal return is calculated as the difference between actual return and expected return in the event window. Expected daily returns are calculated by using the standard market model:

$$AR_{it} = R_{it} - E(R_{it}) \text{ with } E(R_{jt}) = a_i + b_i * R_m .$$

For the event window we use mainly the period from 20 trading days before the event until 20 trading days after, the [-20;+20] interval. In addition, we calculate the abnormal returns for the intervals [-10;+10] and [-4;+4] to catch stock price reactions induced by the expectation of the capital market of an upcoming announcement before the event and to detect potentially slow information processing after the event.[30]

Cumulated abnormal returns (CAR)[31] for the different event windows $[t_1;t_2]$ and the average abnormal daily returns (AAR) of event day t are calculated. Since not only individual events are under examination but groups of events, the average abnormal return relative to event day t for all n observations is computed as follows:

$$\overline{AR_t} = \frac{1}{N_t}\sum_{i=1}^{N_t} AR_{it} \text{ and } \overline{CAR_t} = \frac{1}{n}\sum_{i=1}^{n}\sum_{t=t_1}^{t_2} AR_{it} .$$

[28] See Goeppl and Schütz (1995), p. 20.
[29] See Peterson (1989), p. 38.
[30] In addition, event windows of [-60;+60], [-4;+1], [-1;+1] and [-1;0] were calculated. Results are not reported in this study but available on request.
[31] Summing up daily abnormal returns is methodologically permissible for short event winodws.

Announcement Date

The announcement date was identified by using the news archive of the internet-based data provider *Lexis Nexis* as well as Reuter's data base *Factiva* covering most of the important German newspapers, articles from the German commercial register and various ad-hoc disclosures. In addition, Bloomberg's news archive was screened. In case of varying announcement dates the least recent date was used as event date.[32]

We cannot generally rule out that announcements of an event might have taken place already one day before the corresponding publication in sources used in this study, since daily newspapers publish new information one (trading) day later. As announcement dates were verified by multiple sources this fact could possibly explain why announcement effects, as presented later on, are allocated around the event day 0.[33]

Test Statistics

One problem with choosing a suitable test statistic is the event-induced variance between the event period and the estimation period, since most events cause increases in variance. Thus, the standardized cross-sectional test presented by Boehmer et al. (1991) is used taking into account variance information from both the estimation and event period. The BMP test can be interpreted as a hybrid between the standardized residual test by Patell (1976) and the cross-sectional test e.g. by Brown and Warner (1985).

As daily abnormal returns are summed up during the event window from day $t = t$ to day $t = t + L$ the BMP test can be used to examine CARs under the assumption that the variance of CARs is L times the variance of ARs in case, that ARs are similarly distributed at all days during the event period and that ARs are stochastically independent.[34] The corresponding test statistic is as follows:

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[32] In most cases the day of the ad-hoc announcement was used as event date. Other sources comprise the Financial Times, Börsenzeitung, Frankfurter Allgemeine Zeitung, Handelsblatt and the websites of the sample firms. In several cases investors relation departments were contacted directly. Whenever possible, data were varified by a second source.

[33] Additionally it can be assumed that speculation and rumors about forthcoming share class unifications are spread out among market participants already before the official announcement. Those effects were not considered due to the missing possibility to quantify the relevant day. For a few firms there were rumors published weeks or months before the official unification announcement. In such cases the first and clear reasonably announcement date was used. A phrase such as "the company intends to unify or abolish its preference shares" is required.

[34] See e.g. Boehmer and Loeffler (1999), p. 308 (footnote 22), or Wulff (2001), p. 135.

$$t^{BMP} = \frac{\frac{1}{N}\sum_{i=1}^{N} SCAR_{i,t(L)}}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}\left(SCAR_{i,t(L)} - \sum_{i=1}^{N}\frac{SCAR_{i,t(L)}}{N}\right)^2}}$$

with:

$$SCAR_{i,t(L)} = \frac{1}{\sqrt{L}}\sum_{t=t}^{t=t+L}\frac{AR_{i,t(E)}}{\hat{d}_i} \quad \text{and} \quad \hat{d}_i = \sqrt{\frac{1}{T}\sum_{t=-270}^{t-1}\left(\frac{AR_{i,t(S)}}{\sqrt{n_t}}\right)^2}$$

Two other tests are used to prove the stability of the results and to detect the possible influence of outliers: the simple sign test and a Wilcoxon-Signed-Rank test. Due to the above described difficulty of effects a couple of days around the announcement, a simple t-test is used to test daily non-cumulated abnormal returns.[35]

5.1.2 Empirical Results

Figure 3 and Table 8 report the study results for the announcement's effects on voting and non-voting preference shares for the event group, i.e., the sample of firms that announced the abolition of their preference capital. Cumulative abnormal returns over the event period [-20;+20] are 7.69% for voting shares and 8.04% for non-voting shares. The BMP-test indicates significant positive abnormal returns for voting shares at the 5%-level for the [-20;+20] period and at the 1%-level for shorter periods around the announcement day. The level of significance is even higher when measured for non-voting shares. The abnormal return for event day 0 is 4.32% (t-value 2.61) for voting shares and 4.03% (t-value 2.57) for non-voting shares. Thus, empirical findings between the two sub-samples do not seem to differ significantly.

Figure 3 indicates that market participants anticipate relevant information prior to the official announcement.[36] CARs measured for the [-20;-1] event window sum up to 5.89% for voting and 3.55% for preference shares. The plot suggests that the markup effect before the announcement for voting shares is stronger than for non-voting shares.

[35] E.g. Serra (2002) discuss several test statistics.
[36] See Schwert (1996) for a more detailed explanation of the „markup pricing".

When comparing abnormal returns for event days [-1;0;+1] for both share classes, non-voting shares face a stronger price effect than their counterparts. The voting share sample displaying significant positive abnormal returns just for event day [0] indicates a precise identification of announcement dates. Positive and significant returns for all three event days for the sample of non-voting shares are surprising. A possible, but unlikely explanation could be due to "unclean" announcement dates for the firms that have non-voting shares outstanding only. Both the plot of CARs in Figure 3 as well as test statistics indicate some 'noise' around the announcement.

On average the market – both for ordinary as well as preference shares – reacts positively to the announcement of dual class unifications, which is in line with the existing literature.[37] Investors perceive the unification to be consistent with shareholder wealth maximization, which should reduce the cost of capital. Contrary to Bigelli (2004) finding of minority shareholder expropriation in Italy, our results show that both market values for voting and non-voting shares increase in Germany.

5.1.3 Robustness Checks

Individual firm characteristics as well as empirical methods may affect the announcement effect. This section gives a brief overview on several robustness checks that were performed.[38]

R1: Unifications in Situations of Financial Distress

First, as the unification decision can be viewed as a step towards improved corporate governance the underlying motives could be different (i) if a company voluntarily abolishes its preference shares; or (ii) is forced in situations of financial problems or restructurings and raising of external equity finance is necessary. 14 of our sample firms unify their share classes in situations of financial distress.[39] This group achieves a CAR

[37] See e.g. Bigelli (2004), or Hauser and Lauterbach (2004).

[38] For brevity tables and figures are not presented in this study but are available on request. Results are described only for non-voting preference shares throughout this Chapter.

[39] Firms were identified by screening news archives as described above two years before an abolition of non-voting shares. In addition, annual reports and news archives on firms' websites were used as well as DGAP's ad-hoc database.

over the [-4;+1] event window of 7.93% compared to 7.91% in the "healthy" group. Both CARs are significant as indicated by the BMP test. Nevertheless, results for the group in financial distress should be treated with caution as the sample size is small with only twelve observations compared to 28 in the other group. Overall, there is no significant difference in the market reaction to the announcement with regard to the two groups indicating that different possibilities to extract private benefits do not matter.

R2: Unifications with Ad hoc announcement according to §15 WpHG

Since the beginning of 1995, in accordance with Section 15 of the *Wertpapierhandelsgesetz* (WpHG), issuers of securities who admit to trading on a German stock exchange have been required to publish immediately – ad hoc – any corporate information, which (i) constitutes a fact that is not publicly known, (ii) relates to the issuer's sphere of business activity, (iii) because of the effects on the assets, concerns the financial position or the general business activities of the issuer, (iv) is likely to have a *material* influence on the stock price of the issuer's securities, or (v) in the case of listed bonds, might impair the issuer's ability to meet his liabilities.[40] Ad hoc disclosure requirements aim to avoid temporary information asymmetries in order to curb insider trading and to protect market integrity. Ad hoc relevant information has to be made public either via electronic systems[41] or financial newspapers.[42] The implicit 'catalogue' of types of news that might affect the stock price and there being notifiable involves a high degree of legal uncertainty. To what extent the abolition of preference shares affects the stock price in a material way is one aim of this study.

Thus, we split the sample into a group that announced the unification using a formal ad hoc disclosure and a second group that didn't. Although disclosure rules became effective in 1995, this subsample considers unifications from 1997 only, as for the first two years, i.e. 1995 and 1996, ad hoc news were not traceable completely. 16 out

[40] See Nowak (2004), p. 432.

