The Long-Term Valuation Effects of Voluntary Dual Class Share Unifications

Beni Lauterbach[a,]*, Anete Pajuste[b]

[a] School of Business Administration, Bar-Ilan University, Ramat Gan 52900, Israel
[b] Stockholm School of Economics in Riga, Latvia

Abstract

We study 121 voluntary dual class share unification in Europe during 1996-2009, and uncover evidence suggesting a positive valuation response to governance improvements and a negative valuation response to possible financial tunneling. Corporate governance improvement is attained by abolishing the wedge between ownership and voting rights and by significantly decreasing controlling shareholders' voting power. Financial tunneling is suspected when some controlling shareholders use the unification hype to sell part or all of their holdings at inflated prices. On average, the corporate governance positive valuation effects prevail, and voluntary unifications are accompanied by a statistically and economically significant increase of Tobin's Q.

JEL classification: G32; G34

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* Corresponding author: Tel. +972 3 5318901; fax: +972 37384040.
E-mail addresses: beni.lauterbach@biu.ac.il. (B.Lauterbach), anete.pajuste@sseriga.edu (A.Pajuste)

1. Introduction

One focal point of the worldwide corporate governance agenda of scholars, regulators and the general public is the wedge between ownership and control. When the control capacity exceeds ownership rights (e.g. the CEO in a diverse-ownership firm, or controlling shareholders in a closely-held firm) some abuses of the excessive control power can be anticipated.

Our paper focuses on a particular wedge structure - dual class shares. Firms adopting the dual class equity structure offer two classes of common shares: high- and low-voting-power shares. In dual class share firms it is common that the controlling owner, family or coalition, holds primarily high-vote shares, while the public hoards the cheaper low-vote shares. Thus, in dual class firms a wedge is created, as the control group typically commands α% of firm's vote while owning less than α% of firm's equity.

The dual class capitalization structure is efficient in situations where the entrepreneurs or firm's controlling managers need to be insulated from the outside market for control. For example, in the fast-growth periods of the firm's life cycle, where leaders have to devote their full time, attention and human capital to advancing firm growth and long-term development plans, it might be optimal to protect firm leaders from outside takeover threats by granting them extra control power.

However, the wedge between ownership and control (vote) rights typically accompanying dual class share capitalizations may exacerbate firm's agency problems. Bebchuk et al. (2000) criticize all wedge equity structures, claiming that the wedge affords lower equity holdings by controlling shareholders, effectively reducing the cost of private benefits consumption by the controlling shareholders. This cost reduction encourages the

control group to further increase its private benefits consumption at the expense of public shareholders.[1]

As dual class firms mature or circumstances change, the agency costs of the dual class structure begin to outweigh its original benefits. Consequently, studies such as Bennedsen and Nielsen (2010) find that in Europe the dual class structure discounts firm market value by about 20% on average.

The remedy to the agency problems of dual class share firms is dual class share unification. In a dual class share unification all company shares are transformed into "one share one vote". Unifications do not only eliminate the wedge between vote and ownership. They also dilute the voting power of controlling shareholders (whose high-vote shares lose their excess voting rights), weakening controlling shareholders rule over the firm. Harris and Raviv (1988) discuss the optimality of the "one share one vote" structure in the context of control contests and "outside" market discipline.

The European Union has debated extensively a potential mandatory "one share one vote" law (EC, 2007), but did not adopt it also because commissioned studies (Burkart and Lee, 2008, and Adams and Ferreira, 2008) conclude that the theoretical and empirical justification for such a regulation is weak. In reality, however, one observes a worldwide tide in voluntary unifications (unifications initiated by the firms themselves). For example, Maury and Pajuste (2011) report that between 1996 and 2002 the fraction of dual class firms in 7 European countries has decreased from 43% to 29% (of exchange-traded firms).[2] It appears that public opinion pressure stepped in, substituting for irresolute official legislation.

[1] The wedge problem is well-recognized and topical in public and professional community discussions as well. For example, Orsagh (2014) writes about the recent Alibaba dual-class shares IPO: "By adopting a dual-class structure, however, companies are sending the message that they want to control a majority of the votes but not take a majority of the risk. Another way to say it is that they want the public's capital, just not their opinion."

[2] We have further monitored the fraction of dual class firms in these countries, and found that by 2012 end the fraction of dual class firms has decreased to 16%.

Our major task in this study is to examine the long-term relative valuation (Tobin's Q) effects of voluntary dual class share unifications. Given the corporate governance improvements upon unification and given public's continuous support of it, can we resolve the mixed results in previous research and provide more convincing evidence that unifications increase shareholders value?

In our quest to understand the long-term valuation response of dual class share unifications, we observe a significant temporary pointed peak in relative stock valuation (Tobin's Q) in the year after the unification, and find that many controlling shareholders dilute (and sometimes even sell all) their holdings during the "over-valuation" period in stock prices. Diluting and selling shares at inflated prices increases controlling shareholders wealth and may be considered an act of "financial tunneling".[3]

If financial tunneling occurs in some cases, it has negative valuation effects that may offset the positive valuation impact of corporate governance improvements, and may weaken or mask the fundamental positive effect of unification on firm valuation. Indeed, when we exclude cases where controlling shareholders sold shares in the unification year and in the year afterwards, we unveil large and statistically significant Tobin's Q gains to unifying firms. This finding suggests that unifications per-se are beneficiary for public shareholders, most probably because of the corporate governance improvements accompanying them.

Section 2 provides a concise background on dual class shares and unifications, and develops our hypotheses. Section 3 describes the sample and data. Sections 4 and 5 report our results. Section 6 discusses some robustness tests and alternative explanations, and Section 7 concludes.

[3] There are other possible interpretations of controlling shareholders' selling. We examine these later.

2. Voluntary Unifications

2.1. Some Background on Dual Class Shares and Unifications

A considerable proportion of publically traded firms around the world have a dual class equity structure, namely offer two classes of common shares that differ in their voting rights. In short we will refer to these shares as high- and low-voting rights shares. About 6% of the U.S. traded firms and 24% of the European traded firms have the dual class share structure (Gompers et al., 2010, and Bennedsen and Nielsen, 2010).

The dual class structure has some clear advantages, mainly at the initial fast-growth stages of firm's life cycle where entrepreneurs' uninterrupted leadership is important for firm's success (see, for example, recent years IPOs of low-vote shares by Google, LinkedIn, Facebook and Alibaba). At such accelerated-growth periods the entrepreneurs or controlling shareholders who manage the firm have to invest their entire time and human capital resources in the firm, and need to pursue the firm's long-term goals. Thus, "to create stronger incentive for managers to make these investments, shareholders may wish to insulate managers from the threat of takeover by consolidating voting control among the managers." (Lehn et al., 1990, p. 563). Without the dual class structure (whereby the controlling shareholders usually obtain a disproportional voting power) entrepreneurs and managers may choose less "bold" business plans and would not make their own human capital so firm-specific. Thus, the dual class share structure appears as an efficient (and perhaps optimal) capitalization structure in many growth firms and perhaps also in some other specific firms where consolidation of control is essential. Accordingly also, studies such as Bauguess et al. (2012) and Dimitrov and Jain (2006) record positive stock price reactions to dual class share capitalizations.

However, as firm matures or circumstances change, the advantages of the dual class structure fade out, and in some firms the unpleasant side of the dual class structure is exposed. The dual class structure typically results in a wedge between controlling shareholders' control (=voting) and equity (=dividend) rights. Rationally, controlling shareholders concentrate their holdings in high-vote shares because such a concentration affords them to secure their rule over the firm at the lowest possible own investment. (On the other side, small public shareholders prefer low-vote shares that sometimes even offer higher dividends than the high-vote shares.) Consequently, "wedge" companies, where controlling shareholders' proportion in firm's vote exceeds their equity proportion, emerge. These "wedge" structures are in Bebchuk et al. (2000) view the worse form of corporate governance, as they exacerbate all controlling shareholders' agency problems. With a relatively low equity proportion, the cost to a controlling shareholder of a 1$ private benefits consumption is reduced or becomes relatively low; hence the controlling shareholder is tempted to consume more private benefits at the expense of the public shareholders.

In a rational world, the disadvantage of mature dual class firms is widely recognized by public investors. In Europe, Bennedsen and Nielsen (2010) show that the dual class structure discounts firm market value by about 20% on average, a deeper discount than that affected by alternative structures (e.g. pyramids) that also generate disproportionate vote and equity holdings. Perhaps also expected, Amoako-Adu and Smith (2001) record shareholders' disputes inside Canadian dual class firms.

