Separating the Impact of Dual Class Shares, Pyramids and Cross-ownership on Firm Value across Legal Regimes in Western Europe*

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Abstract: In a sample of 4,000+ publicly traded firms from 14 Western European countries, we analyze the use of instruments to separate ownership from control across legal regimes. First, we confirm the negative impact on firm value from disproportional ownership structures. Second, we show that dual class shares have a larger and more significant negative value effect than pyramids and cross holdings. Third, the impact of disproportionality and the underlying instruments is inversely related to the level of investor protection. Thus, we argue that dual class shares and pyramids may be a substitute for legal protection in countries with inadequate protection of investors. Fourth, we show that disproportionality instruments do not have a significant effect on earnings performance. Finally, we discuss the policy implications in relation to the harmonization of company laws in Europe.

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1 Introduction

The importance of ownership concentration on firm value and performance has been widely analyzed in the last two decades (Demsetz and Lehn 1985, Morck, Shleifer and Vishny 1988 and many others). In general ownership concentration provides two effects on the governance of corporations, namely an incentive effect making monitoring of management more efficient and an entrenchment effect making it easier for opportunistic owners to behave in a matter that enrich themselves at the cost of other owners. In general corporations with proportional ownership structures seem to create more value than firms in which ownership of control is more concentrated than ownership of cash flow (Claessens *et al.* 2002, Cronqvist and Nilsson 2003). Thus, this evidence suggests that corporations that wishes to maximize firm value should obey to the 'Principle of Proportionality', i.e. that control should be backed up on a one-to-one basis with cash flow.

In this paper we take the analysis of disproportional ownership structures two steps further by analyzing a sample of 4,000+ publicly traded corporations from 14 Western European countries. Our first contribution is to seperate the effect of different instruments to create disproportional ownership structures. In particular, we show that creating disproportional ownership structures through the use of dual class shares destroy significantly more value than creating disproportional ownership structures through other instruments such as pyramids and cross ownership. Hence, it is not disproportionality as such that destroys firm value; rather the reduction comes from the particular instrument used to create disproportionality.

Our second contribution is to document that the impact of different instruments depends on the level of investor protection. Theoretically, we argue that the impact of for instance dual class shares and other disproportionality instruments depend on the level of legal investor protection. We base this argument on the fact that these instruments trigger both incentive and entrenchment effects. However, the benefit of the incentive effect depends on the level of investor protection in the following way: If a country has a strong protection of investors, managers have strong incentives to work in the interest of the owners even in the absence of large controlling owners, since the market for corporate control is active and transparent.

On the other hand, if investor protection is low, managers may feel little outside pressure and therefore may tend to slack more if not monitored closely by large controlling owners. Similarly, the controlling owners' entrenchment opportunities may also be lower in countries with good investor protection. Thus, whereas it is theoretically clear that the impact of a given disproportionality instrument on firm value depends on the level of investor protection, the actual sign of this relationship is an open empirical question.

We answer this question by dividing our sample into regions with separate legal systems and different levels of investor protection. We show that disproportional ownership structures and in particular dual class shares and pyramids have a strong and significant negative effect on firm value in the two regions with high investor protection whereas the negative impact is absent in regions with worse investor protection. Hence, we provide evidence for that dual class shares, pyramids and other instruments that separate control from cash flow may substitute investor protection in countries with a low standard of legal protection.

The results of the present paper have policy implications which not least are relevant for the ongoing discussion about the harmonization of European corporate laws, exemplified by the continued debate about the European Commission's attempt to renew the takeover legislation. Disproportionality decreases firm value and in particular disproportionality which is incurred through the use of dual class shares. Thus, on one side this may provide arguments in favor of policy proposals that make it less attractive to organize firms using dual class shares. On the other hand, we also show that the desirability of such proposal may depend on the degree of investor protection within the individual countries. Whereas limiting the use of dual class shares may increase firm value in Northern Europe, this conclusion may not hold for firms in Southern European countries where dual class shares may function as a substitute for investor protection.

The paper proceed as follows: In the next section we present our sample of Western European firms. In Section 3 we confirm the negative relationship between disproportional ownership structures and firm value in Western European firms. This relationship has previously been confirmed for individual countries and for a sample of Asian firms in Claessens *et al.* (2002). Section 4 disentangles this negative relationship by seperating the effects

of the instruments that have created this disproportionality, showing that disproportionality through dual class shares has a particular strong negative impact on firm value. In Section 5 we analyze the connection between disproportionality and investor protection and show that the negative impact of disproportional ownership structures is strong in countries with good investor protection and weak in countries with bad investor protection. Section 6 analyzes the impact of disproportionality on performance. Finally, the last section discusses our findings and relate it to the important debate about reviewing the European takeover legislation.

1.1 Related literature

There are a number of studies that have analyzed the impact of disproportional ownership structures on firm value and performance. Claessens *et al.* (2002) identify empirically the incentive and entrenchment effects of large shareholders. In a sample of 1,301 publicly trade corporations in eight East Asian countries they show that ownership concentration in itself increases firm value, but that separation of cash flow and control decreases firm value. They also try to measure the importance of the instruments separating ownership and control rights to shed light on which mechanism that are driving the results. However, the results are grossly insignificant and they are therefore not able to disentangle which disproportionality instrument is associated with the valuation discount. Lins (2003) investigates firm performance and management ownership in 1000+ corporations in 18 emerging markets and finds that firm value is reduced whenever votes is more concentrated than cash flow. Gompers *et al.* (2004) analyze a sample of US firms and show that the relationship of firm value to ownership concentration measured with cash flow is positive and concave whereas the relationship to voting concentration is negative and convex. Hence, these findings are very similar to the Classens *et al.* study of Asian firms. Cronqvist and Nilsson (2003) analyze the impact of controlling minority shareholders on firm value and firm performance in a sample of 309 publicly traded Swedish firms. They show that having controlling minority owners, i.e. a disproportional ownership structure, decreases firm value and firm performance and that this effect is most significant if these controlling minority shareholders are families. Maury and Pajuste (2002) document that firm value decreases if

large owners control firms through disproportional ownership structures in a sample of 174 Finnish firms.

All these papers provide evidence for that the concentration of ownership and control are associated with both incentive and entrenchment effects. In the present we confirm this insight in a sample of 4,000+ Western European publicly traded firms. Since the European capital markets are different from capital markets in emerging countries and in the US (La Porta *et al.* 1999), the finding that there are incentives and entrenchment effects in a large sample of European firms is important in itself. However, compared to the studies above our main contribution is to extent the analysis by decomposing the effect of disproportionality into types of instruments, i.e. to investigate if instruments like dual class shares, pyramids and cross ownership provide the same impact on firm value, and by analyzing whether legal investor protection matters for these results.

There is a huge literature on ownership concentration and firm valuation and performance. Following Demsetz and Lehn (1985) a number of studies have found no significant relationship between ownership and performance, whereas a second group of studies (initiated with Morck, Shleifer and Vishny 1988) have found a non-linear relationship as the combined outcome of the joint study of incentive and entrenchment effects. Our study has little to say about ownership concentration as such, we focus entirely on disproportionality measure with the separation of control from ownership.

The consequences of disproportional ownership structures have in addition been documented through estimating the premium price on shares with superior voting rights (see. e.g. Zingales 1994, 1995, Nenova 2003 and references herein). This premium has been read as a measure of private benefits of control. Interestingly, this measure seem to be higher in countries with low protection of investors and lowest in countries with good investor protection. Hence, the ability to extract private benefit may be limited when investor protection is good. This is one part of our general argument described above. With respect to firm value, we argued that dual class shares may also increase the value of better monitoring incentives. We show that the aggregate effect is that the value destruction effect of dual class shares is negatively correlated with investor protection.