[41] To determine whether companies used an ad hoc-announcement to communicate their share class unifications the following sources were used: www.dgap.de, www.euroadhoc.de, www.huginonline.com, www.equitystory.de. It can be assumed that the news published by Deutsche Gesellschaft für Ad-hoc-Publizität mbH (DGAP) represent some 90% of all ad hoc-news published by German listed companies.

[42] Newspaper articales were investigated by news provider *Lexis Nexis* and *Factiva*. Additionally, internet pages of sample firms were used. In some cases investor relations departments were contacted directly to identify the announcement conditions.

of the 30 companies that announced their unification within 1997 to 2003 used ad hoc-announcements, 14 firms did not. It is remarkable that companies unifying from 2000 onwards almost completely used ad hoc-announcements which could be interpreted as some kind of learning effect.[43]

Not surprisingly, the market reaction for the group without ad hoc announcement is stronger than in the other group. Ad hoc announcements achieved a CAR over the [-4;+1] window of 6.45% compared to 9.71% for the second group relinquishing the ad hoc announcement. An abnormal return of 5.72% for the ad hoc group indicates a strong reaction exactly on the event date but insignificant abnormal returns around that date, whereas the second group without an ad hoc announcement faces some price run-up before the announcement date. To conclude, share class unifications represent an event that has in fact a material impact on the stock price of the issuer's securities. Therefore, unifications should be announced *ad hoc* according to Section 15 of the WpHG.

R3: Market Reaction around the Annual Shareholders Meeting

We also perform a similar event study through employing the date of the annual shareholders meeting instead of the announcement of the unification.[44] No significant abnormal returns around the meeting, which formally decides on the unification, can be observed. Also, no abnormal CARs can be observed in the [-20;+20] event window. There seems to be a clear hint that the market reaction to the unification decision is completed a couple of days after the announcement.

R4: Thin Trading Issues

Literature discusses the accuracy and stability of estimated betas and potential biases with regard to beta factors of daily stock returns due to infrequent trading. As sample characteristics reveal the problem of infrequent trading, there may be a potential bias when analyzing unifications of preference shares into voting shares.

[43] Escada AG represents a special case. Escada published the unification by an ad hoc-news in the late evening of July 17, 2002 (i.e. effective of July 18). On March 5, 2002, VWD reports that Escada considers converting its reference shares into voting shares. For the subsample in this paragraph (R2) Escada is considered twofold. In the remaining analyses Escada is considered as described with its first announcement date, i.e. March 5, 2002. Indeed, the positive price reaction took place in early March 2002.

[44] See e.g. Jog and Riding (1986).

For such situations Dimson (1979) and Dimson and Marsh (1983) suggest the use of trade-to-trade betas (t2t) instead of OLS-regressions using multi-period-returns between two trading days. Berglund et al. (1989) find only small differences concerning the estimated beta factors when comparing both methods. That is why this study basically employs simple OLS-regressions and uses t2t-methods as a robustness check only. Differences in CARs and ARs are no more than marginal. The Peterson (1989) method of using *one* estimation method is confirmed by our results.

R5: Mean-Adjusted Returns

As a final robustness check, we also calculate mean-adjusted returns where event period returns are subtracted by a constant, which is the average return for the firm during its estimation period which should be before the event.[45]

$$AR_{it} = R_{it} - \frac{1}{T}\sum_{t=0}^{T} R_{it}$$

Consistent with Brown and Warner (1985) the mean-adjusted return model yields results both for CARs and ARs that are comparable to results calculated by market model OLS and t2t regressions. The results differ only marginally.

[45] See e.g. Henderson (1990), p. 288, or Leis and Nowak (2001), p. 187.

5.2 Liquidity Effects

5.2.1 Methodology

Investors are only concerned about end-of-period wealth. Some assets have higher transaction costs (lower liquidity) so gross returns will have to increase to yield equal net returns to investors.[46] Investors who have longer expected holding periods can afford to hold assets with higher transaction costs, because they only affect them when trading. These investors are the clientele for those assets. Bid-ask spreads can be used as a proxy for (il)liquidity. As transaction costs increase the expected return, the analysis of changes of stock liquidity around share class unification can be employed as a second measure for a possible reduction in cost of capital.

This section examines the market microstructure change for the event window [-60;+60] around the unification of non-voting preference shares. Bid-ask spreads are estimated from intra-day trading data, both for voting and non-voting shares before and after the share class unification. The estimation method follows Huang and Stoll (1997) utilizing a buy-sell trade indicator for transactions initiated by buyers or respectively sellers with their basic regression model

$$\Delta P_t = \frac{S}{2} \cdot (Q_t - Q_{t-1}) + l \frac{S}{2} \cdot Q_{t-1} + e_t$$

where:

S	=	traded spread
Q_t	=	buy-sell trade indicator at time t
l	=	adverse selection component (a) and inventory holding ($ß$) component
e_t	=	serially uncorrelated public information shock (e_t) and deviation of the observed half-spread ($P_t - M_t$) from the constant half-spread ($S/2$)

[46] See Amihud and Mendelson (1986).

The indicator variable model provides estimates of the traded spread, S, and the total adjustment of quotes to trade, $?(S/2)$, where $?$ comprises the adverse selection component (a) and inventory holding ($ß$) component.

The buy-sell trade indicator variable Q_t equals +1 if the transaction is buyer initiated and occurs above the midpoint M_t (ask price), and -1 if the transaction is seller initiated and occurs below the midpoint (bid price), of 0 if the transaction occurs at the midpoint. As a simplification, following Tanggaard (2003), the *tick rule* is employed: uptick trades (price increase) are classified as sells while downtick trades (price decrease) are classified as buys. Theissen (2001) validates this procedure as he finds that the simple tick rule performs almost equally well as the Lee/Ready trade classification algorithm.

5.2.2 Empirical Results

Table 9 reports the results of the liquidity analysis. Due to limited data availability only thirteen firms are included. Bid-ask spreads for voting and non-voting shares are estimated for the period before the unification [-60;-1] and for the period afterwards [+1;+60]. As can be seen from the row number of observations the number of included transactions ranges from a minimum of 25 for the voting shares of Gerry Weber to 146,604 for voting shares of SAP AG, which should be considered when interpreting the results. In five cases voting shares were less liquid than the non-voting shares resulting in higher spreads and less transactions. On average, spreads for voting shares were some 70% higher than those for non-voting shares. On the contrary, in four cases – two of them the *incomplete* unifications of MAN AG and RWE AG – voting shares were the more liquid share class. For AdCapital AG, Herlitz AG and Südzucker AG, trading activity was almost identical for both share classes, as is expressed by the number of transactions and bid-ask spreads. Concerning the last case, Fielmann AG, voting shares were not traded before the unification.

When comparing spreads before and after the abolition of preference shares the picture is quite clear: nine companies experience lower spreads for the unified class of voting shares compared to the corresponding spreads before the unification, i.e., spreads for voting as well as non-voting shares. In the case of MAN AG, where some 83.5% of

the preference capital was converted, the spread for the less liquid class of remaining non-voting shares increased. Obviously, the remaining preference shares became less liquid.

Although the number of firms included in the analysis is low and characteristics concerning trading activity vary by a hefty 586,416%, Panel B displays naïve averages calculated from the small sample. Spreads *before* the unification are on average 0.3431% and 0.3622%, respectively. Spreads for voting shares *after* the abolition are on average 0.2071%. Spreads compared for voting shares before and after unification differ significantly at the 10% level (t-value 1.8184, p-value 0.0821).

Although the spread is on average halved and differences before and after the unification are statistically significant, questions arise as to whether the reduction of bid-ask spreads has a real effect on cost of capital or – in other words – if the decrease is economically significant? In order to answer this question, we compare spreads calculated for the sample in this study to spreads calculated for the German capital market independently from events. Theissen (2001) analyzes bid-ask spreads of fifteen German firms – ten of them listed in the DAX, the remaining in the MDAX, thus including probably the most liquid German companies – and reports an average spread on of 0.0645% for a one-month period in October 1996. Like us, he finds large differences in spreads between individual firms ranging from 0.0319% to 0.4895%. For a sample of all 30 DAX companies and a two-month period in 1997, Theissen (2002) reports a range of spreads from 0.1% to 0.4%. A comparison with Booth et al. (1999) shows that spreads vary significantly through time. Average spreads for the DAX-30 for an earlier period of November and December 1991 are 0.83%, ranging from 0.13% to 3.12%. As spreads seem to differ through time and firm size, the range of spreads calculated in our analysis fits into the existing literature.

To answer the question of economic significance in the reduction in cost of capital, we put it into the context of other studies. Since this is - to our best knowledge – so far the only study examining changes in bid-ask spreads around share class unifications, we look at evidence surrounding other events. Cao et al. (2004), analyzing a sample of 1,497 IPO lockup expirations during 1995 and 1999, document a small and temporary increase in bid-ask spreads on the order of 3%-4% of the spread or about

0.12% of the share price upon expiration. Eleswarapu et al. (2004) analyze changes in bid-ask spreads for a sample of 300 NYSE-listed firms for a period of nine months before and after the introduction of Regulation Fair Disclosure rule by the SEC in October 2000. In the [-2;0] event window, effective spreads decrease by 3.25 basis points. The reduction increases the smaller and less liquid stocks are.