The problems of mature dual class firms convinced some of the controlling shareholders to abort this equity structure. In the recent two decades unifications of dual class shares became trendy. In unifications all classes of shares are converted into "one share one vote". Rarely, compensation is offered to the superior-vote shareholders (for the loss in vote

transpired upon them when equating all share classes' voting power). However, typically, the unification is voluntary and without any compensation.[4]

Existing literature discusses the possible reasons for voluntary dual class share unifications. Maury and Pajuste (2011) refer to the difficulty of mature dual class firms in raising additional capital. They show theoretically that when future growth opportunities are attractive, it is worthwhile for controlling shareholders to give up the extra private benefits afforded by the dual class structure, in return for the abundant extra cash flows promised by the attractive investment opportunity. Maury et al. (2011) further report that in their European sample, about 41% of the unifying firms issued equity following the unification. This suggests that alleviating external equity financing obstacles may be an important reason for dual class share unifications.

Lauterbach and Pajuste (2014) argue that the increase in negative sentiment (negative media and public opinion) on dual class shares in the last two decades increased the cost of the dual class structure in the eyes of controlling shareholders. Thus, for some firms, costs exceeded benefits and the dual class structure was voluntary abolished. Based on media articles, Lauterbach et al. (2014) construct a yearly anti-dual-class sentiment index and show that the number of voluntary unifications and the level of the anti-dual class sentiment are positively correlated.

Betzer et al. (2013) advance the index membership motive for dual class share unifications. They show that firms in Germany that were about to drop from a prestigious index unified their dual class shares, thus increasing the market value of their unified share

[4] Interesting studies of non-voluntary unifications exist and examine Israel where a law practically forced dual class share unifications. Hauser and Lauterbach (2004) estimate the price of vote implicit in the compensation received upon such unifications, and Lauterbach and Yafeh (2011) show how the controlling shareholders regain most of their lost voting power in the years following the non-voluntary, regulation-induced unification.

free-float and remaining in the index. Unifications may also enhance share liquidity by eliminating the trade fragmentation that exists when both share classes are publically traded.

The common denominator of the above motives is that they elucidate the positive aspects of unifications. Unifications should increase firm's market value because they facilitate capital raising, improve the firm's public image, and enhance firm's stock liquidity. The elimination of the wedge between ownership and vote percentage of controlling shareholders and the typical reduction in controlling shareholders' vote, tends to trim private benefits and increase public shareholders (=market) share in firm's total value.

Negative aspects of mature firms' dual class share unifications are scarce. Bigelli et al. (2011) call attention to the fact that in voluntary unifications without compensation public investors who hold the high-vote share are hurt because they do not receive compensation for the loss of their share's vote superiority – they lose the price premium of the high-vote share. However, Dittmann and Ulbricht (2007) find that superior-vote shares appreciate in response to unification announcements. Hence, it is possible that on balance and on average even superior-vote shareholders gain from the unification.

2.2. The Financial Tunneling Hypothesis

In the first year after the unification the market value of unifying firm's equity skyrockets – see Maury and Pajuste (2011) Table 6, and Lauterbach and Yafeh (2011) Table 6. However, after the peak in year +1, i.e., in the later post-unification years, Tobin's Q and Market to Book value of equity gradually decline. Apparently, the unification generated a public euphoria that induced a peak in firm's market valuation in year +1 (where year 0 is the unification calendar year). Voluntary unifications were probably perceived as an important corporate governance reform, and as a landmark change in the attitude of the firm and its

controlling shareholders towards small public shareholders. Thus, public investors apparently overreacted and bid up unifying firms' stock prices too sharply.

We argue that the "near unification" overshoot in unifying firms' valuations tempts controlling shareholders. Diluting their shareholdings close to the peak prices may enrich controlling shareholders considerably. Some controlling shareholders presumably know that their firm's share price is not worth its year +1 market price; hence, they may decide to sell some of their shares to public investors at inflated prices. Upon realizing the "misconduct" of the firm's controlling shareholders, the long term firm valuation declines.

It is noteworthy that even if controlling shareholders elect to "cash in" by selling control over the firm to another control group close to the peak year +1 price, such a sale may hurt simple public investors as well. This is because the new control group can try to justify its high purchase price by increasing its private benefits extraction from the firm.

Given the above discussion we propose

The financial tunneling hypothesis: When controlling shareholders sell part or all of their shares up to a year after the unification, the long-term valuation gains are on average lower.

The financial tunneling hypothesis is novel in the context of unifications. Yet, it is not novel in the literature – see Atanasov et al. (2011) for a definition, U.S. law analysis, and examples of financial tunneling. (They actually call our case "equity tunneling".)[5]

We are not the first to examine aspects of the tunneling hypothesis in the context of dual class shares. Jordan et al. (2014) examine the dividend policy of dual class share firms. If tunneling or expropriation is more common in dual class firms, they should distribute less

[5] It is also noteworthy that financial tunneling is not the only hypothesis that may explain the post-unification trading of controlling shareholders. It is just an additional explanation. In the empirical work we will test it against possible alternative reasons for the controlling shareholders' selling activity.

dividends. Jordan et al. (2014) find that U.S. dual class firms pay out more dividends, casting doubt on the expropriation hypothesis.

There exists at least one important difference between Jordan et al. (2014) and us. We are examining a "one shot" tunneling opportunity for the controlling shareholders. Tunneling is more likely when a "one shot" opportunity exists, especially if after the execution of the tunneling opportunity controlling shareholders exit. In our sample, a considerable proportion of controlling shareholders sold all their holdings after the unification. In this sense, our financial tunneling hypothesis complements the tests of Jordan et al. (2014) because we test "one shot" tunneling opportunities.

Also interesting and probably related to our financial tunneling hypothesis is Larrain and Urzua (2013). They show that in Chile secondary equity issues are followed by poor future returns to public shareholders only when controlling shareholders use the issuance to dilute their holdings. Larrain et al. (2013) call their controlling shareholders' selling or dilution phenomena "market timing", and so could we. However, we preferred the term financial tunneling because it more precisely describes the consequences of these dilutions.

2.3. The Refined Corporate Governance Improvement Hypothesis

The common hypothesis in unification research is that unifications promote corporate governance by eliminating the wedge between controlling shareholders' percentage in vote and percentage in equity and by decreasing controlling shareholders vote. All these should cut private benefits and increase firm's market valuation.

Nevertheless, existing research documents mixed results and inconclusive evidence on the valuation effects of dual class share unifications, casting doubt about the validity and importance of the corporate governance improvement hypothesis. For example, Lauterbach and Yafeh (2011) find a statistically insignificant long-term increase in Q following dual

class share unifications. Maury and Pajuste (2011) report a slight statistically insignificant long-term increase in the industry-adjusted Market to Book value ratio of unifying firms' equity. Dittmann and Ulbricht (2007) and Smart et al. (2008) document a significantly positive stock price reaction to unification announcements while Biggeli et al. (2011) find a small 0-0.5% mean total capitalization response to unification announcements. Adams and Ferreira (2008) in an extensive literature review conclude that "The fact that such studies often disagree with each other indicates that value effects of events that change the proportionality of ownership are very hard to identify empirically" (ibid, p. 84).

We argue that our financial tunneling hypothesis might help resolve the inconclusive evidence of existing tests of the corporate governance improvement hypothesis. The mixed evidence in past research might emanate from the negative valuation effect of the financial tunneling hypothesis, which obscures the positive valuation effect of the corporate governance improvement hypothesis. If so, a refined "corporate governance improvement" hypothesis can be proposed:

The refined corporate governance improvement hypothesis: Pure unifications (unifications where controlling shareholders do not dilute their holdings after the unification) improve firm's corporate governance and increase firm's market valuation.

According to the above hypothesis, when we exclude cases suspect of financial tunneling (cases where controlling shareholders dilute their holdings), only the corporate governance improvement effect remains, and market valuation should increase. Essentially, by excluding cases where both financial tunneling and governance improvements are at work, we achieve a "clean" corporate governance improvement subsample, where we should observe a clear increase in unifying firms' market valuation.

3. Sample and Data

We start with a sample of dual class shares and dual class share unifications in Europe, assembled by Maury and Pajuste (2011). Maury et al. (2011) focus on seven Western European countries: Denmark, Finland, Germany, Italy, Norway, Sweden and Switzerland, where dual class share firms represented (on 1995) more than 20% of listed firms. They identify 109 unification events during 1996-2002 and 384 dual class firms that did not unify their shares during that period and can serve as control for unifying firms. We extend the sample till 2009, and find 153 unifications (and 340 non-unifying firms) in the 1996-2009 period. This is our raw initial sample.

A central goal of the study is to observe the long-run effects of unifications. Naturally, the long term (three years at least after the unification) perspective that we require, contracts our sample further. During that post-unification period, 14 of the 153 unifying firms were delisted, and for 18 more firms we are missing ownership data or financial data on crucial dates.[6] This leaves us with 121 unifying firm for the empirical work. Similarly, out of our 340 dual-class control firms, we exclude 140 delisted firms and 10 firms that unified their dual class shares during 2009-2012. Thus, the control sample in our empirical work comprises 190 firms with complete data throughout 1994-2012.