2 Data

Our data are obtained from two different sources. The data on ownership structure and firm organization are primarily obtained from Faccio and Lang's (2002) study of firms in Western Europe. We have extended their data set with firms in Denmark and Sweden.[1] Danish firms were not included in Faccio and Lang's study, while we are able to extend the number of included Swedish firms from 245 to 335 implying that we have ownership information on 5,521 Western European firms. All ownership variables are defined accordingly to Faccio and Lang (2002).

We merge this data on ownership structure and firm organization with accounting data from Worldscope from 1996 to 1998. We use the name of the firm as the identifier between the two data sets. The matching on firm name produced a number of obstacles due to shortcomings in the data sources. To reduce the number of missing firms we checked for changes in firm name and de-listings. Further, not all listed firms in Europe are included in Worldscope - in particular firms in Spain and Belgium are missing on a large scale, since only 170 out of 604 listed Spanish firms and 94 out of 130 Belgian firms are included. The total number of firms is reduced from 5,521 to 4,410 due to missing data, shortcomings in the matching procedure and deviations between Faccio and Lang's data and Worldscope.

Our analysis seeks to examine the effects of a disproportional ownership structures on firm value measured by the Tobin's Q, where we use the standard definition that Q equals market value of equity plus book value of debt over book value of assets. A potential problem with our measure of Q arise for the firms with dual class shares, since the superior voting shares can either be publicly or privately held. We calculate firm value on the basis of the publicly traded shares and therefore assume that the price of the superior voting shares equals the price on the limited voting shares for those firms with privately held superior voting shares. We thereby assume that the superior voting shares carry zero voting premiums. We will address this potential valuation bias in Section 6, but for now state that our results contradict this potential problem. In addition to firm value we also use return

[1] The ownership structures of Danish and Swedish ¯rms are obtained from Greens and SIS Ägarservice, respectively.

on asset as the endogenous variable in Section 6, defined as operating profit over book-value of assets.

In our regressions we control for a wide range of firm characteristics that are likely to affect firm performance (see Table 1 for definition of variables). To control for size effects we include the sales. Similarly, we include leverage to control for firms in financial distress and both assets tangibility and sales growth to capture that growth firms have higher market-to-book ratios. Finally, we control for the largest owners cash flow stake. Unfortunately not all firms in Worldscope report all of our variables, we therefore exclude 313 firms where either market value, sales, sales growth or assets tangibility were missing. We further exclude 5 firms with assets under 1 million dollars and 4 firms with extreme sales growth, since our control variables take extreme values for these tiny firms. Thus, the empirical analysis is carried out with 4,097 observations.

The merged sample is a representative subsample of Faccio and Lang's data with respect to the employment of disproportionality instruments. Table 2 provides summary statistics on country and regional level of both the dependent and explanatory variables that are used in the empirical section. Average Tobin's Q on country level is decreasing in the level of investor protection thereby confirming the insight of LaPorta *et al.* (2002) on a larger sample of European firms. Further it should be noted that publicly held firms in Central and Southern Europe are larger than firms in the U.K. and Scandinavia.

3 Incentives and Entrenchment in European Corporations

3.1 The frequencies of disproportional ownership structures in Western European firms

Table 3 depicts the use of instruments to separate cash flow and control in Western Europe. Further, Table 3 shows the share of firms with dual class shares, pyramidal ownership, cross ownership and other, where 'other' is defined as firms with a disproportional ownership structure that neither apply dual class shares nor pyramidal structures, i.e. firms with golden shares, restrictions on voting rights, etc. Across countries the use of the four types

of disproportionality instruments varies a lot. Dual class shares are widely used in Denmark, Italy, Sweden and, surprisingly, United Kingdom, whereas they are absent in Belgium, Portugal and Spain and almost absent in France. Pyramids are frequently used in all European countries, but less pronounced in Finland, Norway, Portugal and Spain. Cross-holdings are rare and only present in Austria, France, Germany, Ireland, Italy, Spain and United Kingdom. Other instruments to separate cash flow and votes are common in Belgium, Denmark, Germany, Ireland, Spain, Sweden, Switzerland and United Kingdom.

On the aggregate level disproportionality instruments are highly frequently used in Scandinavia, Ireland and United Kingdom and less frequently used in Austria, Belgium, Germany, Switzerland and Southern Europe. This finding may seem challenging to the traditional view within the investor protection literature (see LaPorta *et al.* 1999), since we find a higher fraction of firms that use instruments to concentrate control in countries with high investor protection (Scandinavia, Ireland and the UK) than in countries with poor investor protection (Central and Southern Europe). However, as we show in the next section, the use of these instruments differ between the Anglo-Saxian countries and the continental Europe.

Apart from the overall differences between countries in the implementation of the different disproportionality instruments laid out by Table 3 the legal definitions of each instrument varies from country to country. Even though dual class shares is an effective remedy to introduce a disproportional ownership structure the potential degree of disproportional depends on the relative voting power of the superior voting shares (SVS) to the limited voting shares (LVS) and the distribution of the ownership. Faccio and Lang (2002) list the legal restrictions in Western European countries on the issue of dual class shares. The regulation is far from leveled among the European countries. Dual class shares can be issued without any restrictions in Austria, Ireland and Switzerland whereas a one-share-one-vote is obligatory in Belgium and (in principle) Norway, where departures from the one-share-one-vote principle require government approval in the latter - however these seems to be granted frequently. A majority of the other European countries have a cap on the proportion of the non voting shares that can be issued, thus the LVSs can not exceed a certain threshold of the stock capi-

tal; Germany (50%), France (25%), Italy (50%), Portugal (50%) and Spain (50%). Denmark, Finland and Sweden have imposed a minimum voting ratio of one-tenth between SVS and LVS (with potential "grandfather"-rules), whereas the issue of non-voting shares has been outlawed in the UK since 1968. Thus, the underlying restrictions and variation in the corporate law among European countries are reflected in the data. In Germany firms with dual class shares often assign no voting power to the limited voting shares, thus the LVS is reduced to a claim on future income rights.[2] Similarly, in Denmark and Sweden a 10:1 voting relation between SLVs and LVSs is the most common, since it is applied by almost all firms with dual class shares in the two countries.[3] In France the 15 firms with dual class shares are primarily privatized state owned enterprises. To sum up, even though dual class shares are used frequently in Europe, the design and regulation of the use of dual class shares varies among the European countries. Moreover the effect on firm valuation is dependent on the distribution of ownership.

In Figure 1 we have illustrated the distribution of cash flow and votes for the European firms in our sample. In Panel A we focus on the largest owner measured by votes in each of our 14 countries, while Panel B shows the group of large owners, defined as the sum of cash flow and votes of all owners who possess more than 10 percent of the votes. For each country we have stated the number of firms in our sample, the number of firms with dual class shares and the numbers of firms with other instruments that create disproportionality.

We notice consistently with Barca and Becht (2001), Grugler (2002) and Faccio and Lang (2002) - that most firms in all Western European countries have some form of concentrated ownership, i.e. that the group of large owners in general possesses more than 20 percent of both cash flow and votes. It is also evident that ownership structures in the two Anglo-Saxian countries in general are less concentrated than in the large continental countries like Germany, France and Italy. Hence, this underline, that even though firms in the Anglo-Saxian governance model may use disproportionality instruments to a large extent, they do this in a very different way. In continental Europe the disproportionality instruments are used to concentrate control in the

[2] Becht and Bähmer (2001)
[3] Bennedsen and Nielsen (2004)

hands of the largest owners. In the UK and Ireland there are a rather proportional ownership structure in general even in the presence of these instruments.

The firms that obey the proportionality principle are located on the 45-degree line. In all countries, except Sweden, these constitute a majority of all firms. However, the fraction of firms with a disproportional ownership structure varies a lot across countries. Finland, Norway, Portugal, Spain and the UK have relatively few firms with a disproportional ownership structure whereas e.g. Germany has a large share of firms with a disproportional ownership structure.