Amihud and Mendelson (2000) suggest that an increased liquidity lowers the cost of equity capital. For a sample of NYSE stocks between 1961 and 1980 the authors show that the greater the liquidity cost, the higher the expected return required by investors. Given that bid-ask spreads were significantly reduced in recent decades, their figures cannot literally be taken for the German capital market at the end of the nineties. Nevertheless, Figure 4 in Amihud and Mendelson (2000) indicates that expected returns decrease with an increasing rate the lower the bid-ask spreads are.

Therefore, it can be assumed that the reduction of bid-ask spreads associated with the unification of German preference shares as described above has an economically as well as statistically significant effect on the cost of capital of unifying firms.

5.2.3 Robustness Checks

This Chapter gives a brief overview on several robustness checks that were performed.[47]

R1: Shorter Event Window [-30;+30]

Shortening the event window to [-30;+30] halves the number of transactions, thus the results become less reliable. Bid-ask spreads for voting shares before the unification are on average 0.3300% (compared to 0.3431% for [-60;+60]) and 0.3607% for non-voting shares (compared to 0.3622% for [-60;+60]). Spreads for voting shares after the unification amount to 0.2103% compared to 0.2071% for the longer period. The reduction of bid-ask spreads loses significance (t-value 1.59, p-value 0.13). Spreads for the shorter window strenghten the observation made in the two cases of MLP AG and Südzucker AG: Spreads are slightly reduced during the event window. To summarize, the shorter event window obtains qualitatively similar results as compared to the standard event window which is in line with Cao et al. (2004, p. 33f).

[47] For brevity tables and figures are not presented in this study but are available on request. Results are described only for non-voting preference shares throughout this Chapter.

R2: Longer Event Window [-250;+250]

Results for a longer event window of approximately two years around the event confirm the observation of a slow reduction of bid-ask spreads around the share class unification. Spreads are 0.3873% for voting shares and 0.3807% for non-voting shares before the unification and 0.1877% afterwards for voting shares. The reduction is highly significant (t-value 2.83, p-value 0.0096).

R3: Trade Size Category

The basic analysis for event window [-60;+60] is extended by Huang and Stoll's (1997) suggestion for different trade size categories. Due to the lack of intraday data - both with respect to the number of firms with data available and low trading activity within these firms - only three categories were chosen, i.e. small trades if trade volume (price * volume per transaction) at t is lower than 15,000, medium trades for trade volumes up to 50,000 and large trades for trade volumes exceeding 50,000.[48]

Table 10 presents the results. As shown in Panel B, average spreads for low trade volumes almost do not differ from those presented in Table 9, indicating that spreads calculated from the entire data basis are determined almost completely by small trades. Consistent with the hypothesis, bid-ask spreads for voting shares decrease (i) the larger trades are, and (ii) after the unification for all three trade categories. Contrary to the finding for voting shares, non-voting shares reveal the highest spread for the medium trade category. The result could be influenced by abnormal high trading activity directly before the unification as shown in the 2 cases in Chapter 5.2.4.

Panel C compares means of voting share spreads before and after the unification for all three classes. Differences are significant at the 10% level for the low trade category only. Although not statistically tested, the right columns in Panel A present results concerning the underlying hypotheses. Bid-ask spreads should decrease for voting shares due to the higher and 'unified' trading volume afterwards and should increase for the

[48] Contrary to Huang and Stoll (1997) who use the number of shares traded per transaction, this study employs the traded volume, i.e. price multiplied by number of shares traded, due to different nominal share values throughout the period under examination. The specific segmentation (15,000 and 50,000) approximates tertiles.

remaining non-voting shares in case of partial abolitions. A '+' marks if the hypothesis holds true, a '-' indicates the opposite. In 26 out of 33 cases where a comparison of spreads before and after the unification is possible the hypothesis is confirmed.

5.2.4 Case Studies

Case 1 – MLP AG

MLP AG is an independent financial services provider headquartered in Heidelberg, Germany, serving some 580,000 clients. Since its foundation in 1971, MLP focuses on advising university graduates and clients with sophisticated requirements on pension provision, asset management and risk management with more than 2,600 consultants. As a typical founders' firm MLP went public in 1988 issuing preference shares. Voting shares started trading in 1990.

First rumors about a share class unification can be found in May 1999. CEO Manfred Lautenschläger, owning some 53% of the voting shares at that time, considered MLP's preference shares as a means to secure his influence on the company, but realizes that MLP's non-voting shares will be unified within the next five years. Then, on Saturday, September 30, 2000, MLP announced its share class unification. The effective announcement day was Monday, October 2, 2000. MLP declared reasons such as a simplification of the capital structure, a planned integration of subsidiaries, and an improved corporate governance due to international standards, as reasons for the unification, although the founders lost their majority control now owning some 33% of the share capital. The new CEO Bernhard Termühlen said that a possible membership in the DAX played no role. The annual shareholders meeting took place on November 17, 2000. For brevity, a shareholders association went to law, so finally non-voting shares ceased trading almost one year later on September 7, 2001. Although neglected a year before, in August 2001 MLP announced that the firm expected an increased liquidity in trading and improved attractiveness of its shares and – indeed – MLP's voting shares were included in the DAX in July 2001. Later in September 2002, rumors were published that insider trading around the share class unification took place.

MLP shares faced a significant reduction in bid-ask spreads. Spreads for the illiquid class of voting shares before the unification for the [-250;-1] window summed up to 0.7724% as can be seen from Figure 4. For the [-60;-1] window the spread is reduced to 0.4581%. Voting shares had a spread of 0.4572%, respectively 0.2563% for the shorter window. The plot of daily spreads in Figure 4 indicates a very high standard deviation of daily spreads before the unification. With the abolition of non-voting shares liquidity raised dramatically. The spread for the [+1;+250] window is reduced to only 0.1423%. The spread for the shorter window, which is 0.2429%, as well as the plot of daily spreads shows that the bid-ask spread for MLP shares adopts slowly, but lines for averages calculated from all transaction but not from daily averages reveal the significant raise in liquidity. In line with this, the number of transactions increased. Before the unification, KKMDB recorded some 52,000 transactions for voting-shares and 16,500 for non-voting shares, but 175,440 transactions for the unified share class.

Panel B shows that voting shares were almost illiquid before the unification. Significant trading started only two months before the unification. On the contrary, a high trading activity in non-voting shares took place two months before their abolition. Nevertheless, peaks in trading volume show that the market reaction was much stronger to other events than to the announcement of the share class unification.

Case 2 – Südzucker AG

The second example, Südzucker AG, points up the reduction of bid-ask spreads associated with the unification of share classes for a much less liquid company. Südzucker AG in Mannheim, Germany, is Europe's largest sugar producer with over 50 factories, with some 18,000 employees and a turnover of € 4.6 billion today. Voting shares were introduced in 1931, non-voting shares in 1990.

On June 6, 2001, Südzucker announced the abolition of its preference shares. Südzucker aimed to improve the attractiveness of its shares and increase trading activity. The abolition of non-voting shares should increase the free float of voting shares from 21% to 34%, improving Südzucker's rating position in the MDAX. Also international standards concerning corporate governance were mentioned as motivation. The annual shareholders meeting took place on August 23, 2001. Non-voting shares ceased trading

on September 14, 2001, just one week after MLP AG. Interestingly, Südzucker concurrently announced plans to acquire French sugar producer Saint Louis Sucre S.A. for some € 1.6 billion. Thus, the preceding unification as well as a capital increase of € 400 million for financing the planned disposal of a major subsidiary indicate that Südzucker successfully tried to improve its reputation in the market.

Figure 5 shows that spreads for both share classes amounted to 0.1687% for voting shares and 0.1700% for non-voting shares as measured for the event window [-250;-1]. Comparable to MLP AG, a decrease is observable in bid-ask spreads. For the [-60;-1] period spreads are reduced to 0.1414% and 0.1490%, respectively. One month before the abolition both classes face a significant higher trading activity. Average spreads after the unification are calculated with 0.1339% for [+1;+60] and 0.1152% for [+1;+250]. Furthermore, Panel C shows that liquidity rises with the announcement of the unification. Although, due to Südzucker's low trading activity, results have to be treated with caution.

6 Herding Effects in Corporate Governance: Price Reactions of the Control Group

As described in Section 3, we use dual class firms without a share class unification as a control group. The basic idea is borrowed from research on mergers and acquisitions, which asserts that rivals of an initial acquisition target earn abnormal returns, because of the increased probability that they will be targets themselves. On average, rival firms earn positive abnormal returns regardless of the form and outcome of acquisition.[49] In case of share class unifications, positive abnormal returns can be interpreted due to an increased probability of unification. The analysis can be viewed as a proxy for the improvement in general corporate governance and capital market regulation.

Any of the 43 unification announcements is viewed as an event for firms having preference shares outstanding at that date. Both firms in the event group – those converting their preference shares later as well as those companies in the control group - are included in the analysis. Two control groups consisting of candidates that potentially *could* convert their preference shares into voting shares, are set up in different ways, both inducing statistical problems.