For each of the 311 sample firm we collect from Datastream yearly data on total assets, book value of equity, market value of equity, and return on assets (ROA). These data serve for sample description and for the computation of Tobin's Q (the valuation variable in

[6] Almost all of these 18 firms are no longer listed, thus we could not find ownership and/or financial data for them.

our empirical analysis).[7] All key variables are defined in the Appendix. Notably, all the data in our sample are end of calendar-year data.

In addition, for the 121 unifying firm we collect data on the vote of the largest shareholder from the end of calendar year -2 to the end of calendar year +7 (where year 0 is the unification calendar year); and for the 190 non-unifying (control) firms we compile data on the largest shareholder holdings in 1994-2012. Faccio and Lang (2002) suggest the largest shareholder holdings as the metric for control group holdings in Europe. The data sources are firms' annual reports, Porssitieto by Gunhard Kock (for Finland), Hoppenstedt Aktienfuhrer (for Germany), Sundin and Sundqvist (for Sweden), WorldScope and Lexis-Nexis.

4. Corporate Governance and Valuation Gains upon Unification

4.1. General Descriptive Statistics on Unifying and Non-unifying Firms

Table 1 presents some descriptive statistics for our 121 unifying and 190 non-unifying (control) firms' sample. On the eve of the unification, unifying firms appear somewhat smaller and less profitable, yet of higher relative market valuation (Tobin's Q) than non-unifying firms. On average, unifying firms' controlling shareholders appear to have lower holdings – 46.9% of vote, compared to 52.3% of vote in non-unifying firms. Perhaps most interesting, the dual class share unification diluted the controlling shareholders vote by about a fifth - at the end of the unification year the controlling shareholders vote was 36.9%, on average.

(Insert Table 1 about here)

[7] Recently, Dybvig and Warachka (2015) have criticized the use of Tobin's Q as a measure of firm performance, and suggested two new measures of operating efficiency. However, Q remains, in our opinion, a simple and natural relative valuation indicator, and it facilitates comparison of our findings to those in previous studies in the area; thus we employ it in this study.

Panel B of Table 1 provides some demographic information on the unifying firms. Unification rates are relatively high between 1998 and 2001, with a peak of 18 unifications on 2001. Our sample comprises 42 German, 35 Nordic, 30 Swiss and 14 Italian unifications.

4.2. The Vote Loss of Controlling Shareholders

Table 2 and Figure 1 describe the mean vote of the largest shareholder from two years before to seven years after the unification year (year 0), for both unifying and non-unifying firms. The methodology employed follows closely Lauterbach and Yafeh (2011). Notably, because of our initial requirement for seven years post unification data (similar to Lauterbach and Yafeh, 2011), sample size shrinks to 84 unifications in 1996-2005.

(Insert Table 2 and Figure 1 about here)

Lauterbach and Yafeh (2011) who studied "forced" by law unifications in Israel, observe: 1) a pre-unification increase in vote of controlling shareholders (ex-ante preparation for their unification-induced vote dilution); and 2) a post-unification gradual yet partial "recovery" in the voting power of controlling shareholders. In contrast, in our "voluntary" European unifications, such phenomena are not observed. On average, in Table 2, controlling shareholders vote did not increase prior to the unification, and controlling shareholders' vote loss persists, i.e., is not reversed in the post-unification years.

The lack of a post-unification reversal on average in our European unifications sample is not surprising given the voluntary nature of these unifications. In any case, the absence of vote reversal is an important finding of our study as it illustrates the difference between "regulatory forced" unifications and "voluntary" unifications. Evidently, persuading firms to "voluntary" improve their corporate governance yields more persistent governance improvements than forcing them to do so.

Panel B of Table 2 further analyzes the vote of controlling shareholders in unifying firms. Two years before the unification, the mean vote of the largest shareholder in unifying firms is 4.4% lower than that of non-unifying firms, and seven years after the unification it is 17.4% lower. This 13% widening of the gap suggests that our best estimate of the eventual unification-induced vote loss of controlling shareholders in unifying firms is about 13%. Formal t-tests clarify that the mean 13% long-term vote loss of controlling shareholders is highly statistically significant, and that controlling shareholders eventually lost vote in about 68% of the unifying firms.

The demise of disproportionality (wedge between ownership and vote proportions) and the eventual considerable vote loss of controlling shareholders suggest a non-trivial corporate governance improvement in unifying firms. The next subsection examines whether or not there is a parallel increase in firm valuation.

4.3. Relative Valuation (Tobin's Q) Effects of Unifications

Table 3 and Figure 2 portray the evolution of unifying and non-unifying firms' industry-adjusted mean Tobin's Q from the end of year -2 to the end of year +7 relative to the unification year (year 0). Industry adjustment is based on two-digits SIC code, and before the industry-adjustment, Tobin's Q is winsorized each calendar year at the 5^{th} and 95^{th} percentile, using the whole universe of dual- and single-class firms in our seven sample countries.

In Figure 2 we observe that unifying firms had higher relative valuations (Q) than non-unifying firms, and that their relative valuation advantage increased by year +7, with a temporary peak on year +1. (Interestingly, a similar peak in year 1 appears also in Figure 5 of Lauterbach and Yafeh, 2011.) To sharpen the Q picture, we offer Figure 3 that depicts the difference between unifying and non-unifying firms' Qs. On year end -2 unifying firms have a 0.08 higher mean Q than non-unifying firms; on year end +1 the gap widens to 0.38; and on

year end +7 it sets on 0.23. It appears that unification increases the relative market valuation of the firm by about 0.15.

(Insert Table 3, Figure 2 and Figure 3 about here)

The relative valuation gain of unifying firms appears economically significant. However, the Q relative advance of 0.15 is only weakly statistically significant (p-value of 0.054 in a one-sided test) – see Table 3 Panel B. We employ a one-sided test as the corporate governance improvement hypothesis suggests that the alternative hypothesis is that Tobin's Q increases.

One way to strengthen the statistical inference power is to increase sample size. In Figures 1 and 3 we observe that the unification impact on vote and Q stabilize after year 3 (the lines level off). It appears that for voluntary unification three years post-unification period is sufficient for assessing the long-term impact.

Relaxing the post-unification period requirements to three years increases our sample size to 121 unification (in 1996-2009) and has almost no impact on our overall period total-effect estimates. For example, the average vote loss of unifying firms controlling shareholders in years -2 through +3 is 11.2% in our extended sample (vs. 13% in Panel B of Table 2), and the mean relative Q gain of controlling shareholders in years -2 through +3 is 0.165 in our extended sample (compared to 0.152 in Panel B of Table 3). Nevertheless, as expected, increasing the sample sharpens inference power, and the mean long-term relative Q gain of unifying firms becomes statistically significant at the 5% level (p-value of 0.012 compared to a p-value of 0.054 in the 84 unifications sample). Because of this increased power we employ the 121 unification sample henceforth.

Bennedsen and Nielsen (2010) estimate that dual class structures depress Q by 0.25 compared to firms with one share one vote. Thus, our estimated 0.16 long term Q gain in

unifying firms is modest and might suggest that dual class share unifications only partly resolve the unique agency problems of dual class firms. Interestingly, the initial (year +1) relative valuation (Q) gain of 0.25 of our 121 unifying firm sample almost matches the Q discount that Bennedsen and Nielsen (2010) document in European dual class firms. Thus, perhaps the initial (year 1) overshooting of average Q in unifying firms is due to an initial hope that the unifications would resolve all unique agency problems of dual class firms, a hope that in the long-term was proven as over-optimistic.

5. Tests of the Refined Governance Improvement and Financial Tunneling Hypotheses

The main innovations of the study are its two hypotheses: the refined corporate governance improvement hypothesis and the financial tunneling hypothesis.

5.1. Tests of the Financial Tunneling Hypothesis

5.1.1. Exploring the overreaction surrounding unifications

The tunneling opportunity arises because of the overshooting in market valuation in the vicinity of unifications. In Figure 2, the mean Q shows a clear pattern. It increased gradually from year end -2 onwards, reaching a pointed peak at year end +1; then it declines in years 2 and 3, after which it stabilizes. The sharp peak on year +1 suggests a market valuation overshooting, possibly triggered by public over-enthusiasm about the firm's voluntary corporate governance reform.

Table 4 examines the short-term valuation peak. Panel A reports DeltaQ(-1,1) - the increase in unifying firms' industry-adjusted Q between the end of year -2 and the end of year +1 minus the corresponding contemporaneous change in non-unifying firms industry-

adjusted Q. Unifying firms' short-term valuation increase, DeltaQ(-1,1), is 0.25 on average, economically impressive and statistically significant at the 1% level.