The distribution of the point mass in Figure 1 becomes important when we interpretate our empirical results in Section 4 and 5. In particular we construct two variables to measure the degree of disproportionality; the *absolute disproportionality* defined as votes minus cash flow and the *relative disproportionality*, which equals votes over cash flow. In figure 1 the absolute disproportionality is the vertical distance from the plot of cash flow and votes to the proportionality line. Similarly, the relative disproportionality measure is given by the slope on the line from orego through the plot of votes against cash flow. Equipped with these two measures we can further conclude from Figure 1 that, firms in Denmark, Germany, Ireland, Italy and Sweden not just have a higher fraction of firms with a disproportional ownership structure than firms in Finland, Norway, Portugal, Spain and the UK, but they also tend to have a higher degree of disproportionality for those firms that applies a disproportionality instrument.

Table 3 shows the average ownership structure in the 14 Western European countries and thereby tabulates the insight of Figure 1; Ownership and control is much more concentrated in Continental Europe than in Ireland and the UK and the degree of disproportionality seems to be lower in the latter.

3.2 The Impact of Ownerhip and Control Concentration on Firm Value

We estimate a cross section model of the average of the three yearly observations from 1996 to 1998. We do so because Faccio and Lang's data on the ownership structure in each country are not collected in the same year for all

countries. Thus, we assume that the ownership structure is constant for the period 1996 to 1998 and focus on the variation between firms.[4] Our results are robust to these assumptions, since they are confirmed when we estimate the cross section model based on yearly observations. We include country specific fixed effects to control for country specific firm invariant heterogeneity. This is in particular important if our basic model omits country specific variables that are correlated with the explanatory variables. Thus, investor protection has been shown to explain the variance in ownership structures around the world (see LaPorta *et al.* 1999).

Table 5 analyzes the relationship between ownership concentration, disproportionality and firm value measure by Tobin's Q. In the left side we focus on the largest owner's ownership share whereas in the right side we use the ownership stakes of the whole group of large owners. In this and all other models we control for size, leverage (debt to assets ratio), asset tangibility, sales growth and industry effects. Table 4 shows the mean and median of these variables on country and regional level.

In our sample of firms across Western Europe there seem to be a positive but highly insignificant effect of ownership concentration on firm value and firm performance. This pattern also hold in general if we look at individual countries or regions within our sample. It is also robust to looking at the group of large owners' ownership stake as shown in Panel b). Thus, we cannot conclude any significant linear relationship between firm value and ownership concentration. Claessens *et al.* find a positive and significant effect of ownership concentration in their sample of Asian firms. Naturally our result does not exclude that there could be a significant non-linear relationship as documented by Morck, Shleifer and Vishny (1988). However, since there is a large literature on these questions we do not pursue it further here.

In Table 5, Model 2 we include a dummy for whether a given firm has a proportional ownership structure, defined as the absence of separating instruments and disproportional ownership structures. In both specifications this proprotinality dummy is positive and significant at a 5 pct. level. Hence, we see that having a proportional ownership structure generally increases

[4]For a number of ¯rms we only have one or two yearly observations between 1996 and 1998 of the tangible assets, thus for those we use the average of the available observations.

firm value in publicly traded Western European firms. This is consistent with the evidence for Asian firms provided by Claessens *et al.*, who shows that firm value decreases to the extent that ownership is separated from control. Our simple regression model have a satisfactory explanatory power, with a R^2 around 14 pct.

Model 3 and 4 look at the degree of disproportionality. Absolute disproportionality is significant both when we look at the single largest owner and the group of large owners. If we instead use relative disproportionality we notice that the negative impact only is significant in the case where we analyze the group of large owners. Hence, we conclude that not just the presence of disproportionality as such affects investors' valuation of firms, but also that the degree of disproportionality is not important.

We sum up in line with Claessens *et al.* (2002) a.o., that our data support the principle of proportionality since firms with an one-to-one relationship between cash flow and votes indeed seem to have higher valuation relative to firms with disproportional ownership structures. This result raises at least two interesting questions: Does it matter how firms create disproportionality, i.e. which instruments the firms use to separate control from ownership? and is this relationship the same across different legal regimes? We pursue these questions next.

4 Dual class shares, pyramids, cross-ownership and other mechanisms violating the principle of proportionality

In the previous section we established that organizing ownership structures according to the principle of proportionality increases firm value. However, there are many ways to disobey this principle: firms can have dual class shares, there can be a chain of corporate ownership (pyramids) concentrating control in the hands of the ultimate owners, there can be cross ownership or voting caps. In this section we analyze how the value reduction from disproportional ownership structures depends on which instrument is used to create such disproportionality. To our knowledge this is the first paper that studies this relation empirically.

There are a number of theoretical contributions analyzing dual class

shares. In public traded firms with an active market for corporate control, most models have focused on the impact on control fights of having disproportional ownership structures through the use of dual class shares (see Grosmann Hart 1988, Harris and Raviv 1988, and many others). In closely held firms Bennedsen and Wolfenzon (2000) show that having a one-share-one-vote rule increases incentives to collaborate with other owners and this may increase firm value.

Apriori there is no reason to expect that different disproportionality mechanisms work through the same channels. When dual class shares are used, the ultimate owners have a direct contact with a given firm. On the other hand if chains of corporate ownership are used, the agents representing the ultimate owners may have different constituencies perhaps reflecting compromises between conflicting interests on a higher level of ownership. There are few studies of pyramidical ownership (for an early contribution see Wolfenzon 1999). Hence, theory cannot provide a definite answer to how disproportionality created through pyramids affects firm value.

Table 6 provides the first answer to this question. This table yields the results from regressions of firm performance focusing on disproportionality instruments. Model 5 explains firm value (Tobin's Q) as a function of the particular instrument used to create disproportionality and our standard control variables.

Notice, that the impact of the presence of dual class shares on firm value is negative, large and very significant. This is for our whole sample of 4,097 Western European firms. In Model 6 and 7 we look at the interaction effects of dual class shares and the degree of disporportionality on firm value. Given that firms have dual class shares the degree of disproportionality has a significant negative impact on firm value when we use the absolute diproportionality measure. However, the negative impact of the interaction of dual class shares and relative disproportionality is insignificant.

Thus, we have confirmed that dual class shares in general seem to destroy firm value. This is consistent with the argument that ownership concentration is positive, since controlling owners internalize significant cash flow, but that dual class shares entrench owners since they possess significant control without internalizing the cash flow to a similar extent. At least this is the way it is perceived by the external capital market.

Similar to the value reduction of dual class shares, pyramids have a negative and highly insignificant effect on firm value in our sample. However, this is not confirmed when we in Model 6 and 7 interact the effects of pyramids and disproportionality, since both the coefficient for pyramids times absolute disproportionality and the coefficient for pyramids times relative disproportionality are highly insignificant. We find evidence suggesting that the presence of pyramids decrease firm value. Dual class shares and pyramids, thus, seem to have a different impact on firm value. When we test the effect of dual class shares against the effect of pyramids in Model 5, we reject the null of equal effects at the 1 percent level. Thus, dual class shares has a significantly larger negative effect on firm value than pyramids.

Cross-holdings have a positive, but again highly insignificant impact on firm value. Similarly, the degree of disproportionality within firms with cross -holding does not have a significant valuation effect. Finally, others (covering e.g. voting caps and golden shares) have a negative, but insignificant effect both when we analyze the present of this group of instruments. The degree of disproportionality within this group of firms is highly insigificant as well.

If we analyze the group of large owners these results do not change. Dual class shares and pyramids significantly decreases firm value. The other instruments have an insignificant effect on Tobins Q. The results are in general very similar to the results for the analysis of the largest owner.

Our results show that the type of instrument through which disproportionality is created is indeed important for the effect of disproportionality on firm value. Dual class shares and pyramids have a negative impact on firm value. In addition dual class shares has a significantly larger negative effect on firm value than pyramids.