The first procedure weights all observations equally. On average, there are some 70 candidates for each event resulting in more than 3,000 observations. Figure 6 and Table 11 review the results. Cumulative abnormal returns over the event window [-20;+20] are 2.33% for voting shares and 2.42% for non-voting shares. Due to the large number of observations all tests indicate significance for event windows up to [-4;+4]. The analysis of daily abnormal returns around the event indicates slightly positive returns of up to 0.24% for voting shares [+4] and 0.13% for non-voting shares both on event day. Although significance levels might arise from the large number of observations, the plot of abnormal returns in Figure 6 indicates that positive abnormal returns are strikingly predominant around the event date.

Overall, the hypothesis of an increased probability of share class unifications in the control group seems to be confirmed. Abnormal returns in unification candidates can

[49] See e.g. Song and Walkling (2000) or Fuller et al. (2002).

be interpreted as a sign of the increased probability that these companies will unify their share classes at some time in the future.

The second procedure employs an event-matching method in the spirit of Fama and MacBeth (1973). Calculations are performed over stock portfolios that are built for any of the 43 unifications in the event group rather than on individual securities. The method intends to reduce the problems resulting from errors in the estimation, i.e. statistical independence between observations. In short, the results are similar to the method of equal weights.[50] Cumulative abnormal returns over the event window [-20;+20] are 2.09% for voting shares and 2.31% for non-voting shares compared to 2.33% (respectively 2.42%) with the standard matching method. Tests indicate highly significant CARs for all event windows. Abnormal returns for non-voting shares around the event, i.e. [-4;+4], are all positive with a maximum of 0.15% at day [+2]. 4 out of 9 daily returns are significant at least at the 90% level. Thus, this method strengthens the results presented above.

[50] Corresponding Tables and Figures are available upon request.

7 Summary and Conclusions

This paper examines the unification of dual-class preference shares into a one share-one vote structure using a sample of 43 German companies. We test several hypotheses with regard to the reasons for the abolition of preference shares and their effect on wealth and liquidity.

First, as the separation of ownership and control is viewed as a means of keeping control over a firm, we undertake a detailed analysis of changes in ownership structure. Companies unifying their share classes typically have a controlling shareholder before the unification owning on average some 56% of the voting equity. Shareholders associated with lower opportunities to extract private benefits hold on average less than 50%. Interestingly, only six firms can be considered as family-owned before the event. These firms have the highest ownership concentrations. By abolishing non-voting preference shares their controlling block is reduced to 44.6%. Our analysis for a 15-year period around the unification confirms the life cycle hypothesis also confirmed by Amoako-Adu and Smith (2001), and Pajuste (2004), that at some critical firm size the incumbent owner gives up his control rights by abolishing the dual class share structure. Thus, the dual class structure can be seen as only a temporary phenomenon. A remarkable example is the unification of AdCapital's shares: The founder and CEO retired from his position shortly before the unification. Furthermore, we confirm ex-ante determinants of unifications are described by analyzing a subsample of unification between 1996 and 2002 from Pajuste (2004).

Second, dual class firms may comprise higher agency costs due to the separation and thus face higher costs of equity capital. When unifications are carried out with an aim to increase the firm's market value, the unification could be seen as a means to reduce the cost of equity capital. To shed light on the proposition, we apply two methods: (i) an event study is performed to examine the market reaction to the announcement of share class unifications; and (ii) bid-ask spreads before and after the unification are computed from intraday trading data in order to analyze the liquidity effects of the unification.

We find positive and statistically significant abnormal returns associated with the announcement of share class unifications ranging from 7.69% for voting shares to 8.04%

for non-voting shares for a [-20;+20] period around the event. Abnormal returns for the event day are 4.32% and 4.03%, respectively. These price effects are statistically significant at the 5% level. Analyses of sub-samples indicate that the market reaction is much more pronounced for unifications that are announced ad hoc in line with the requirements of the Securities Trading Act (WpHG).

The analysis of bid-ask spreads before and after the unification shows that spreads are, on average, halved, although the results should be treated with some caution due to the small sample size. Nevertheless, the reduction is statistically significant. Spreads before the unification are, on average, 0.3431% for voting shares and 0.3622% for non-voting shares before the unification. The spread for voting shares is reduced to 0.2071% after the event. An often-stated argument in favor of share class unifications, i.e., an increase in liquidity, seems to be true.

In sum, the unification of dual-class preference shares into single-class voting shares is strictly shareholder-value increasing. Dual-class firms seem to be able to significantly reduce their cost of capital through unification, because of increases in firm value and substantial reduction in bid-ask spreads.

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Table 1: Sample Construction

Panel A describes the procedure of constructing the data sample comprising 139 companies both for the event group as well as for the control group. Panel B shows the main characteristics with regard to the share classes listed at the stock market as well as the share class unification.

Panel A: Sample Construction				
	Event Group[a)]	Control Group[b)]	Total	
Dual class firms	58	104	162	*100%*
Preference shares with voting rights or multiple voting rights	-11	-2	-13	*8%*
Preference shares with restrictions on transferability ("Vinkulierung")		-2	-2	*1%*
Not traceable, missing data	-4	-4	-8	*5%*
Sample data	43	96	139	*86%*

Panel B: Main Characteristics			
Firms with voting and non-voting preference shares listed	36	57	93
Firms with non-voting preference shares outstanding only	7	39	46
Firms that abolished only parts of their non-voting preference shares (partial unification)	7		
Firms that abolished 100% of their non-voting preference shares (complete unification)	36		

[a)] Firms that abolished 100% or parts of their preference share capital in 1987 to 2003.
[b)] Firms that stayed dual-class throughout 1987 to 2003 or sub-periods.

Table 2: Types and Special Terms of Unifications in Germany

Types of unifications		Number	% Total
a)	1:1 unification	24	*56%*
b)	1:1 unification with a cash payment	3	*7%*
c)	y voting shares for x non-voting shares	2	*5%*
d)	y voting shares and z 'new' non-voting shares for x 'old' non-voting shares	1	*2%*
e)	terms not traceable	13	*30%*
Total		43	*100%*
out of which:			
f)	outstanding minimum dividends not paid (coercive unification)	7	*16%*
g)	non-coercive unifications	32	*74%*
h)	terms not traceable	4	*9%*

Table 3: Firm Ownership Concentration before the Unification

Panel A reports the fractions of voting equity held by the largest and respectively a second largest shareholder in the year prior to the share class unification. The table partitions large shareholders into 9 categories. Panel B reports the proportion of companies with a large shareholder. Companies are partitioned in 5 groups with the largest shareholder holding less than 25%, 50%, 75%, 100% and exactly 100% of the voting equity.

Panel A: Fractions of Voting Equity Held by Largest and Second Largest Shareholder 1 Year before the Unification

	Largest owner					Second largest owner		
	Number	Mean % of voting equity	Median % of voting equity	Min.	Max.	Number	Mean % of voting equity	Median % of voting equity
Families[a)]	6	64,40	63,06	10,30	100,00	0	n.a.	n.a.
Individuals	13	56,62	53,10	20,00	100,00	7	18,68	14,84
Non-bank firms	8	49,36	47,15	22,00	91,28	5	17,90	25,01
Banks	2	30,01	30,01	10,00	50,01	4	16,26	15,00
Insurances	2	48,39	48,39	36,07	60,70	2	9,16	9,16
Public-sector bodies	2	32,87	32,87	30,05	35,68	0	n.a.	n.a.
Foreign	5	75,82	75,00	60,60	99,37	1	12,50	12,50
Cooperatives	3	54,68	60,73	23,30	80,00	0	n.a.	n.a.
Employees/Management	0	n.a.	n.a.	n.a.	n.a.	2	13,02	13,02
Freefloat	0	n.a.	n.a.	n.a.	n.a.	16	n.a.	n.a.
Total sample[b)]	41	55,68	53,00	10,00	100,00	21	16,29	14,20

Panel B: Proportion of Companies with a Largest Shareholding in Voting Shares

	Number of companies with a voting share stake of				
	< 25%	< 50%	< 75%	< 100%	= 100%
Total sample	5	12	14	6	4
Families[a)]	1	1	2	0	2
Individuals	1	4	5	1	2
Non-bank firms	1	4	2	1	0
Banks	1	0	1	0	0
Insurances	0	1	1	0	0
Public-sector bodies	0	2	0	0	0
Foreign	0	0	2	3	0
Cooperatives	1	0	1	1	0
Employees/Management	0	0	0	0	0

[a)] The definition as a family firm requires a minimum age at the time of share class unification of at least 25 years and at least one change in family generation.

[b)] Excluding freefloat which is not classified as a shareholder group.

Table 4: Firm Ownership Concentration after the Unification

Panel A reports the fractions of voting equity held by the largest and respectively a second largest shareholder in the year following the share class unification. The table partitions large shareholders into 9 categories. Panel B reports the proportion of companies with a large shareholder. Companies are partitioned in 5 groups with the largest shareholder holding less than 25%, 50%, 75%, 100% and exactly 100% of the voting equity.