(Insert Table 4 about here)

Panel B of Table 4 examines our proposition that this peak is a result of overreaction. In a rational world, overreaction should be moderated and vanish over time as investors learn about their mistakes. Such a phenomenon is indeed manifested in Panel B results. In the first subperiod (1996-1999) the mean DeltaQ(-1,1) is a relatively large 0.39, and it is largely reversed in years 2-7, as evidenced by the mean DeltaQ(2,3) of -0.27. In contrast, in the second subperiod (2000-2002), the mean DeltaQ(-1,1) is 0.19 while the mean DeltaQ(2,3) is -0.03, i.e., in the second subperiod the overshooting and reversal are rather minute. In the third subperiod (2003-2005) we observe an initial under-reaction with a mean DeltaQ(-1,1) of 0.13 and a mean DeltaQ(2,3) of 0.11. Finally, in 2006-2009 there is almost no initial overshooting as the mean DeltaQ(2,3) is -0.01 only.

The lack of value overshooting on average from the second subperiod (year 2000) onwards suggests that in the earliest subperiod investors misconceived voluntary unifications to be much bigger corporate governance reforms than they really were, hence they overreacted to unifications. It is also important to note that despite the lack of overshooting on average in the later subperiods, it is still probable that some specific firms did over-react to unifications even after year 2000.

5.1.2. Long-term valuation effects of possible financial tunneling attempts

Any overreaction in firm value tempts controlling shareholders to exploit it. Controlling shareholders, with their superior understanding of the exact meaning of the corporate governance reform (unification) they (controlling shareholders) initiated, might perceive the public overreaction as an opportunity to sell or dilute their holdings at inflated

prices. If controlling shareholders dilute their holdings, there could be a public-investor disappointment (or disillusion), emanating from the realization that the agency problems of firm's controlling shareholders have not disappeared following the unification. Such investors' disillusion should lower the unification-induced long-term valuation gains. In sum, the financial tunneling hypothesis proposes that in firms where controlling shareholder sold part or all of their holdings in the post-unification period, the overall period (years -1 through 3) valuation gains and the post unification valuation gains (years 2 and 3) would be low relative to the corresponding valuation gains of firms where controlling shareholders did not sell shares.

Table 5 documents the valuation gains of unifying firms for the overall sample and for two complementary subsamples: firms where controlling shareholders sold part or all of their shares in the unification year or the calendar year that followed it (marked by SOLD) and firms where they did not sell any shares (KEPT) during that time window. We look for selling activity by controlling shareholders only on years 0 and 1 because these are the years adjacent to the unification and any selling activity in these years is probably more strongly related to (or triggered by) the response to the unification itself.

In Table 5 the valuation gains of unifying firms are presented in three windows. First, DeltaQ(-1,1), the change in unifying firms industry-adjusted Tobin's Q (in year -1 through year +1 relative to the unification year) minus the corresponding contemporaneous change in the industry-adjusted Tobin's Q of non-unifying firms.[8] This is a measure of the initial response to unification, including the possible initial overreaction. Similarly, DeltaQ(2,3) represents the overreaction correction period, and DeltaQ(-1,3) estimates the overall long-term valuation response.

[8] Note that DeltaQ (-1,1) covers a three years period including the calendar year preceding the unification year, the unification year (year 0), and the year that followed it.

(Insert Table 5 and Figure 4 about here)

In Panel A we observe different patterns of response for KEPT and SOLD firms. KEPT firms have a positive initial response to unification, and they continue to appreciate in the "correction" period as well. Their overall period mean Delta(-1,3) is positive (0.286) and statistically significant at the 1% level. In contrast, SOLD firms have a relatively high mean initial response (that is almost double that of KEPT firms), yet in the correction period, after controlling shareholders dilute their holdings, almost all of the initial gains evaporate. The overall period valuation gains of SOLD unifying firms are close to nil on average and are statistically insignificant. The strikingly different valuation response patterns of SOLD and KEPT firms are clearly depicted on Figure 4.

The evidence in Panel A is consistent with the financial tunneling hypothesis, as SOLD firms suffer from severe valuation declines in the "correction" period and have lower overall-period responses (compared to KEPT firms). Formal tests of the financial tunneling hypothesis are summarized at the bottom of Panel A which reports p-values for the conservative H0 hypothesis that the mean valuation gain of SOLD firms equals the mean valuation gains of KEPT firms. (The alternative hypothesis is the financial tunneling hypothesis, i.e. that the mean valuation gain of SOLD firms is lower.) The tests appear to support the financial tunneling hypothesis. Consistent with the financial tunneling hypothesis, both DeltaQ(2,3) and DeltaQ(-1,3) of KEPT firms are significantly higher than those of SOLD firms (at the 5% significance level). Focusing on SOLD firms, it appears that the market lost trust in these companies. Hence, almost all of SOLD firms' unification gains dissipated.

Panel B narrows the view to SOLD firms, differentiating between firms where controlling shareholders sold all their shares (SOLD-all firms) and firms where controlling shareholders just diluted their holdings (SOLD-part firms). Interestingly, in SOLD-part firms

we do not observe the initial over-reaction and the subsequent reversal. Nevertheless, the mean overall period Q gains of SOLD-part firms remains statistically insignificant and economically small (0.07) relative to the parallel mean Q gains of KEPT firms (0.29 - see Panel A). This suggests that whenever controlling shareholders dilute holdings, their selling casts a shadow on firm's market value.

The SOLD-all subsample in Panel B demonstrates a sharp inverted-V pattern. The mean initial Q gain is large (0.49) and the mean reversal in Q (-0.50) is equally huge. Overall, in firms where controlling shareholders exited their firms (SOLD-all to new controlling shareholders) the mean firm valuation slightly drops. It could be asked why does firm valuation drop in the "correction" period (years 2 and 3) given that the "exploitive" selling controlling shareholders exit the firm. This could manifest market's suspicion (realization?) that the new controlling shareholders are going to extract large private benefits from the firm they bought. Indeed, if the new controlling shareholders bought the firm at peak prices (i.e., were exploited by old controlling shareholders) they may try to justify the high price they paid by consuming relatively high private benefits in the future.

The evidence consistent with the financial tunneling hypothesis in our study provides a perspective on dual class firms' behavior. Jordan et al. (2014) find higher total payout yields (summing dividends and share repurchases) in dual class firms, casting doubt on the hypothesis that dual class firms expropriate shareholders more than single class firms. Our evidence suggests that when a "one shot" financial tunneling opportunity exists, some controlling shareholders may not be able to resist it.

Finally, we acknowledge that other potential explanations of the findings are possible. All we have shown in this section is that financial tunneling might also qualify as a plausible interpretation of our findings. Our next goal is to address the more important hypothesis of

this study – the hypothesis that unifications are corporate governance improvements that enhance company market value. This hypothesis failed to gain support in previous research.

5.2. Tests of the Refined Corporate Governance Improvement Hypothesis

Table 5 affords examination of our refined corporate governance improvement hypothesis. The subsample of KEPT firms (= unifying firms where controlling shareholders did not dilute their holdings) is presumably clean of financial tunneling acts. Thus, in KEPT firms we should observe the true valuation impact of unifications per-se, and according to the refined corporate governance hypothesis this valuation impact would be positive.

The KEPT firms' evidence in Panel A of Table 5 supports the corporate governance improvement hypothesis. In KEPT firms the overall period mean increase in relative Q is economically impressive (about 0.29) and statistically significant at the 1% level. Further, KEPT firms appreciate on average both in the initial period and in the "correction" period, i.e., market appears to exhibit no remorse at the KEPT firms' initial appreciation.

Overall, the KEPT firms mean Q appreciation of 0.29 resembles the 0.25 mean Q discount of European dual class share companies (Bennedsen and Nielsen., 2010). Hence, the impression is that dual class firms that voluntary gave up their dual class equity structure (and where there were no confounding events such as selling by controlling shareholders), recovered their entire dual class discount.

6. Further Evidence and Alternative Explanations

6.1. Results Using Propensity Score Matching

Recent dual class share research (Gompers et al., 2010, and Jordan et al., 2014, for example) prefers to use as controls propensity-score-matched firms. This should alleviate endogeneity concerns. Unifying firms might be a special group of firms with unique traits

that are, in general, different than the main characteristics of non-unifying firms. Thus, instead of comparing a unifying firm to the average non-unifying dual class firm, as we did and report thus far, we may compare the unifying firm to a similar dual class firm that did not unify.To create a match for a unifying firm, we use the following Maury and Pajuste (2011) empirical probit model, estimating the propensity of a dual class firm to unify its shares (*Unify$_i$=1* below):

$$Prob(Unify_i=1) = \alpha_0 + \beta_1 \cdot ControlMinusOwnership_i + \beta_2 \cdot Cross\text{-}listing_i + \beta_2 \cdot FinancialInvestor_i + CountryDummies + \mu_i .$$

This is model (1) specification from Table 5 of Maury and Pajuste (2011), which we re-estimate for each year separately. *ControlMinusOwnership* is the percentage of voting rights held by the largest shareholder minus the percentage of cash flow rights held by the largest shareholder at the start of the year; *Cross-listing* is a dummy variable that equals one if the firm has American Depositary Receipts and zero otherwise; and *Financialinvestor* is a dummy variable that equals one if the largest shareholder at the start of the year was a financial investor and zero otherwise. We use country dummies for Germany, Switzerland and Italy, keeping Nordic countries as a reference group. Previous research shows that a higher wedge between control and ownership rights significantly reduces the likelihood of unification, while cross-listing and the presence of a financial investor increase the likelihood of unification.