5 Investor protection and the principle of proportionality

Today there are a large number of studies analyzing the impact of investor protection on various topics in corporate organization and firm activity (see survey by La Porta *et al.* 2000). In this section we analyze if investor protection plays a role in explaining the impact of particular disproportionality instruments on firm value.

To motivate this analysis, let us think about the cost and benefits of dual class shares. The benefit of dual class shares is that it makes it easier for controlling owners to be informed and involved in management and it provides them with more power to make their arguments heard by the daily management. Thus, dual class shares can reduce the opportunistic behavior of the management in firms where there is a significant separation of ownership and control. The cost of dual class shares is the increased opportunities for controlling shareholders to extract rent from non-controlling shareholders. This may include choosing ways of operating the firm that are more in the interest of the controlling owners than in the interests of the non-controlling owners. It may also include a disproportional distribution of the total surplus generated from these operations.

Good investor protection reduces ceteris paribus the management's ability to engage in opportunistic behavior dimentral to the interest of the owners. Thus, in countries where there is a high level of investor protection there is a reduced benefit of disproportional ownership structures. Similarly, the controlling owners' ability to extract rent from non-controlling owners increases in countries with bad investor protection. This is most evident in transition economies, where insiders' insufficient ability to commit not to divert outsiders' investment has been a serious obstacle for increased foreign investment in these economies (see Shleifer and Vishny 1997 a.o.). However, even in firms where non-controlling shareholders are well protected there will always be a legal scope for controlling shareholders to expropriate rent to themselves. For instance through pecuniary and non-pecuniary benefits or by influencing business decisions in a way that promote their own interests, e.g. doing business with firms where the controlling owners have a specific interest. We conclude that since both costs and benefits of dual class shares are affected by the degree of investor protection in a country, it is not possible to theoretically determine the exact aggregate impact on the value reduction of dual class shares.

Following La Porta *et al.* (1999) we divide our 14 countries into four regions: UK/Ireland, the Scandinavian countries (Denmark, Finland, Norway and Sweden), Southern European countries (Belgium, France, Italy, Portugal and Spain)and countries inspired by German legal system (Germany, Austria and Switzerland). According to La Porta *et al.* there are many

similarities within each of these four regions with respect to the content and implementation of relevant corporate and accounting laws, i.e. these four regions represent different legal systems. In addition these four regions have very different levels of investor protection with outside owners in UK and Ireland being best protected followed by outside owners in the Scandinavia. Finally, the outside owners in the Southern European and German legal system are worst protected.

Table 7 provides the results for UK and Ireland. There is a large positive and significant effect of having a proportional ownership structure. Similarly, absolute and relative disproportionality enter with negative and highly significant signs. Model (5a) focuses on the instruments though which disproportionality is created. We notice a large and highly significant negative effect of using dual class shares and pyramids, but that the redcution in value does not materialize when other separating instruments are used. These results are robust to analyzing the group of large owners as is done in the right part of Table 7. Again, we want to test whether the effect of dual class shares is significantly larger than the effect of pyramids. The null of equal effects is rejected at the 10 percent level with a double sided test.

Table 8 provides similar results for the Scandinavian countries. The valuation effect of having a proportional ownership structure is large, positive and significant on a 1 pct. level. Only the absolute disproportionality measure is negative and highly significant. Looking at the instruments, we observe that the negative effect of dual class shares on firm value is large and significant at a 1 pct. level. We also observe that a pyramid structure also destroys firm value in Scandinavia and that this effect is large and significant too. These effect are robust to analyzing the group of large owners. Eventhough, the effect of dual class shares is higher than the effect of pyramids the coefficients are not significantly different.

There is a striking difference between these results in these two regions with high investor protection and the rest of Europe. Table 9 yields the impact of disproportionality instruments on firm value and performance in countries with a German legal origin. First we observe a *negative* but insignificant effect on firm valuation of having a proportional ownership structure. Second, the degree of absolute and relative disproportionality are grossly insignificant. The most important observation, however, is that the

coefficients on dual class shares and other separating instruments are small and highly insignificant. Thus, there is no evidence for that dual class shares or other instruments have significant impact on firm value in these countries. These results are confirmed in the analysis of the group of largest owners.

Table 10 provides the results for Southern Europe. For these five countries, there is a positive, but highly insignificant effect on firm value of having a proportional ownership structure. Similarly, all separating instruments get mixed signs that highly insignificant. These results carry over to the case where we analyze the group of large owners.

We conclude this section by noticing that dual class shares and pyramids have a significant negative impact on firm value in countries with good investor protection, but that we find no evidence suggesting that these instruments destroy firm value in countries with bad investor protection. This support the argument that dual class shares substitutes investor protection, implying that the benefit of concentrated ownership is larger in countries where agency problems are higher.

6 The impact of disproportionality instruments on earnings performance

Our analysis so far has focused on the impact of disproportionality on firm value across instruments and legal regimes. It is an interesting question if disproportionality in general and dual class shares in particular only have an effect on firm value or if it also affects firms' earnings performance. In this section we, therefore, study the impact of disproportionality on the performance of the firm measured as return on assets.

Table 11 shows the impact of our various measures of disproportionality on earnings performance. In general the effect of disporportional ownership structures disappears when we use return on assets as our endogenous variable. It is close to zero and highly insignificant. However, it is important to notice that our performance models based on RoA have very little explanatory power. The R^2 is only around 3 pct. in our performance analysis, compared to R^2 around 14 pct. when we analyze Tobins Q. Hence, it is difficult to tell if the lack of significance is due to a real lack of effects from ownership structures to performance or whether it is coursed by our weak

performance model.

Table 12 repeats the analysis where we seperate the effects of different instruments by using earnings performance as the endogenous variable. In general the effects which are very clear when we use Tobins Q as endogenous variable becomes highly insignificant in these models. Thus, we cannot provide any evidence of dual class shares or pyramids having a significant negative impact on performance in the Western European corporations.

Table 11 and 12 reveal that it does matter which measure we use for the prosperity of the firms. In general disproportionality and in particular dual class shares seem to have a large and significant negative impact on firm value measured through Tobin's Q. Contrary to this, none of our models have shown any significant impact on firm performance measured through return on assets. We now discuss a number of potential arguments explaining these findings.

First, as mentioned above this could be due to that the two types of models have different quality. In general we have a higher explanatory power in our firm value models than in our performance model. However, the explanatory power in the performance models varies a great deal and even in the best models we do not find any significant effects of disproportionality or its instruments.

Second, a possible explanation for these results could be that they reflect a valuation bias if we misprize the true value of the controlling ownership blocks. We have calculated Tobins Q on the basis of the stock price from trades of minority holdings. Thus, if the controlling blocks are traded at a premium we misprize the market value of the firm. However, if our results are driven by a valuation bias we should expect to the same effect for dual class shares and pyramids, since both are affected the same way by our valuation bias. We can therefore reject that our results are an artifact of a valuation bias.

Third, another potential explanation for the negative effect of dual class shares is the voting premium attached to the superior voting shares. The voting premium can be rather substantial even in Western Europe as documented by Nenova (2003) - the median voting premium varies widely across countries from 30 percent in Italy to 0 percent in Denmark. Table 13 shows the voting premium in the 9 Western European countries that were included

in Nenovas study. From Table 13 it is evident that we find the strongest negative effect of dual class shares in Scandinavia where the average voting premium is zero. Thus, we can reject that our general result results are driven by a voting premium bias. Further, it is also evident that for a large fraction of the firms with dual class shares in e.g. Italy both shares classes are traded on the stock exchange. Thus, here the market assigns a premium to the superior voting shares, but the firm as whole is not traded with a discount as the case in Scandinavia. This finding provides evidence for our claim above, that disproportionality instruments might work as a substitute for investor protection.