Panel A: Fractions of Voting Equity Held by Largest and Second Largest Shareholder after the Unification

	Largest owner					Second largest owner		
	Number	Mean % of voting equity	Median % of voting equity	Min.	Max.	Number	Mean % of voting equity	Median % of voting equity
Families[a)]	6	47,86	48,50	7,66	90,01	0	n.a.	n.a.
Individuals	15	45,37	39,00	20,00	84,87	5	13,29	10,00
Non-bank firms	6	39,51	35,47	19,42	76,40	5	14,02	10,94
Banks	2	18,15	18,15	10,00	26,30	3	13,13	10,09
Insurances	3	31,47	25,20	11,58	57,62	1	15,63	15,63
Public-sector bodies	1	33,20	33,20	n.a.	n.a.	0	n.a.	n.a.
Foreign	5	69,49	64,13	50,00	95,00	2	15,15	15,15
Cooperatives	2	34,00	34,00	17,00	51,00	0	n.a.	n.a.
Employees/Management	0	n.a.	n.a.	n.a.	n.a.	1	14,00	14,00
Freefloat	1	n.a.	n.a.	n.a.	n.a.	23	n.a.	n.a.
Total sample[b)]	40	44,60	39,67	7,66	95,00	17	13,87	10,94

Panel B: Proportion of Companies with a Largest Shareholding in Voting Shares

	Number of companies with a voting share stake of				
	< 25%	< 50%	< 75%	< 100%	= 100%
Total sample[b)]	10	12	12	6	0
Families[a)]	2	1	2	1	0
Individuals	3	5	5	2	0
Non-bank firms	2	3	0	1	0
Banks	1	1	0	0	0
Insurances	1	1	1	0	0
Public-sector bodies	0	1	0	0	0
Foreign	0	0	3	2	0
Cooperatives	1	0	1	0	0
Employees/Management	n.a.	n.a.	n.a.	n.a.	n.a.

[a)] The definition as a family firm requires a minimum age at the time of share class unification of at least 25 years and at least one change in family generation.

[b)] Excluding freefloat which is not classified as a shareholder group.

Table 5: Firm Ownership Concentration (Voting Rights) Around the Unification

The left part of the table reports the fractions of voting equity held by the largest shareholder 10 years before to 5 years after the share class unification. The right part of the table partitions the sample firms into 5 groups with the largest shareholder holding less than 25%, 50%, 75%, 100% and exactly 100% of the voting equity.

	Largest owner					Ownership fractions				
	Number	Mean % of voting equity	Median % of voting equity	Min.	Max.	Number of companies with a share stake of				
						< 25%	< 50%	< 75%	< 100%	= 100%
10 years before	30	59,20	51,30	20,01	100,00	2	5	13	7	3
7 years before	34	60,53	55,00	24,90	100,00	1	8	16	5	4
5 years before	37	59,68	55,00	12,10	100,00	2	9	17	4	5
3 years before	39	57,43	53,10	22,41	100,00	3	11	16	5	4
1 year before	41	55,68	53,00	10,00	100,00	5	12	14	6	4
1 year after	40	44,60	39,67	7,66	95,00	10	12	12	6	0
2 years after	39	43,39	38,10	5,60	95,00	12	9	13	5	0
3 years after	34	45,91	39,37	5,60	95,15	8	10	10	6	0
5 years after	20	56,02	60,10	5,60	99,00	4	4	5	7	0

Table 6: Variable Definitions

Variable Definitions	
Variable	Description
Equity issue proceeds / Equity	Net equity issue proceeds (from the cash flow statement) over share-holder's equity at the end of the previous year.
Acquisitions / Size	Number of new firms acquired in a given year over firm size (log of sales). Repeated purchases, i.e. increasing existing ownership stake are not counted.
Size	Natural Logarithm of firm's sales.
Control minus Ownership	The difference between control rights and cash flow rights.
Financial Investor dummy	Equals one if the largest shareholder (ranked by votes) is a financial institution and zero otherwise.
US cross-listing dummy	Equals one if company's shares (at least one class) is cross-listed in the US through an ADR (American Depository Receipt) probram (not differentiating between various types of listing).
Herding effects	Number of firms that unified share classes ranging from 1996 to the beginning of the relevant year.

Table 7: Ex-ante Determinants of the Unification

The effect of the variables listed on the probability to unify dual class shares is estimated by a random-effects logic regression mode (Panel A) and a random-effects probit regression model (Panel B).

Prob(Unify$_{it}$=1) = $F(X_{it}a)$

Where Unify$_{it}$ is a variable that equals 1 if company *i* switched to a single class share system in year *t* and *0* if it remained dual class in this year. Firms are dropped from the sample after unifying their shares. *F()* is the cumulative distribution function of a standard normal variable, a is a vector of coefficients, and X_{it} is a vector of explanatory variables as listed in the firms column observed for firm *i* in year *t*. The estimation method is maximum likelihood.

Panel A: Random Effects Logit Regression

	coefficient	standard error	z-statistic	p-value
Equity issue proceeds / Equity	1,3591	0,7820	1,74	0,082
Acquisitions / Size	0,9053	1,2613	0,72	0,473
Size	-0,6030	0,3069	-1,96	0,049
Control minus Ownership	-3,3202	2,0268	-1,64	0,101
Financial Investor dummy	0,0306	1,1339	0,03	0,978
US cross-listing dummy	0,8047	0,7820	1,03	0,304
Herding effects	0,0260	0,0191	1,36	0,173
Constant	0,1087	1,7081	0,06	0,949
Number of Observations	430			
Number of Groups	91			

Panel B: Random Effects Probit Regression

	coefficient	standard error	z-statistic	p-value
Equity issue proceeds / Equity	0,6845	0,4140	1,65	0,098
Acquisitions / Size	0,3653	0,6012	0,61	0,543
Size	-0,2744	0,1395	-1,97	0,049
Control minus Ownership	-1,4755	0,8893	-1,66	0,097
Financial Investor dummy	-0,0728	0,5264	-0,14	0,890
US cross-listing dummy	0,3347	0,3729	0,90	0,369
Herding effects	0,0126	0,0089	1,42	0,156
Constant	-0,2160	0,7843	-0,28	0,783
Number of Observations	430			
Number of Groups	91			

Table 8: CARs and ARs and Test Statistics to the Announcement of Share Unifications

Table 8 presents cumulative abnormal returns calculated from OLS regressions for six different event windows for 28 firms with voting shares (Panel A) and 40 firms with non-voting shares (Panel B). In addition, Table 8 shows the test statistics of three different tests (two-sided) for zero abnormal returns over the respective event window, i.e. the sign test, rank test and BMP test. Furthermore, abnormal returns for event days [-4] to [+1] are presented. A t-test tests the null hypothesis that the mean of the sample equals 0.
*, ** and *** indicate statistical significance at the 10%, 5% and 1% levels.

Panel A: (Cumulative) Abnormal Returns of Voting Shares

event window	CAR	sign test	rank test	BMP test
[-60;+60]	4,8996%	0,26493	0,42997	0,33079
[-20;+20]	7,6882%	0,13605	0,02818 **	0,04145 **
[-10;+10]	6,2275%	0,26493	0,05296 *	0,01492 **
[-4;+4]	6,5934%	0,00813 ***	0,00511 ***	0,00253 ***
[-4;+1]	6,9256%	0,06143 *	0,00132 ***	0,00124 ***
[-1;+1]	3,8608%	0,34493	0,02417 **	0,00913 ***

event day	AR	t-value	p-value	n
-4	1,2899%	1,8897	0,0700 *	27
-3	1,0938%	1,3792	0,1805	25
-2	1,0261%	1,9184	0,0657 *	28
-1	0,5774%	1,1783	0,2502	25
0	4,3189%	2,6066	0,0152 **	26
1	-0,6218%	-1,0122	0,3208	27

Panel B: (Cumulative) Abnormal Returns of Non-Voting Shares

event window	CAR	sign test	rank test	BMP test
[-60;+60]	7,4735%	0,0807 *	0,1288	0,1391
[-20;+20]	8,0433%	0,0385 **	0,0139 **	0,0038 ***
[-10;+10]	7,5021%	0,0022 ***	0,0017 ***	0,0001 ***
[-4;+4]	6,6579%	0,0002 ***	0,0015 ***	0,0001 ***
[-4;+1]	7,8447%	0,0000 ***	0,0003 ***	0,0000 ***
[-1;+1]	7,7451%	0,0000 ***	0,0001 ***	0,0000 ***

event day	AR	t-value	p-value	n
-4	-0,5704%	-0,9778	0,3347	37
-3	0,1416%	0,3188	0,7517	37
-2	0,4937%	1,0733	0,2903	37
-1	1,6739%	2,8016	0,0084 ***	34
0	4,0254%	2,5651	0,0150 **	34
1	2,9310%	2,0008	0,0524 *	40

Table 9: Changes in Bid-Ask Spreads around Share Class Unifications

Panel A presents company-specific results of bid-ask estimation equation presented in Chapter 5.1.1. Numbers of observations are included due to large differences in sizes. Panel B presents summary statistics for bid-ask spreads before and after the share class unification. Spread before unification refers to the [-60;-1] event window, whereas spread after unification refers to the [+1;+60] event window. All spreads in %.