Our propensity score methodology identifies a non-unifying dual class share firm that according to the above probit model has a similar propensity to unify in a particular year as the unifying firm. Comparing a unifying firm long-term valuation changes to those of a "practically similar" non-unifying dual class firm, should afford a clear view at the pure long-term valuation effects due to the unification per-se.

Table 6 reports tests of the refined corporate governance and the financial tunneling hypotheses, using the propensity score matching methodology. Table 6 is basically a replication of Table 5 tests with the propensity score matched control firms. For 17 unifying firms we lack data necessary for the probit model.[9] Thus, Table 6 examines only 104 unifying firms.

(Insert Table 6 about here)

The KEPT firms' evidence based on propensity score matching supports our corporate governance improvement hypothesis. In Panel A of Table 6, KEPT firms' overall period mean increase in relative Q is economically impressive (about 0.30) and statistically significant at the 5% level. Notably, the relative Q increase in Tables 5 and 6 are almost identical (0.29 and 0.30, respectively). Thus, both methodologies echo strong support of the proposition that "pure" dual share class unifications are accompanied by positive revaluations in firm market value.

The evidence based on propensity score matching is somewhat less favorable for the financial tunneling hypothesis. The results documented in Panel A and B of Table 6 are in line with our previous results in Table 5: 1) SOLD firms exhibit lower DeltaQ (-1,3) than KEPT firms, 2) SOLD firms valuations deteriorate in years 2 and 3 (negative DeltaQ(2,3)), and 3) Sold-all firms have lower DeltaQ(-1,3) than Sold-part firms. However, all these differences are no longer statistically significant.

The loss of statistical significance in tests of the financial tunneling hypothesis is probably due to the increase in the control group variance. In the propensity score methodology the control group for each unifying firm is one non-unifying firm (the propensity score matched firm), whereas in our basic (Table 5) methodology the

[9] In all these 17 cases we miss data on the percentage cash flow rights held by the largest shareholder, i.e., in those firms only the percentage of voting rights is disclosed.

corresponding control group is the equally-weighted portfolio of all non-unifying firms, which is clearly of lower volatility. Our chosen empirical methodology sharpens inference power, and evidently scored statistically significant results even regarding the financial tunneling hypothesis. The second reason for our methodological choice is our reluctance to exclude observations - with propensity score matching we lose 17 out of 121 observations.

6.2. The Rational Trading Alternative Hypothesis

One can argue against the financial tunneling hypothesis that selling shares and diluting holdings at peak prices is a natural act of a rational trader, and that all our evidence suggests is that controlling shareholders are rational traders. Controlling shareholders should not be blamed. They were not eluded by the unification hype, and like any other cold-minded and rational investor sold shares at the unjustified peak prices adjacent to the unifications. This is quite a plausible alternative.

However, the fact that the long-term valuation response, DeltaQ(-1,3), of KEPT firms is positive and significantly higher than that of SOLD firms appears to undermine the rational trading hypothesis. In the long-run, overreactions disappear. Hence, under the rational selling alternative hypothesis, the overall period valuation gains of SOLD and KEPT firms should be equal. The evidence of lower long-term overall response of SOLD firms (compared to KEPT firms) appears more consistent with the financial tunneling hypothesis.

The above criticism of the rational trading hypothesis is based on the lower DeltaQ(-1,3) of SOLD firms. However, if SOLD firms profitability is expected to deteriorate past year 3, while KEPT firms profitability improves, stays put or does not worsen to the same extent after year 3, then naturally and rationally DeltaQ(-1,3) of KEPT firms should be higher than that of SOLD firms. Thus, profitability analysis is warranted before any conclusion can be reached.

Figure 5 depicts the average DeltaROA(-2,7) of KEPT and SOLD firms, where DeltaROA(x,y) is the change in a unifying firm industry-adjusted ROA from year x to year y relative to the unification year, minus the contemporaneous change of industry-adjusted ROA in non-unifying firms. The graph is based on 82 unifying firms because for only 84 unifying firms we have Tobin's Q data up to year +7 (see Tables 2 and 3), and because for two of these firms we lack ROA data in years +6 and +7.

(Insert Figure 5 about here)

In Figure 5 we observe that the relative industry adjusted ROA of SOLD firms plunges past year 3, while the relative industry adjusted ROA of KEPT firms is on the rise past year 3. Thus, the lower DeltaQ(-1,3) of SOLD firms can partially emanate from the dimmer future profitability of SOLD firms (in comparison to KEPT firms). The exact contribution of the difference in future profitability prospects to the DeltaQ differences between SOLD and KEPT firms is difficult to measure. Regressions of DeltaQ(-1,3) on DeltaROA(-1,7) or DeltaROA(3,7) yield highly insignificant coefficients, and leave us pondering about the precise effect of future profitability on Q. Given this fact and going back to Figure 5, the conclusion is that we cannot reject the rational trading hypothesis - the lower overall-period valuation gains of SOLD firms may be due to their inferior and deteriorating future prospects.

Surprisingly, the ROA evidence in Figure 5 appears also consistent with the financial tunneling hypothesis. In years 0 and 1, SOLD firms' controlling shareholders might have known about the poor long-term prospects of their firms; thus, they utilized this inside information (and the unification hype) to dilute their holdings. Similarly, KEPT firms' controlling shareholders might have known about the improving prospects of their firms; thus, they refrained from selling.

In sum, it is difficult to rule out either the rational trading motive or the financial tunneling motive when interpreting controlling shareholders' dilution or non-dilution choices. In reality, rational trading and financial tunneling might co-exist. Overreaction and rational trading might be the preconditions for financial tunneling. Financial tunneling needs a disguise, and over-reaction and rational trading provide a legitimate disguise (reason to trade/dilute). It is difficult to disentangle rational trading and financial tunneling, and because of this difficulty financial tunneling persists.

6.3. The Ex-post Compensation Alternative Hypothesis

Voluntary dual class share unifications favor the inferior-vote shareholders who obtain, upon unification, the same rights as the former superior-vote shareholders. In almost all cases, superior-vote shareholders are not compensated for the lost voting power. Thus, Bigelli et al. (2011) argue that dual class unification expropriate wealth from shareholders whose main holdings are in superior-vote shares.

Typically, controlling shareholders concentrate their holdings on superior-vote shares. Thus, the initial impression is that controlling shareholders lose wealth upon unification. Now, if controlling shareholders lose wealth upon unification, then their selling of shares at the inflated post-unification prices may be considered as a clever ex-post settling of the account. Controlling shareholders could not be directly compensated in the voluntary unification process. Thus, they exploited the high post-unification prices to recoup their losses. This ex-post settling up does not represent financial tunneling, but rather a practical way of doing things.

This line of argument is probably incorrect. First, it is clear that controlling shareholders have to agree to the terms of the unification and practically initiate unifications.

Thus, it is unlikely that they "volunteer" to lose upfront or rely on uncertain future selling opportunities to recoup their losses. [10]

Furthermore, previous evidence such as Dittmann and Ulbricht (2007) has shown positive share price revaluations for both inferior- and superior-vote shares upon unification announcement. Hence, it is possible that upon unifications superior-vote shareholders also gain some wealth.

To examine this "everybody wins" contention we calculate the net of market return of superior vote shareholders from the beginning of year -1 to the end of year 1, where calendar year 0 is the unification year. Note that the superior (one vote one share) shares persist after the unification, hence there is no problem in collecting their return data. Our return sample comprises 94 unifying firms only because in the remaining 27 firms the superior vote shares were not listed prior to the unification.

We find that all share classes gain on average positive net of market returns in years -1 through 1. The mean net of market cumulative return of the superior-vote shares in the three-years (-1 through 1) period is 48.2% (p-value of 0.005): the 52 KEPT firms achieve a mean net of market cumulative return of 28.2% (p-value of 0.07), and the 42 SOLD firms score a mean cumulative net of market return of 73.0% (p-value of 0.02). Clearly, on average, in our sample there was no need for controlling shareholders to recoup losses. Unification increased their wealth even without selling at the peak post-unification prices. Selling at these peak prices appears like a financial tunneling or a rational trading act by controlling shareholders.

[10] Planning ahead the selling of their shares at inflated prices appears to us problematic also because it can lead to a conclusion (accusation?) that financial tunneling was pre-meditated, a proposition we do not make and cannot test.