Finally, it may be that disproportionality in general and dual class shares in particular do not affect performance of firms even if it affects valuation. This could be the case if controlling owners extract a disproportional part of the surplus in the firms they control, but that everyone has an interest in that the surplus of the firms are as high as possible. In words, our results suggest that the negative impact of disproportional ownership structures is driven by distributional effects rather than value creation effects.

6.1 Robusness

This section summarizes a number of robustness checks to the preceding analysis. All our results are as we have shown robust toward the definition of the controlling owner. In the left part of Table 6 throughout 12 we have reported the results using the cash flow and votes of the largest owner measured on votes, whereas the right part has used the cahs flow and votes of the group of large owners (i.e. the joint ownership of all owners who possess more than 10 percent of the votes). Simlarly, we have run all regressions using the cross-section data from 1996, 1997 and 1998 individually rather than the average of the period from 1996 to 1998. Non of the results reported are affected by the our choice of sample period. Finally, we have run regressions where we have excluded firms in Belgium, Portugal and Spain in the analysis of the link between disproportionality and firm performance. We did so, because our empirical analysis relates the performance of a particular firm to the mean of the industry within the country, thus our results are likely to suffer from selection biased if our data only covers a small fraction of the total number of listed firms, which leads us to exclude firms in Spain. In

particular this is a problem if the total number of listed firms is small - this leads us to exclude firms incorporated in Belgium and Portugal. We thereby reduce the number of firms to 3,741. Again, non of our results changes when we exclude firms incorporated in Belgium, Portugal and Spain.

7 Discussion and policy implications

We have shown three important results in this paper. First, we have confirmed that organizing publicly traded corporations with a proportional ownership structure increases firm value in Western Europe. Second, the value reduction depends on which disproportionality instrument is applied, in particular there is significantly more value reduction from using dual class shares than pyramids, whereas other instruments have no significant effect. Third, disproportional ownership structures substitutes investor protection, implying that disproportional ownership structures are more costly in countries with good investor protection where agency problems are smaller.

We believe these insights may shed new light on important policy issues. During the last two decades the European Commission has spent a lot of resources on reforming company laws within EU. Inspired by the so called Winter report (Winter *et al.* 2001) it has been suggested to promote 'the proportionality principle' in the effort to harmonize European company law. The Winter-report sugested the introduction of the much debated Break-Through rule to facilitate takeovers of firms with a disproportional ownership structure.[5] We make three important contributions to the debate about the desirability of such rules to implement proportional ownership structures.

Our first contribution is to argue that firms which have dual class shares and a sufficiently disproportional ownership structure, such that they may be affected by the Break-Through rule do create less value than other firms. These firms in general have disproportional ownership structures implemented through dual class shares and will accordingly have lower firm value.

One of the main arguments against the Break-Through rule is that it only

[5]The Break-Through rule stated that an investor, after acquiring a certain threshold of the cash °ow rights to a ¯rm, should be able to break through the ¯rms current control structure. The Winter-report suggests that the threshold should be set at 75 percent, so that any owner possessing 75 percent of the total outstanding shares, independently on the presence of dual class shares, should have complete control with the ¯rm.

affects firms which have a disproportional ownership structure implemented through dual class shares. Our second contribution is to provide some rationale for not including other kinds of instruments. As we have shown above, in general dual class shares destroys more value in firms than pyramids and other instruments. However, our results also show that pyramids have a negative and significant effect on firm value.

Our last policy contribution is to argue that there may be some true to the statement that "one size does not fit all". Whereas dual class shares and pyramids destroy significant value in Northern European countries, there is no evidence for that it destroys value in countries like Germany, France and Italy. In these countries a pre-requisites for introducing a Break-Through rule is a general improvement of investor protection.

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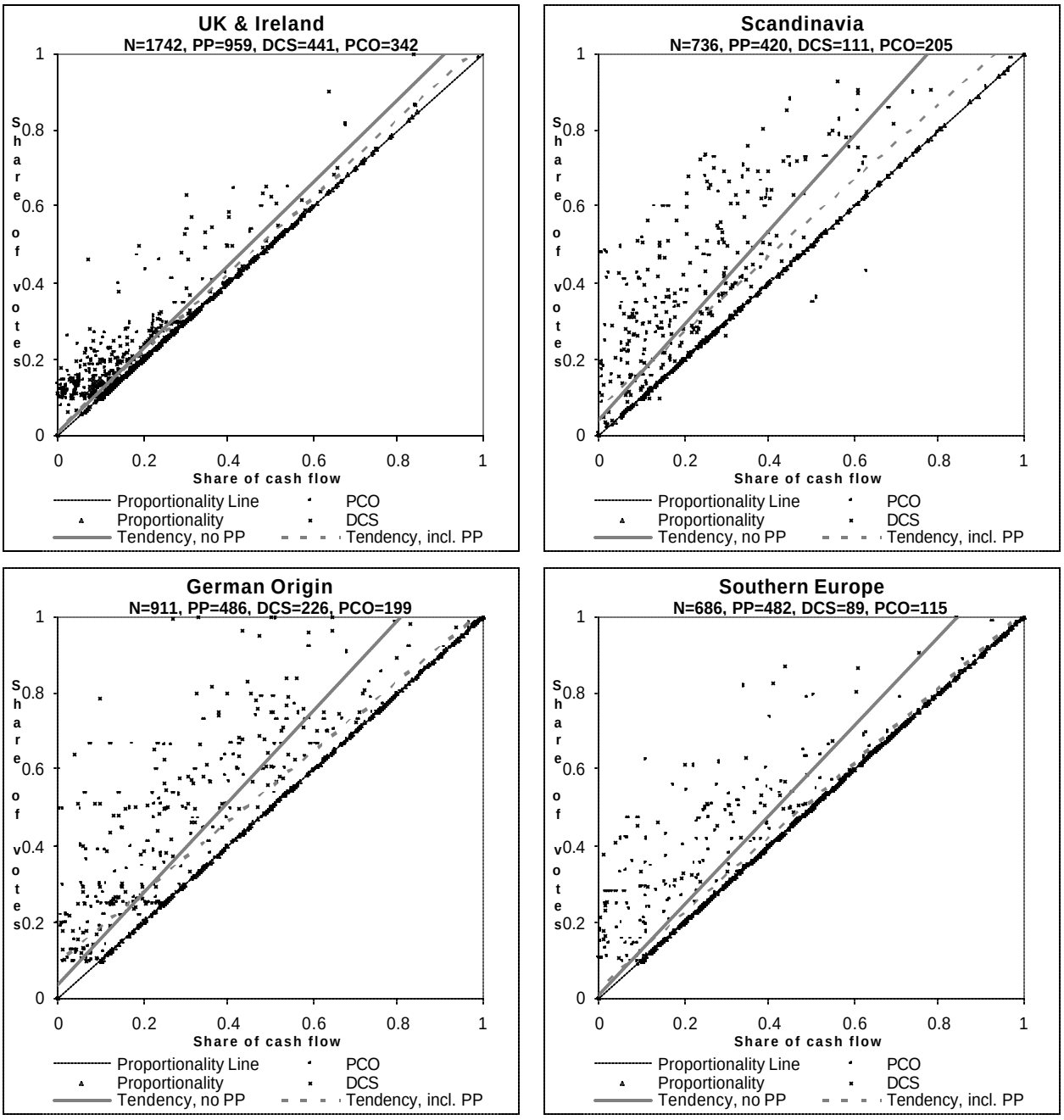
Figure 1

Panel A, Largest Owner's Share of Cash Flow and Votes across Legal Regimes

This figures plot the largest owner's share of cash flow and votes across legal regimes in Europe; *UK & Ireland*, *Scandinavia* (Denmark, Finland, Norway and Sweden), *German origin* (Austria, Germany and Switzerland) and *Southern Europe* (Belgium, France, Italy, Portugal and Spain). On top of each figure we have displayed the total number of firms (*N*) and number of firms with proportionality (*PP*), dual class shares (*DCS*) and other instruments than dual class shares, i.e. pyramids, cross-holdings and other (*PCO*). We mark these three different types of firms with a triangle (*PP*), cross (*DCS*) and dot (*PCO*), respectively. All firms with a proportional ownership structure (PP) will be located on the '*proportionality line*', whereas the lines '*Tendency incl. PP*' and '*Tendency excl. PP'* show the coefficient on the regression of votes on cash flow with and without firms with a proportional ownership structure (*PP*), respectively.