Panel A: Descriptive Statistics of Bid-Ask Spread around Share Class Unification

Company	Share class	Spread before unification	# of Obs.	Spread after unification	# of Obs.
AdCapital AG	voting shares	0,25417	*154*	0,14999	*115*
	non-voting shares	0,26562	*119*	n.a.	n.a.
Escada AG	voting shares	0,38684	*152*	0,15397	*811*
	non-voting shares	0,27521	*358*	n.a.	n.a.
Fielmann AG	voting shares	n.a.	n.a.	0,48099	*683*
	non-voting shares	0,47495	*341*	n.a.	n.a.
Gerry Weber International AG	voting shares	0,90123	*25*	0,18054	*248*
	non-voting shares	0,51435	*246*	n.a.	n.a.
Heidelberger Zement AG	voting shares	0,19848	*4.210*	0,20345	*4.076*
	non-voting shares	0,98602	*80*	n.a.	n.a.
Herlitz AG	voting shares	0,44033	*75*	0,35195	*144*
	non-voting shares	0,39729	*78*	n.a.	n.a.
Koenig & Bauer AG	voting shares	0,60401	*84*	0,30640	*660*
	non-voting shares	0,37913	*407*	n.a.	n.a.
MAN AG	voting shares	0,05287	*30.683*	0,05204	*31.700*
	non-voting shares	0,09886	*4.683*	0,20593	*1.161*
MLP AG	voting shares	0,45810	*7.605*	0,24293	*27.952*
	non-voting shares	0,25627	*26.203*	n.a.	n.a.
RWE AG	voting shares	0,08045	*24.078*	0,08690	*33.629*
	non-voting shares	0,20563	*2.526*	0,18436	*2.756*
SAP AG	voting shares	0,37701	*28.576*	0,16603	*146.604*
	non-voting shares	0,19791	*131.929*	n.a.	n.a.
Stada Arzneimittel AG	voting shares	0,22242	*2.162*	0,18348	*3.140*
	non-voting shares	0,50792	*398*	n.a.	n.a.
Südzucker AG	voting shares	0,14138	*831*	0,13393	*1.804*
	non-voting shares	0,14900	*1.284*	n.a.	n.a.

Panel B: Summary Statistics of Bid-Ask Spread around Share Class Unification

	Spread before unification		Spread after unification
	voting shares	non-voting shares	voting shares
Mean	0,34311	0,36217	0,20712
Median	0,31559	0,27521	0,18054
min.	0,05287	0,09886	0,05204
max.	0,90123	0,98602	0,48099
# of Obs.	12	13	13

Table 10: Bid-Ask Spreads in Trade Size Categories around Share Class Unifications

Panel A presents company-specific results of bid-ask estimation with consideration of trade size categories as proposed by Huang and Stoll (1997). It is hypothesised that bid-ask spreads decrease for voting shares and increase for the remaining non-voting shares in case of partial abolitions. + and – for the right columns of Panel A indicate if the hypothesis holds true or respectively wrong. Panel B presents summary statistics for bid-ask spreads before and after the share class unification. Spread before unification refers to the [-60;-1] event window, whereas spread after unification refers to the [+1;+60] event window. All spreads in %. Panel C employs simple t-tests to test whether means of bid-ask spreads of voting shares before and after the unification differ.

Panel A: Descriptive Statistics of Bid-Ask Spread around Share Class Unification

Company	Share class	Spread before unification			Spread after unification		
		trade volume < 15.000	trade volume > 15.000	trade volume > 50.000	trade volume < 15.000	trade volume > 15.000	trade volume > 50.000
AdCapital AG	voting shares	0,25592			0,15878 +	0,04177	
	non-voting shares	0,26712					
Escada AG	voting shares	0,39250	0,17400		0,15330 +	0,16737 +	
	non-voting shares	0,27373	0,28256				
Fielmann AG	voting shares				0,52842	0,45486	0,45668
	non-voting shares	0,51499	0,44440	0,33682			
Gerry Weber Intl. AG	voting shares	0,90123			0,18050 +	0,17657	
	non-voting shares	0,52067	0,39467				
Heidelberger Zement AG	voting shares	0,20190	0,19225	0,18094	0,20581 -	0,20191 -	0,14515 +
	non-voting shares	0,94249	1,18209				
Herlitz AG	voting shares	0,44033			0,34312 +		
	non-voting shares	0,39729					
Koenig & Bauer AG	voting shares	0,59099	0,63040		0,30659 +	0,30942 +	0,24325
	non-voting shares	0,38095	0,38578				
MAN AG	voting shares	0,05548	0,04755	0,04931	0,05343 +	0,04740 +	0,05079 -
	non-voting shares	0,10417	0,08818	0,09292	0,20422 +	0,22132 +	
MLP AG	voting shares	0,49777	0,43089	0,45851	0,27055 +	0,21278 +	0,20816 +
	non-voting shares				0,27721	0,24175	0,24779
RWE AG	voting shares	0,09486	0,08106	0,07526	0,09424 +	0,08497 -	0,08399 -
	non-voting shares	0,23052	0,18699	0,18386	0,21564 -	0,18507 +	0,15489 -
SAP AG	voting shares	0,47149	0,39488	0,34599	0,18248 +	0,17398 +	0,15691 +
	non-voting shares	0,24140	0,20792	0,18421			
Stada Arzneimittel AG	voting shares	0,22991	0,20920	0,23459	0,19548 +	0,16633 +	0,14132 +
	non-voting shares	0,49901	0,52745	0,37111			
Südzucker AG	voting shares	0,13497	0,15896	0,12992	0,13276 +	0,14037 +	0,12132 +
	non-voting shares	0,14824	0,15484	0,11321			

Panel B: Summary Statistics of Bid-Ask Spread around Share Class Unification

	Spread before unification			Spread after unification		
	voting shares			voting shares		
	trade volume < 15.000	trade volume > 15.000	trade volume > 50.000	trade volume < 15.000	trade volume > 15.000	trade volume > 50.000
Mean	0,35561	0,25769	0,21065	0,21580	0,18148	0,17862
Median	0,32421	0,19225	0,18094	0,18248	0,17067	0,14515
min.	0,05548	0,04755	0,04931	0,05343	0,04177	0,05079
max.	0,90123	0,63040	0,45851	0,52842	0,45486	0,45668
# of Obs.	12	9	7	13	12	9
	non-voting shares			non-voting shares		
Mean	0,37671	0,38549	0,21369	0,23236	0,21604	0,20134
Median	0,32734	0,33417	0,18404	0,21564	0,22132	0,20134
min.	0,10417	0,08818	0,09292	0,20422	0,18507	0,15489
max.	0,94249	1,18209	0,37111	0,27721	0,24175	0,24779
# of Obs.	12	10	6	3	3	2

Panel C: Test Statistics comparing Means before and after Unifications for 3 Trade Size Categories

	trade volume < 15.000	trade volume > 15.000	trade volume > 50.000
t-value	1,83331	1,15152	0,47940
p-value	0,07973 *	0,26380	0,63905

Table 11: CARs and ARs and Test Statistics in the Control Group

Table 11 presents cumulative abnormal returns for the control group calculated from OLS regressions for six different event windows for voting shares (Panel A) and non-voting shares (Panel B). In addition, Table 11 shows the test statistics of three different tests (two-sided) for zero abnormal returns over the respective event window, i.e. the sign test, rank test and BMP test. Furthermore, abnormal returns for event days [-4] to [+1] are presented. A simple t-test tests the null hypothesis that the mean of the sample equals 0.
*, ** and *** indicate statistical significance at the 10%, 5% and 1% levels.

Panel A: CARs and ARs of Voting Shares in the Control Group

event window	CAR	sign test	rank test	BMP test
[-60;+60]	5,7467%	0,0000 ***	0,0000 ***	0,0000 ***
[-20;+20]	2,3276%	0,0000 ***	0,0000 ***	0,0000 ***
[-10;+10]	1,3634%	0,0077 ***	0,0004 ***	0,0002 ***
[-4;+4]	1,0513%	0,0342 **	0,0003 ***	0,0000 ***
[-4;+1]	0,6497%	0,0835 *	0,0142 **	0,0004 ***
[-1;+1]	0,4127%	0,8549	0,1176	0,0019 ***

event day	AR	t-value	p-value	n
-4	0,0477%	0,7350	0,4624	1769
-3	0,2096%	2,9443	0,0033 ***	1773
-2	-0,0030%	-0,0421	0,9665	1771
-1	0,2222%	3,2699	0,0011 ***	1761
0	0,0162%	0,2430	0,8080	1780
1	0,2186%	2,7936	0,0053 ***	1750
2	0,1292%	1,6454	0,1001	1723
3	0,0789%	1,0981	0,2723	1771
4	0,2366%	3,3672	0,0008 ***	1747