7. Summary and Conclusions

Dual-class share unifications offer corporate governance improvements - they eliminate the wedge between voting and equity rights and typically reduce controlling shareholders' voting power. Thus, if corporate governance improvements are valuable, firm's market value should increase. Previous studies failed to demonstrate significant long-term valuation gains of unifications. Thus, our finding that voluntary dual-class share unifications significantly increase firms' long-term market valuation appears important.

We overcome the weak results of previous research by filtering out cases where the positive valuation effects of unification are mixed with some negative effects. Some unifications are accompanied by public investors' enthusiasm and lead to considerable firm valuation overreaction in the vicinity of the unification. Such overreactions might tempt some controlling shareholders to dilute their holdings at peak prices. The holdings' dilutions at peak prices may be viewed as acts of financial tunneling, whereby controlling shareholders exploit their superior (private) information about their firms to sell shares at inflated prices.

We examine the financial tunneling hypothesis and find that it is consistent with the data. However, it is important to note that we cannot rule out the possibility that part or all of the controlling shareholders' holding dilutions were innocuous rational trading acts. The inflated prices drove controlling shareholders to sell, just like any other rational cold-minded investor would do, i.e., controlling shareholders did not consider their private information on the future prospects of the firms before their dilutions. In fact, the possibility of rational trading is the perfect disguise for private information trading (financial tunneling). Without rational trading, financial tunneling would be too obvious.

Another potential perspective offered by our "financial tunneling" evidence is that controlling shareholders might not resist "one-shot" opportunities to financially tunnel. Prior

evidence, such as Jordan et al. (2014), casts doubt on the proposition that dual class firms excel in routinely expropriating public shareholders. We suggest and offer evidence consistent with the proposition that one shot tunneling is likely.

In the purged sample, consisting only of unifying firms where controlling shareholders did not dilute their holdings in the vicinity of the unification, we find economically and statistically significant positive long-term valuation gains. Apparently, dual class share unifications per-se have a positive effect on long-term firm valuation. In fact, when we examine the overall sample of unifying firms (before excluding firms where controlling shareholders diluted their holdings), we also find a positive long-term valuation gain. This suggests that in general, and despite of the suspected financial tunneling activity, voluntary dual class share unifications are beneficial for the public and should be encouraged.

As usual, we are far from exhausting the research questions. Replication of our results in non-European samples is important, and further examination of our financial tunneling hypothesis is warranted. Hence, the ritual call for further research is definitely reiterated.

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Appendix. Definition of the main variables in the empirical analysis

Tobin's Q is the book value of assets plus the market value of equity minus the book value of equity, all divided by the book value of assets. Tobin's Q is winsorized each calendar year at the 5^{th} and 95^{th} percentile, using the whole universe of dual- and single-class firms in the seven sample countries. Source: Datastream.

Industry adjusted Q is calculated as the difference between firm's Tobin's Q and the mean single-class firms' Tobin's Q in the same industry (using the two-digits SIC code).

DeltaQ(y,z) is the change in unifying firms industry-adjusted Q from the start of calendar year y to the end of calendar year z relative to the unification year minus the corresponding contemporaneous change in non-unifying firms industry-adjusted Q. The calendar year of the unification is coded as year 0.

SOLD/KEPT subsamples. Firms where controlling shareholders sold part or all of their shares in the unification year or the calendar year that followed it are marked by SOLD; and firms where they did not sell any shares are marked by KEPT. Two firms where controlling shareholders did not sell any shares but a seasoned equity offering (in years 0 or 1) diluted their holdings by more than 1 percent are also defined as SOLD.

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Table 1
Sample descriptive statistics

In Panel A, the sample statistics of unifying firms are calculated at the end of the calendar year preceding the unification, except for post-unification Q and voting power, that are calculated at the end of the unification year. For the control sample of non-unifying firms, we first compute yearly means and medians, and then derive weighted statistics, where the weights correspond to the percent of unifications in each year. Tobin's Q is the book value of assets minus the book value of equity plus the market value of equity, all divided by the book value of assets. Voting rights before unification are the percent of total voting rights held by the largest shareholder at end of the year preceding the unification (or year -2 if year -1 data are missing). Voting rights after unification are the percent of total voting rights held by the largest shareholder at the end of the unification year. Loss of voting power is the difference between the voting rights before and after the unification. Panel B reports the frequency of unifications by country and year.

Panel A: Descriptive statistics of unifying and non-unifying firms

	Unifying firms (n=121)		Non-unifying firms (n=190)	
	Mean	Median	Mean	Median
Firm characteristics				
Total assets (in million USD)	1 888	583	5 204	472
% Return on assets (ROA)	3.62	4.95	5.02	5.26
Tobin's Q before unification	1.63	1.24	1.47	1.17
Tobin's Q after unification	1.66	1.31	1.44	1.15
Controlling shareholder				
Voting rights before unification (year -1)	46.9%	48.9%	52.3%	51.3%
Voting rights after unification (year 0)	36.9%	30.4%	52.2%	51.4%
Loss of voting power (-1,0)	10.0%	6.6%		

Panel B: Share unifications by year and country

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Den			1		1	1					2	1	1	1	8
Fin		1	1	3						1	1	1	2	2	12
Ger	5	1	6	7	6	8	2	1	1	3			2		42
Ita		1	1	1	2	3	3	1	1			1			14
Nor				1	1	2									4
Swe			1		2	2	1	2	1	1			1		11
Swi	1	3	6	2	3	2	2	5	2	3		1			30
Tot	6	6	16	14	15	18	8	9	5	8	3	4	6	3	121

Table 2
Controlling shareholder's voting power before and after share unifications

The numbers in the table are computed as follows. First, we compute for the control sample (190 non-unifying firms) the average voting rights of the controlling shareholders (in percent) in each of the years 1994-2012. Then, each specific unifying firm is compared with the corresponding (same calendar year) average control sample statistic. For example, if company Z unified its dual class shares in 1998, then: 1) 1998 is defined as year zero; 2) data on firm *Z*'s controlling shareholders' voting rights are collected from 1996 (year -2) through 2006 (year 7); and 3) a corresponding control vector of 10 observations is constructed. In this control vector, against (or for comparison with) firm *Z*'s year -2 percentage vote, we put the average control firms' percentage vote in 1996, etc…

Panel A: Mean voting rights of the controlling shareholder relative to the unification year

	Year relative to the unification									
	-2	-1	0	1	2	3	4	5	6	7
The mean % vote of controlling shareholder in 84 unifying firms	48.2	46.4	35.3	33.3	33.1	35.3	35.9	35.4	35.0	34.4
The mean % vote of controlling shareholder in non-unifying firms (control sample)	52.7	52.4	52.2	52.1	52.0	52.0	51.9	51.8	51.8	51.8

Panel B: Long-term changes in relative voting power for 84 unifying firms

Mean difference in controlling shareholders' voting power between unifying and non-unifying firms before unification (end of year -2)[a]	-4.4%
Mean difference in controlling shareholders' voting power between unifying and non-unifying firms at the end of year +7	-17.4%
The eventual post-unification relative vote decrease of controlling shareholders in unifying firms	13.0%
p-value of the above post-unification relative vote change	0.000
Proportion of unifying firms with a negative relative change in controlling shareholders' voting power	67.9%
p-value of above proportion (null: proportion is 0.5)	0.001

[a] For three firms we use year -1 data because year -2 data are unavailable.

Table 3
Tobin's Q around dual class share unifications

Tobin's Q is the book value of assets plus the market value of equity minus the book value of equity, all divided by the book value of assets. Industry adjusted Q is calculated as the difference between firm's Tobin's Q and the mean single-class firms' Tobin's Q in the same industry (using the two-digits SIC code).