Panel B , Group of Large Owners' Share of Votes and Cash Flow across Legal Regimes

This figures plot the group of large owners' share of cash flow and votes across legal regimes in Europe; *UK & Ireland*, *Scandinavia* (Denmark, Finland, Norway and Sweden), *German origin* (Austria, Germany and Switzerland) and *Southern Europe* (Belgium, France, Italy, Portugal and Spain). The group of large owners is defined as the sum of cash flow and votes held by owners who individually possesses at least 10 percent of the votes. On top of each figure we have displayed the total number of firms (*N*) and number of firms with proportionality (*P*), dual class shares (*DCS*) and other instruments than dual class shares, i.e. pyramids, cross-holdings and other (*PCO*). We mark these three dfferent types of firms with a triangle (*PP*), cross (*DCS*) and dot (*PCO*), respectively. All firms with a proportional ownership structure (PP) will be located on the *'proportionality line'*, whereas the lines '*Tendency incl. PP*' and *'Tendency excl. PP'* show the coefficient of the regression of votes on cash flow with and without firms with a proportional ownership structure (*PP*), respectively.

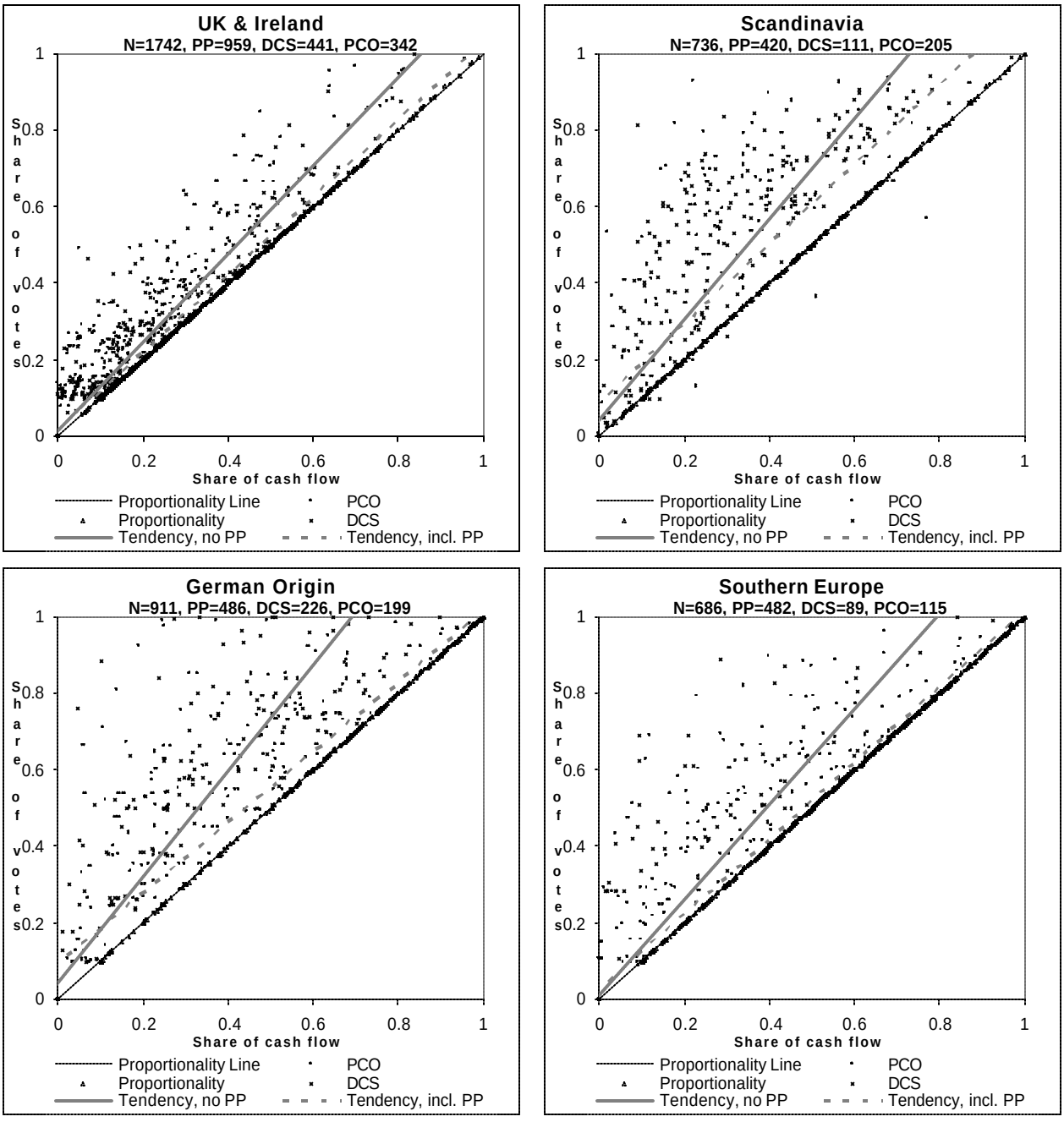


Table 1, Explanatory Variables

Firm size	Measured as log. to sales
Leverage	Book-value of debt over book-value of total assets
Asset tangiblity	Share of assets which are tangible. Defined as 1 – (intangibles / total assets).
Sales growth	Growth in sales in the year prior to the observation.
Controlling owner's cash flow stake	The share of cash flow held by the controlling owner. We use two definitions of the controlling owners. In the left part of each regression table we define the controlling owner as the single largest owner measured by votes, whereas in the right part we define the controlling owners as the group of large owners, which individually possesses at least 10 percent of the votes.
Proportionality	A dummy taking the value 1 if the controlling owner has an equal share of cash flow and votes, and the firm does not have dual class shares, a pyramidal structure, or a cross holding structure.
Dual class shares (DCS)	A dummy taking the value 1 if the firm has dual class shares.
Pyramids (PYR)	A dummy taking the value 1 if the firm has a pyramidal structure.
Cross holdings (CRO)	A dummy taking the value 1 if the firm has cross holdings.
Other type of disproportionality (OTH)	A dummy taking the value 1 if the firm has introduced a disproportional ownership structure through other instruments than dual class shares, pyramids and cross holdings.
Relative disproportionality	The controlling owner's share of votes over cash flow. The left part of the regression tables are based on the largest owner's holdings, whereas the right part focuses on the group of large owners.
Absolute disproportionality	The controlling owner's share of votes minus cash flow. The left part of the regression tables are based on the largest owner's holdings, whereas the right part focuses on the group of large owners.

Table 2, Summary statistics, year = 1997

This table shows the summary statistics on country and regional level for the dependent variables, *Tobin's Q* and *Return on Assets* (RoA), and the control variables used throughout the empirical section. *Tobin's Q* is defined as market value of equity plus book value of debt divided with book value of assets, whereas *RoA* is defined as operating profit over book value of assets. *Size* is measured by sales in million dollars. *Leverage* is defined by book value of debt over book value of assets. *Assets tangibility* is defined as (1 - book value of intangible assets / book value of assets), while sales growth is the growth in sales in the previous year. '*N*' reflects the number of observations in the regression models dependent on the endogenous variable, *Tobin's Q* and *RoA*. The degree of investor protection is measured on a scale from 0 to 6, where 0 is the lowest degree and 6 is the highest degree according to La Porta et al. (2000).