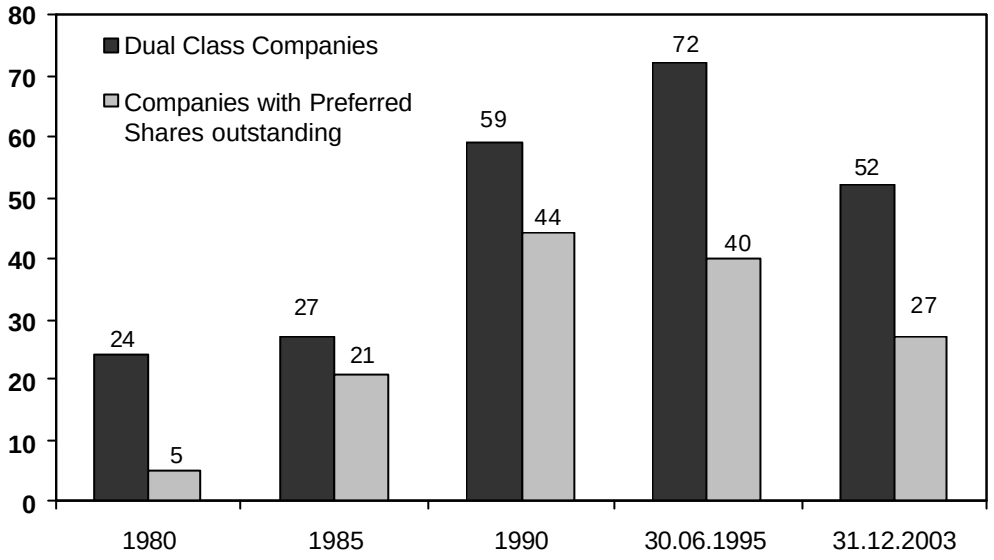
Panel B: CARs and ARs of Non-Voting Shares in the Control Group

event window	CAR	sign test	rank test	BMP test
[-60;+60]	4,9655%	0,0000 ***	0,0000 ***	0,3174
[-20;+20]	2,4238%	0,0000 ***	0,0000 ***	0,0000 ***
[-10;+10]	1,3279%	0,0001 ***	0,0000 ***	0,0000 ***
[-4;+4]	0,8993%	0,0061 ***	0,0000 ***	0,0000 ***
[-4;+1]	0,5608%	0,4219	0,0031 ***	0,0000 ***
[-1;+1]	0,2744%	0,6237	0,1604	0,0039 ***

event day	AR	t-value	p-value	n
-4	0,0721%	1,4173	0,1565	3082
-3	0,1213%	2,35	0,0188 **	3067
-2	0,1101%	2,198	0,0280 **	3072
-1	0,1324%	2,8417	0,0045 ***	3076
0	0,0776%	1,6317	0,1029	3061
1	0,0860%	1,6923	0,0907 *	3056
2	0,1750%	3,7688	0,0002 ***	2988
3	0,0589%	1,1924	0,2332	3080
4	0,1338%	2,8608	0,0043 ***	3042

Figure 1: Number of German Dual Class Companies from 1980 to 2003

Figure 1 presents the number of firms with both voting and non-voting preference shares and with non-voting preference shares outstanding at the German stock market over the period from 1980 to 2003.



Sources: Daske (2000) and Boersen-Zeitung, December 31, 2003.

Figure 2: Distribution German Share-Class Unifications

Figure 2 presents the companies that performed a share class unification of non-voting preference shares into voting shares during the examined period ranging from 1987 until the end of 2002. The date indicates the announcement date as used in the event study. In some cases the official announcement date can be prior to the date shown below, i.e. the unification was announced after stock market trading ceased.

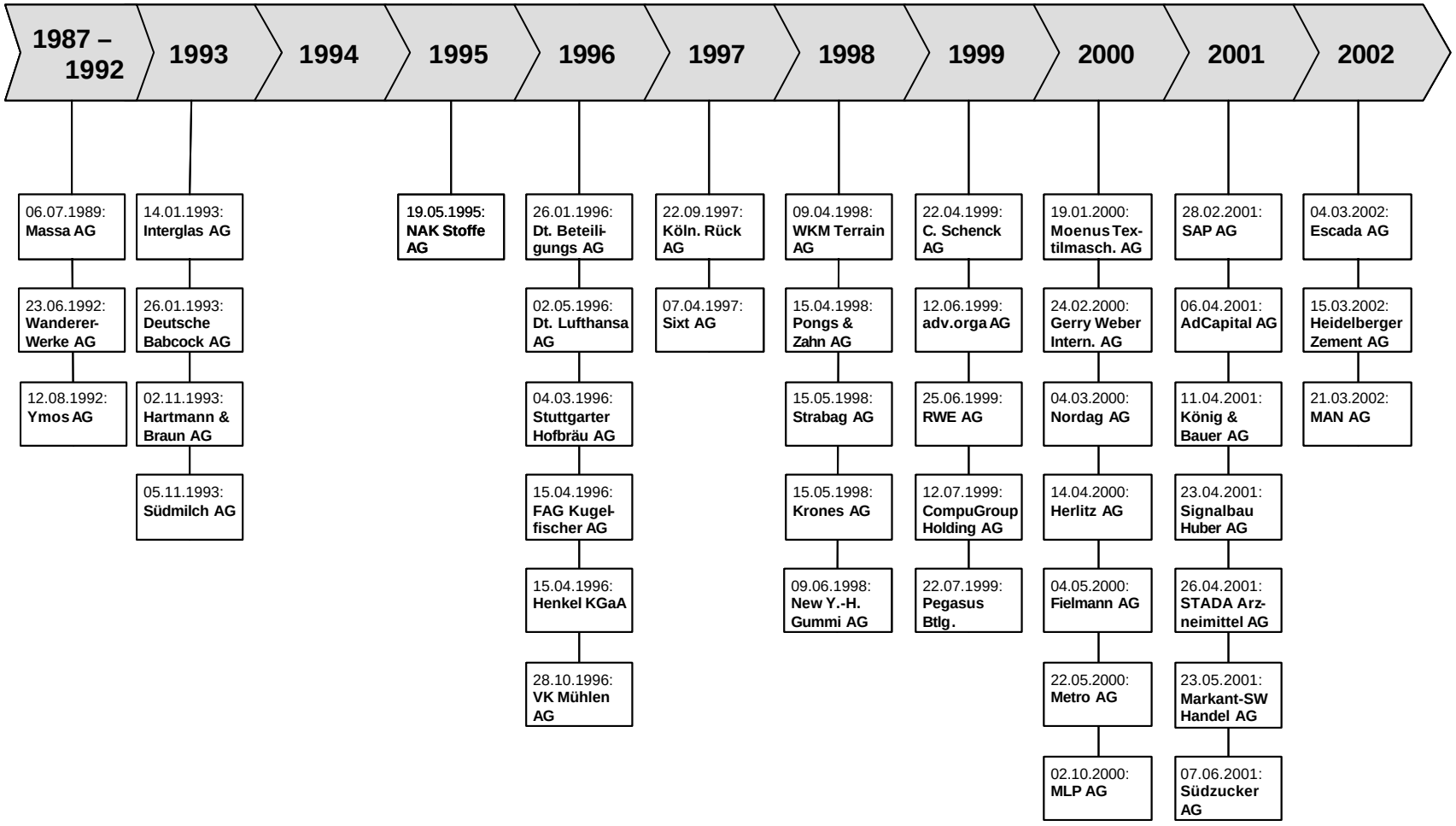


Figure 3: CARs and ARs around Share Class Unification Announcement

Figure 3 displays abnormal returns (ARs) as well as cumulative abnormal returns (CARs) both for voting and non-voting preference shares. 28 voting stocks and 40 non-voting stocks met the requirements to be included in the event study.

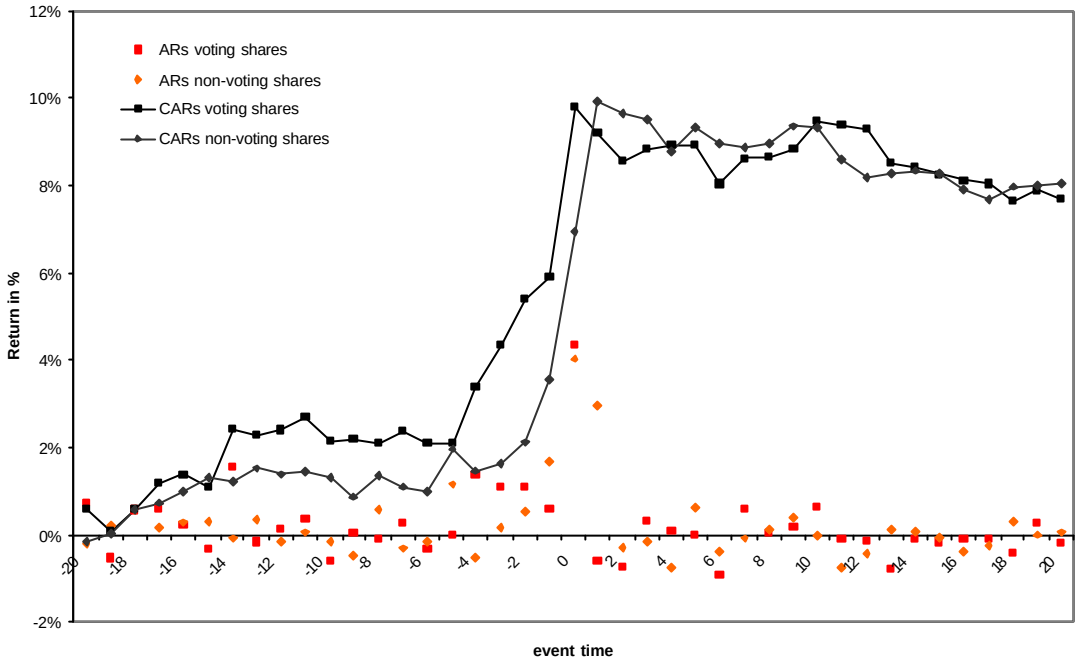


Figure 4: Spreads and Trading Activity for MLP AG

Panel A plots daily spreads for voting and non-voting shares before and after the unification marked as event day 0. Averages are calculated as the quotient over all observations rather than as the average of plotted daily spreads. Panel B shows the trading activity for MLP's voting shares measured in number of daily transactions. Panel C shows the trading activity for MLP's non-voting shares measured in number of daily transactions.