The following procedure is used for constructing the table. First, we compute for the control sample (190 non-unifying firms) the average industry-adjusted Tobin's Q in each of the years 1994-2009. Then, each unifying firm industry-adjusted Q is compared with the corresponding (same calendar year) average industry-adjusted Tobin's Q of the control sample. For example, if company *Z* unified its dual class shares in 1998, then: 1) 1998 is defined as year 0; 2) firm *Z*'s Tobin's Q is collected from 1996 (year -2) through 2005 (year +7); and 3) a corresponding control vector of 10 observations is constructed. In this control vector, against (or for comparison with) firm *Z*'s year -2 industry-adjusted Tobin's Q, we put the average control sample industry-adjusted Q in 1996, etc…

Panel A: Mean industry-adjusted Tobin's Q surrounding the unification year

	Year relative to the unification									
	-2	-1	0	1	2	3	4	5	6	7
Mean Industry-adjusted Tobin's Q of 84 unifying firms	-0.08	0.08	0.13	0.21	0.15	0.12	0.14	0.13	0.14	0.11
Mean Industry-adjusted Tobin's Q of non-unifying firms (control sample)	-0.16	-0.18	-0.18	-0.17	-0.17	-0.15	-0.15	-0.13	-0.14	-0.12

Panel B: Long-term changes in relative industry-adjusted Tobin's Q for 84 unifying firms

Mean difference in industry-adjusted Tobin's Q between unifying and non-unifying firms before the unification (end of year -2)	0.084
Mean difference in industry-adjusted Tobin's Q between unifying and non-unifying firms at the end of year +7	0.236
Increase in the relative industry-adjusted Tobin's Q between pre-unification and year 7	0.152
p-value of the above relative industry-adjusted Tobin's Q increase	0.054
Proportion of unifying firms with a positive change in relative industry-adjusted Tobin's Q	58.3%
p-value of above proportion (null: proportion is 0.5)	0.078

Table 4
Short-term overreaction in public response to unifications

Tobin's Q is the book value of assets plus the market value of equity minus the book value of equity, all divided by the book value of assets. Industry adjusted Q is calculated as the difference between firm's Tobin's Q and the mean single-class firms' Tobin's Q in the same industry (using the two-digits SIC code). DeltaQ(y,z) is the change in unifying firms industry-adjusted Q from the start of calendar year y to the end of calendar year z relative to the unification year minus the corresponding contemporaneous change in non-unifying firms' average industry-adjusted Q. The calendar year of the unification is coded as year 0. In Panel A p-values are for one-sided tests and in Panel B p-values are for two-sided tests.

Panel A: Short-term overreaction in relative industry-adjusted Tobin's Q for 121 unifying firms

Mean difference in industry-adjusted Tobin's Q between unifying and non-unifying firms before unification (end of year -2)	0.012
Mean difference in industry-adjusted Tobin's Q between unifying and non-unifying firms after unification (end of year 1)	0.260
Increase in the relative industry-adjusted Tobin's Q between pre-unification and year 1	0.248
p-value of the above post-unification relative industry-adjusted Tobin's Q increase	0.002
Proportion of unifying firms with a positive change in relative industry-adjusted Tobin's Q	58.7%
p-value of above proportion (null: proportion is 0.5)	0.034

Panel B: Moderation of the overreaction over time

		DeltaQ(-1,1)			DeltaQ(2,3)	
Unification date	# of obs.	Mean	Proportion positive	# of obs.	Mean	Proportion positive
1996-2009	121	0.248	58.7%	121	-0.083	47.9%
		(0.004)	(0.069)		(0.298)	(0.716)
1996-1999	42	0.391	64.3%	42	-0.269	45.2%
		(0.035)	(0.088)		(0.207)	(0.644)
2000-2002	41	0.193	61.0%	41	-0.026	48.8%
		(0.127)	(0.211)		(0.733)	(1.000)
2003-2005	22	0.129	40.9%	22	0.112	54.5%
		(0.393)	(0.523)		(0.211)	(0.832)
2006-2009	16	0.175	62.5%	16	-0.010	43.8%
		(0.437)	(0.454)		(0.810)	(0.804)

Table 5
Tests of the Financial Tunneling and Refined Governance Improvement Hypotheses

This table documents the valuation gains of unifying firms for the overall sample ("All") and for two subsamples: firms where controlling shareholders sold part or all of their shares in the unification year or in the year that followed it (marked by SOLD), and firms where they did not sell any shares during that period (marked by KEPT). Tobin's Q is the book value of assets plus the market value of equity minus the book value of equity, all divided by the book value of assets. Industry adjusted Q is calculated as the difference between firm's Tobin's Q and the mean single-class firms' Tobin's Q in the same industry (using the two-digits SIC code). DeltaQ(y,z) is the change in unifying firms industry-adjusted Q from the start of calendar year y to the end of calendar year z relative to the unification year minus the corresponding contemporaneous change in non-unifying firms industry-adjusted Q. The calendar year of the unification is coded as year 0. The p-values appear in parentheses, and are for two-sided tests, except for those on the last column and on the bottom row that are for one-sided tests.

Panel A: Relative industry-adjusted Tobin's Q response - SOLD vs. KEPT unifying firms

		Initial response DeltaQ(-1,1)	Correction period DeltaQ(2,3)	Overall period DeltaQ(-1,3)
	# of obs.	Mean	Mean	Mean
All firms	121	0.248	-0.083	0.165
		(0.004)	(0.298)	(0.012)
KEPT firms	65	0.197	0.089	0.286
		(0.036)	(0.277)	(0.003)
SOLD firms	56	0.307	-0.283	0.024
		(0.044)	(0.048)	(0.407)
KEPT>SOLD (p-value)		(0.740)	(0.010)	(0.035)

Panel B: Relative industry-adjusted Tobin's Q response – Sold-part vs. Sold-all unifying firms

		Initial response DeltaQ(-1,1)	Correction period DeltaQ(2,3)	Overall period DeltaQ(-1,3)
	# of obs.	Mean	Mean	Mean
SOLD firms	56	0.307	-0.283	0.024
		(0.044)	(0.048)	(0.407)
Sold-part	24	0.062	0.011	0.072
		(0.691)	(0.884)	(0.330)
Sold-all	32	0.491	-0.504	-0.013
		(0.041)	(0.039)	(0.460)
PART>ALL (p-value)		(0.922)	(0.035)	(0.338)

Table 6
Further Tests of the Financial Tunneling and Refined Governance Improvement Hypotheses Using Propensity-Score Matching (PSM)

The table replicates the tests in Table 5 using an alternative control-group mechanism. In this table the control firm for every unifying firm is its propensity-score matched non-unifying dual class firm – see section 6.1 for more details on the matching. The table reports the valuation gains of unifying firms for the overall sample ("All") and for two subsamples: firms where controlling shareholders sold part or all of their shares in the unification year or in the year that followed it (marked by SOLD), and firms where they did not sell any shares during that period (marked by KEPT). Tobin's Q is the book value of assets plus the market value of equity minus the book value of equity, all divided by the book value of assets. Industry adjusted Q is calculated as the difference between firm's Tobin's Q and the mean single-class firms' Tobin's Q in the same industry (using the two-digits SIC code). DeltaQ(y,z) is the change in a unifying firm industry-adjusted Q from the start of calendar year y to the end of calendar year z relative to the unification year minus the corresponding contemporaneous change in the propensity-score-matched non-unifying firm industry-adjusted Q. The calendar year of the unification is coded as year 0. The p-values appear in parentheses, and are for two-sided tests, except for those on the last column and on the bottom row that are for one-sided tests.

Panel A: PSM-based relative industry-adjusted Tobin's Q response - SOLD vs. KEPT unifying firms

		Initial response DeltaQ(-1,1)	Correction period DeltaQ(2,3)	Overall period DeltaQ(-1,3)
	# of obs.	Mean	Mean	Mean
All firms	104	0.310	-0.084	0.225
		(0.009)	(0.456)	(0.026)
KEPT firms	56	0.207	0.091	0.298
		(0.096)	(0.453)	(0.038)
SOLD firms	48	0.430	-0.290	0.140
		(0.044)	(0.149)	(0.407)
KEPT>SOLD (p-value)		(0.830)	(0.046)	(0.248)

Panel B: PSM-based relative industry-adjusted Tobin's Q response – Sold-part vs. Sold-all unifying firms

		Initial response DeltaQ(-1,1)	Correction period DeltaQ(2,3)	Overall period DeltaQ(-1,3)
	# of obs.	Mean	Mean	Mean
SOLD firms	48	0.430	-0.290	0.140
		(0.044)	(0.149)	(0.407)
Sold-part	21	0.059	0.129	0.187
		(0.746)	(0.159)	(0.145)
Sold-all	27	0.719	-0.615	0.104
		(0.042)	(0.077)	(0.342)
PART>ALL (p-value)		(0.942)	(0.030)	(0.399)

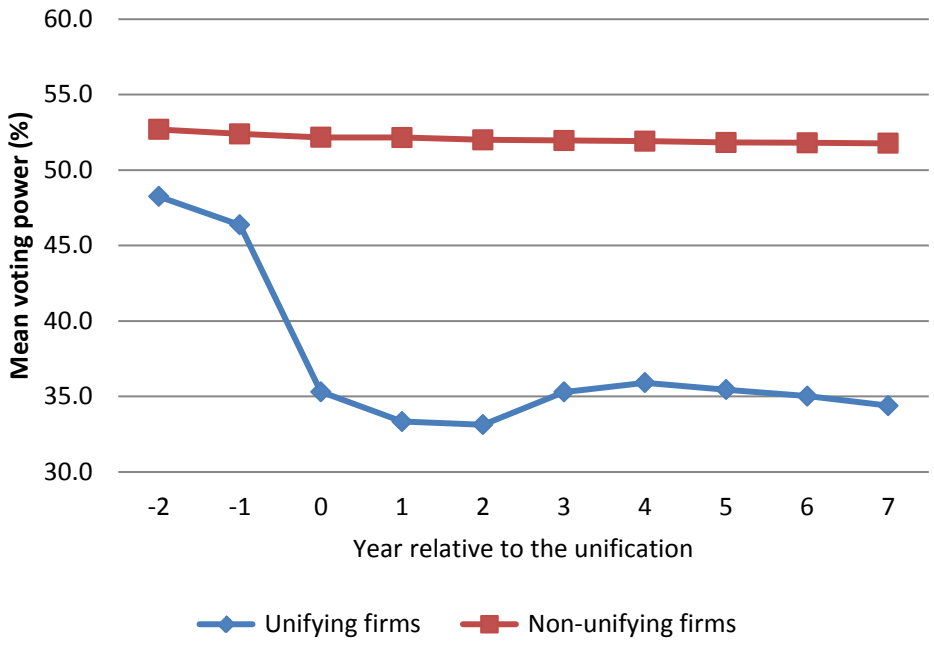


Fig.1. Mean voting power of the largest shareholder around the unification calendar year (year 0).