Country / Region	**Tobins Q**		**RoA**		**Size**		**Leverage**		**Assets Tangibility**		**Sales Growth**		**N**		**Investor Protection**
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Tobins Q**	**RoA**	
Panel A: Country level															
Austria	0.87	0.70	0.07	0.03	672	228	0.26	0.23	0.97	0.99	0.29	0.13	91	92	2
Belgium	1.19	0.91	0.07	0.06	1756	264	0.28	0.26	0.95	0.99	0.57	0.15	87	92	0
Denmark	1.10	0.84	0.07	0.05	351	65	0.23	0.19	0.98	1.00	0.20	0.16	172	167	2
Finland	1.29	0.94	0.10	0.08	729	74	0.28	0.26	0.95	0.98	0.40	0.21	105	118	3
France	1.00	0.78	0.04	0.04	2303	221	0.24	0.22	0.91	0.96	0.30	0.13	498	505	3
Germany	1.23	0.85	0.04	0.04	2691	290	0.21	0.15	0.97	0.99	0.26	0.10	583	638	1
Ireland	1.53	1.11	0.02	0.05	572	148	0.22	0.21	0.92	1.00	0.17	0.16	68	66	4
Italy	0.82	0.68	0.04	0.03	2547	408	0.26	0.24	0.96	0.99	0.14	0.12	170	166	1
Norway	1.33	1.01	0.05	0.06	640	132	0.31	0.30	0.96	0.99	0.30	0.12	143	145	4
Portugal	0.78	0.70	0.04	0.04	573	144	0.26	0.24	0.93	0.99	0.20	0.17	71	67	3
Spain	1.06	0.83	-0.04	0.05	801	196	0.18	0.15	0.97	0.99	0.48	0.13	152	153	4
Sweden	1.83	1.23	0.04	0.07	807	75	0.21	0.17	0.92	0.97	0.60	0.14	207	219	3
Switzerland	1.06	0.80	0.06	0.05	1961	281	0.25	0.24	0.97	1.00	0.15	0.09	164	164	2
UK	1.50	0.98	0.05	0.06	822	86	0.20	0.16	0.98	1.00	0.20	0.08	1656	1631	5
All countries	1.30	0.90	0.05	0.05	1364	141	0.22	0.19	0.96	1.00	0.27	0.11	4167	4223	2.64
Panel B: Regional level															
UK & Ireland	1.50	0.98	0.04	0.06	812	87	0.20	0.16	0.98	1.00	0.20	0.09	1724	1697	4.50
Scandinavia	1.42	0.98	0.06	0.07	641	83	0.25	0.23	0.95	0.99	0.39	0.16	627	649	3.00
German Legal Origin	1.16	0.82	0.05	0.04	2350	276	0.22	0.19	0.97	0.99	0.24	0.10	838	894	1.67
Southern Europe	0.98	0.78	0.03	0.04	1933	238	0.24	0.22	0.93	0.98	0.32	0.13	978	983	2.20

Table 3, Use of Instruments to Create Disproportionality between Ownership of Cash Flow and Votes

This table summarizes the use of disproportionality instruments on country level across Western Europe. We only include firms for which we were able to link Faccio and Lang's (2002) data with financial data from Worldscope. Thus, we have fewer firms in our data than in Faccio & Lang's (2002) data for every country, except Denmark and Sweden. We have extended Faccio and Lang's (2002) data with firms in Denmark and Sweden. Danish firms were not included in Faccio and Lang's study, while we are able to extent the number of included Swedish firms from 245 to 272. The ownership structure of Danish and Swedish firms is obtained from Greens and SIS Ägarservice, respectively. The columns show the number and share of firms controlled via different disproportionality instruments in each country. The last two columns show the total number and share of firms, which use at least one instrument.

Country	N	Dual Class Shares		Pyramids		Cross Holdings		Other instuments		All instrumens	
		N	Share	N	Share	N	Share	N	Share	N	Share
Austria	96	22	0.23	23	0.24	1	0.01	0	0.00	40	0.42
Belgium	93	0	0.00	23	0.25	0	0.00	5	0.05	28	0.30
Denmark	187	49	0.26	33	0.18	0	0.00	10	0.05	81	0.43
Finland	125	47	0.38	7	0.06	0	0.00	7	0.06	57	0.46
France	512	15	0.03	75	0.15	0	0.00	0	0.00	89	0.17
Germany	646	116	0.18	152	0.24	19	0.03	3	0.00	252	0.39
Ireland	69	16	0.23	11	0.16	0	0.00	3	0.04	27	0.39
Italy	172	74	0.43	42	0.24	2	0.01	1	0.01	94	0.55
Norway	150	15	0.10	47	0.31	3	0.02	1	0.01	59	0.39
Portugal	71	0	0.00	9	0.13	0	0.00	0	0.00	9	0.13
Spain	170	0	0.00	26	0.15	0	0.00	3	0.02	29	0.17
Sweden	272	152	0.56	73	0.27	1	0.00	0	0.00	194	0.71
Switzerland	166	88	0.53	10	0.06	0	0.00	0	0.00	97	0.58
UK	1669	423	0.25	364	0.22	2	0.00	10	0.01	704	0.42
All countries	4398	1017	0.23	895	0.20	28	0.01	43	0.01	2638	0.60

Table 4, Disproportional Instruments across Legal Regimes

This table shows the mean and median *Tobin's Q, RoA, Size* and degree of disproportionality across legal regimes. *Tobin's Q* is defined as market value of equity plus book value of debt divided with book value of assets, whereas *RoA* is defined as operating profit over book value of assets. *Size* is measured by sales in million dollars. *Leverage* is defined by book value of debt over book value of assets. To save space the ownership variables are only reported for the largest owner measured by votes. *Absolute disproportionality* is defined as votes minus cash flow, whereas *relative disproportionality* is defined as votes over cash flow. Proportionality is a dummy for whether the firm has a proportional ownership structure.

	N	Tobin's Q		RoA		Size		Ownership of Largest Owner							
								Cash Flow		Votes		Absolute disproportionality		Relative disproportionality	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
UK & Ireland															
All	1738	1.50	0.98	0.04	0.06	812	87	0.18	0.14	0.20	0.16	0.02	0.00	2.13	1.00
Proportionality	1007	1.71	1.08	0.04	0.07	596	64	0.19	0.16	0.19	0.16	0.00	0.00	1.00	1.00
Dual class shares	439	1.06	0.87	0.04	0.05	1442	139	0.15	0.11	0.20	0.15	0.04	0.02	4.25	1.09
Pyramids	375	1.30	0.95	0.06	0.06	757	137	0.21	0.16	0.26	0.16	0.05	0.03	5.90	1.21
Cross holdings	2	1.37	1.37	0.06	0.06	44	44	0.09	0.09	0.14	0.14	0.05	0.05	2.36	2.36
Other	13	0.89	0.84	0.06	0.05	211	148	0.11	0.10	0.20	0.20	0.09	0.08	2.51	1.95
Scandinavia															
All	734	1.42	0.98	0.06	0.07	641	83	0.26	0.21	0.33	0.30	0.07	0.00	2.26	1.00
Proportionality	343	1.47	0.95	0.06	0.06	530	71	0.28	0.22	0.28	0.22	0.00	0.00	1.00	1.00
Dual class shares	263	1.37	1.02	0.08	0.07	932	116	0.23	0.20	0.39	0.36	0.16	0.13	2.13	1.59
Pyramids	160	1.35	0.93	0.04	0.06	573	72	0.25	0.21	0.36	0.34	0.11	0.09	5.10	1.41
Cross holdings	4	1.98	0.94	0.08	0.06	83	68	0.18	0.20	0.33	0.34	0.15	0.18	3.70	1.85
Other	18	1.18	0.92	0.06	0.06	847	104	0.22	0.20	0.43	0.41	0.21	0.14	4.11	2.14
German speaking															
All	908	1.16	0.82	0.05	0.04	2350	276	0.44	0.42	0.51	0.50	0.07	0.00	2.91	1.00
Proportionality	519	1.21	0.86	0.06	0.04	1960	207	0.56	0.55	0.56	0.55	0.00	0.00	1.00	1.00
Dual class shares	226	1.03	0.73	0.04	0.04	2991	566	0.31	0.27	0.50	0.51	0.18	0.15	2.31	1.57
Pyramids	185	1.15	0.83	0.04	0.03	2265	449	0.23	0.16	0.37	0.30	0.15	0.12	9.43	1.64
Cross holdings	20	1.06	0.73	0.02	0.01	7714	1283	0.12	0.11	0.23	0.25	0.11	0.12	5.09	2.08
Other	3	0.82	0.92	0.04	0.05	3310	3793	0.39	0.33	0.50	0.47	0.11	0.10	1.46	1.44
Southern Europe															
All	1018	0.98	0.78	0.03	0.04	1933	238	0.41	0.40	0.44	0.46	0.03	0.00	1.98	1.00
Proportionality	769	0.97	0.77	0.03	0.04	1703	211	0.45	0.48	0.45	0.48	0.00	0.00	1.00	1.00
Dual class shares	89	0.83	0.63	0.04	0.03	5382	1651	0.28	0.25	0.43	0.45	0.14	0.12	4.46	1.31
Pyramids	175	1.05	0.82	0.06	0.04	1809	302	0.22	0.15	0.36	0.34	0.14	0.13	6.37	1.83
Cross holdings	2	0.20	0.20	0.02	0.02	5578	5578	0.11	0.11	0.29	0.29	0.19	0.19	2.78	2.78
Other	9	1.56	1.00	0.04	0.05	1095	22	0.32	0.28	0.53	0.56	0.20	0.23	3.26	1.58