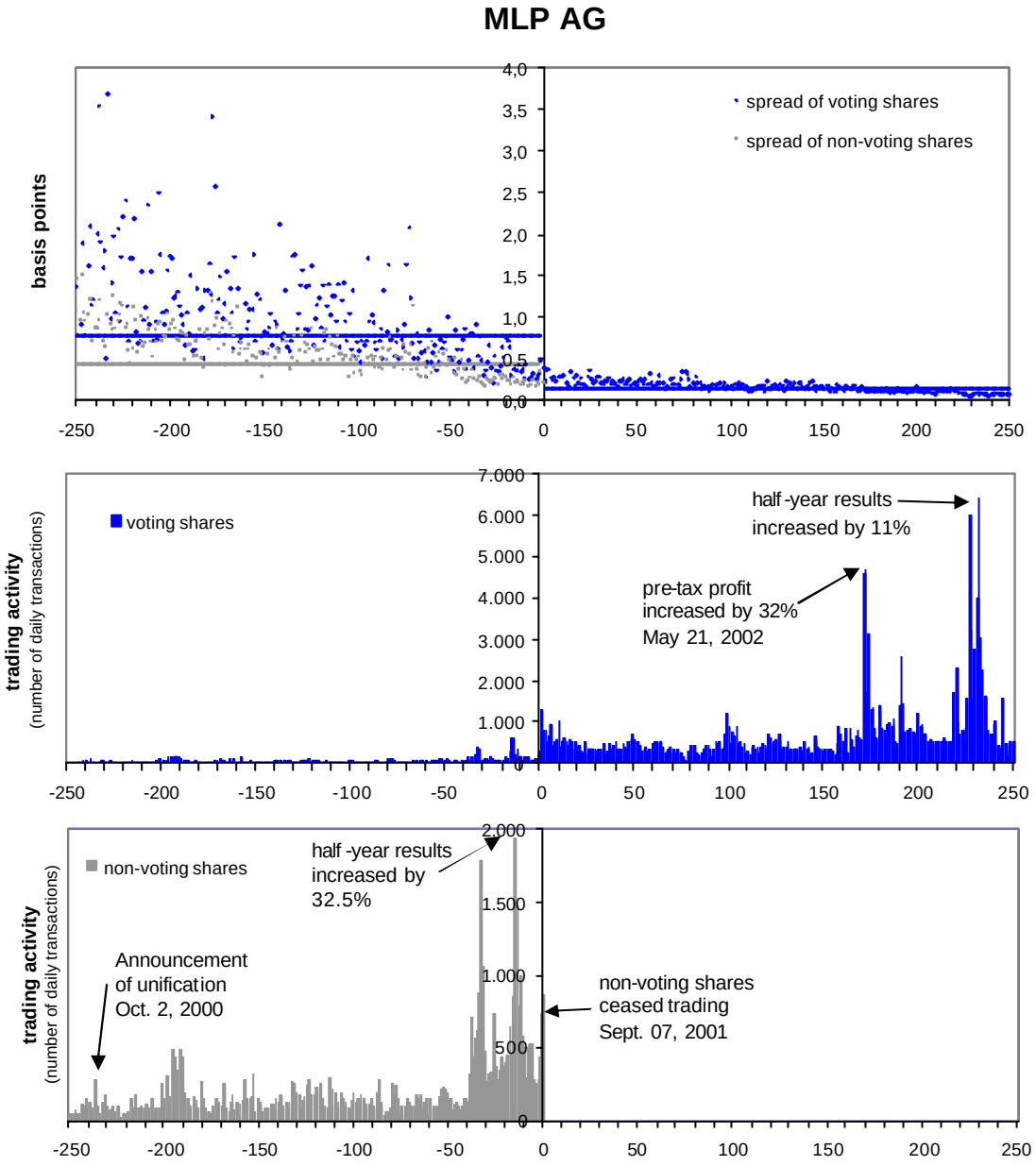


Figure 5: Spreads and Trading Activity for Südzucker AG

Panel A plots daily spreads for voting and non-voting shares before and after the unification marked as event day 0. Averages are calculated as the quotient over all observations rather than as the average of plotted daily spreads. Panel B shows the trading activity for Südzucker's voting shares measured in number of daily transactions. Panel C shows the trading activity for Südzucker's non-voting shares measured in number of daily transactions.

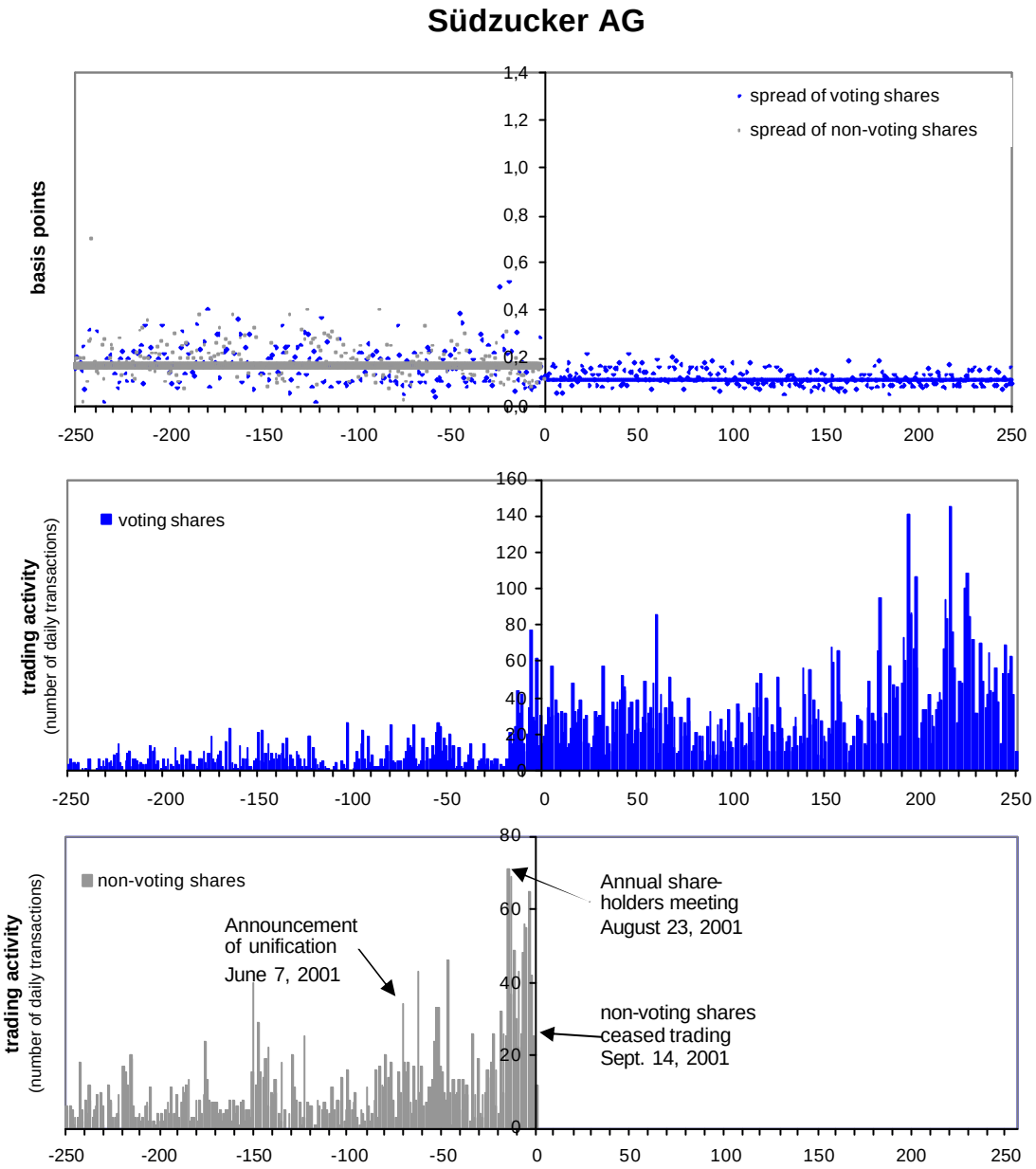


Figure 6: CARs and ARs around Unification Announcements for the Control Group

Figure 6 displays abnormal returns (ARs) as well as cumulative abnormal returns (CARs) both for voting and non-voting preference shares in the control group.