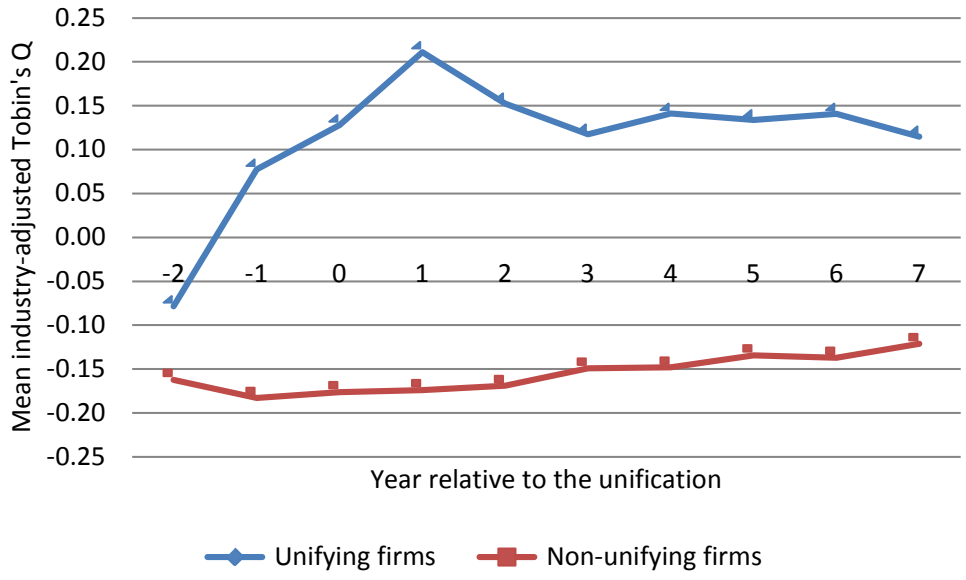


Fig.2. Mean industry-adjusted Tobin's Q around the unification calendar year (year 0).

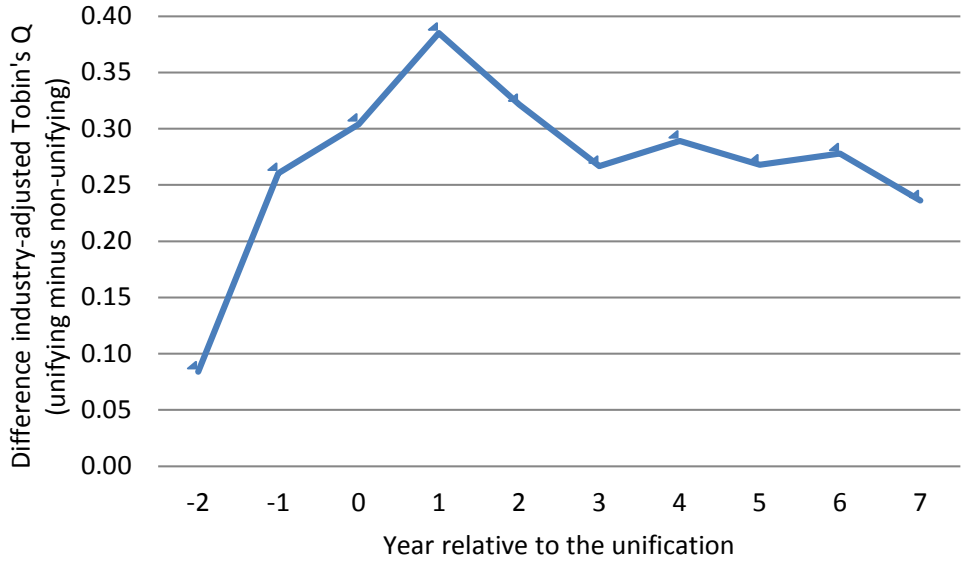


Fig.3. Mean difference in industry-adjusted Tobin's Q between unifying and non-unifying (control) firms around the unification calendar year (year 0).

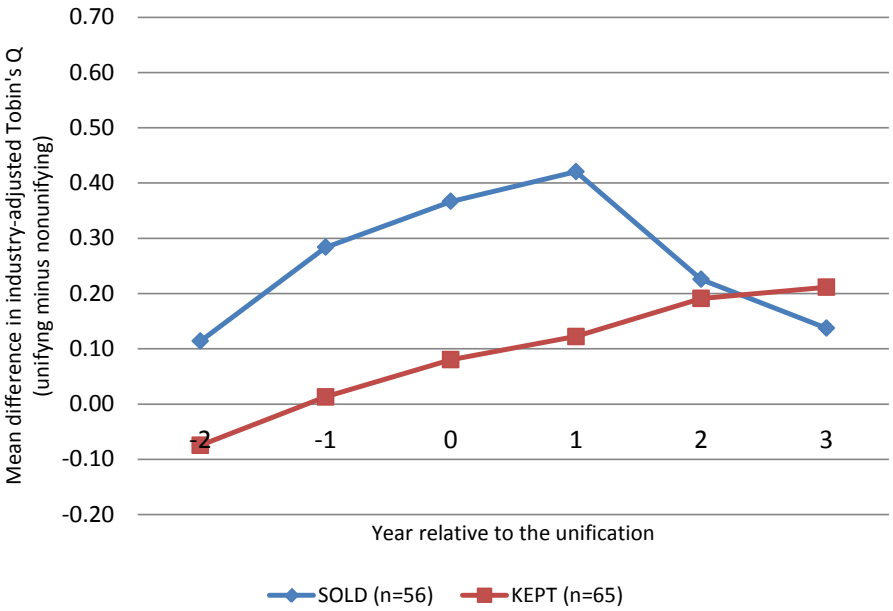


Fig.4. Mean difference in industry-adjusted Tobin's Q between unifying and non-unifying (control) firms by SOLD/KEPT category. Firms where controlling shareholders sold part or all of their shares in the unification year or in the year that followed are marked by SOLD, and firms where they did not sell any shares during that period are marked by KEPT.

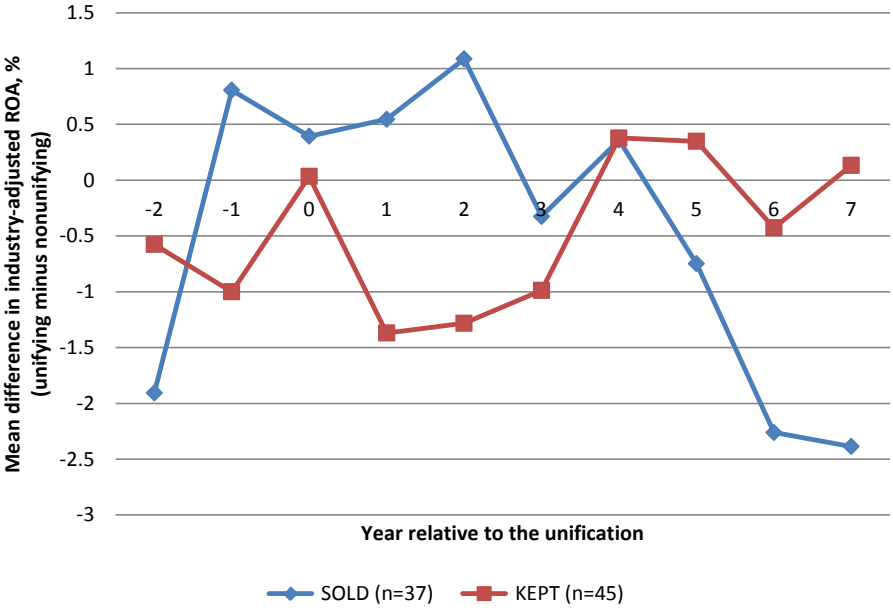


Fig. 5. Mean difference in industry-adjusted ROA between unifying and non-unifying (control) firms by SOLD/KEPT category. Firms where controlling shareholders sold part or all of their shares in the unification year or in the year that followed are marked by SOLD, and firms where they did not sell any shares during that period are marked by KEPT.