Note: A firm may appear in several categories if it has more than one instrument to maintain disproportionality. For this reason, the total number of firms reported is less than the sum of the different categories.

Table 5, Estimation on Cross Section Data with Fixed Country Effects, All 14 Western European Countries, Average of Period 1996-1998

This table reports coefficients estimates from the regression including all 14 Western European countries. The used data are the averages of the yearly observations in the period 1996-1998. The explanatory variables are described in Table 1 and summary statistics are provided in Table 2. The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. p-values are reported in italics.

Dependent variable	**Tobin's Q**				**Tobin's Q**			
Controlling owners	**Largest owner**				**Group of large owners**			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Firm size	-0.122	-0.118	-0.122	-0.122	-0.122	-0.117	-0.122	-0.122
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.239	-0.243	-0.242	-0.240	-0.239	-0.242	-0.244	-0.239
	0.106	*0.098*	*0.102*	*0.105*	*0.106*	*0.099*	*0.100*	*0.106*
Assets' tangiblity	-1.827	-1.829	-1.816	-1.822	-1.830	-1.836	-1.823	-1.825
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Sales growth	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	0.048	*0.036*	*0.046*	*0.043*	*0.047*	*0.035*	*0.047*	*0.033*
Controlling owners' cash flow stake	-0.039	-0.116	-0.070	-0.045	-0.009	-0.051	-0.019	-0.015
	0.656	*0.207*	*0.433*	*0.608*	*0.905*	*0.516*	*0.808*	*0.843*
Proportionality		0.189				0.181		
		0.000				*0.000*		
Absolute disproportionality			-0.416				-0.254	
			0.046				*0.036*	
Relative disproportionality				-0.001				-0.003
				0.200				*0.001*
Constant	3.523	3.410	3.537	3.522	3.517	3.404	3.524	3.517
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.138*	*0.141*	*0.138*	*0.137*	*0.138*	*0.141*	*0.138*	*0.138*
N	*4097*	*4097*	*4097*	*4097*	*4097*	*4097*	*4097*	*4097*

Table 6, Estimation on Cross-Section Data with Fixed Country Effects, All 14 Western European Countries, Average of Period 1996-1998

This table reports coefficients estimates from the regression including all 14 Western European countries. The used data are the averages of yearly observations in the period 1996-1998. The explanatory variables are described in Table 1 and summary statistics are provided in Table 2. The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. p-values are reported in italics.

Dependent variable	**Tobin's Q**			**Tobin's Q**		
Controlling owners	**Largest owner**			**Group of large owners**		
	Model 5	Model 6	Model 7	Model 5	Model 6	Model 7
Firm size	-0.116	-0.122	-0.122	-0.116	-0.121	-0.123
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.227	-0.234	-0.233	-0.225	-0.234	-0.237
	0.122	*0.114*	*0.114*	*0.124*	*0.113*	*0.108*
Assets' tangiblity	-1.821	-1.811	-1.828	-1.827	-1.818	-1.829
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Sales growth	0.005	0.004	0.005	0.005	0.004	0.005
	0.041	*0.050*	*0.051*	*0.040*	*0.048*	*0.039*
Controlling owners' cash flow stake	-0.106	-0.057	-0.029	-0.054	-0.023	-0.008
	0.244	*0.529*	*0.740*	*0.492*	*0.767*	*0.916*
Instruments						
Dual class shares (DCS)	-0.259			-0.256		
	0.000			*0.000*		
Pyramid (PYR)	-0.110			-0.103		
	0.016			*0.020*		
Cross holding (CRO)	0.393			0.407		
	0.085			*0.074*		
Other type of disproportionality	-0.213			-0.207		
	0.219			*0.235*		
Interactions						
Absolute disproportionality * DCS		-0.621			-0.504	
		0.006			*0.003*	
Absolute disproportionality * PYR		-0.011			-0.015	
		0.972			*0.923*	
Absolute disproportionality * CRO		-0.351			0.119	
		0.575			*0.757*	
Absolute disproportionality * OTH		-0.885			-0.738	
		0.254			*0.081*	
Relative disproportionality * DCS			-0.003			-0.001
			0.180			*0.725*
Relative disproportionality * PYR			0.001			-0.002
			0.693			*0.543*
Relative disproportionality * CRO			0.004			0.044
			0.776			*0.175*
Relative disproportionality * OTH			0.105			0.060
			0.052			*0.281*
Constant	3.590	3.525	3.519	3.581	3.522	3.518
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.143*	*0.138*	*0.139*	*0.143*	*0.138*	*0.137*
N	*4097*	*4097*	*4097*	*4097*	*4097*	*4097*

Table 7, Estimation on Cross-Section Data with Fixed Country Effects, UK & Ireland, Average of Period 1996-1998

This table reports coefficients estimates from the regression only including firms in UK and Ireland. The used data are the averages of yearly observations in the period 1996-1998. The explanatory variables are described in Table 1 and summary statistics are provided in Table 2 The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. p-values are reported in italics.

Dependent variable	**Tobin's Q**				**Tobin's Q**			
Controlling owners	**Largest owner**				**Group of large owners**			
	Model 2(a)	Model 3(a)	Model 4(a)	Model 5(a)	Model 2(a)	Model 3(a)	Model 4(a)	Model 5(a)
Firm size	-0.101	-0.116	-0.114	-0.099	-0.098	-0.115	-0.113	-0.096
	0.001	*0.000*	*0.000*	*0.001*	*0.001*	*0.000*	*0.000*	*0.001*
Leverage	0.109	0.084	0.088	0.111	0.106	0.079	0.086	0.107
	0.652	*0.734*	*0.722*	*0.648*	*0.660*	*0.747*	*0.730*	*0.658*
Assets' tangiblity	-2.090	-2.102	-2.113	-2.083	-2.086	-2.076	-2.111	-2.077
	0.037	*0.035*	*0.036*	*0.038*	*0.038*	*0.036*	*0.036*	*0.039*
Sales growth	0.241	0.241	0.250	0.240	0.239	0.236	0.249	0.238
	0.019	*0.019*	*0.015*	*0.020*	*0.020*	*0.022*	*0.016*	*0.021*
Controlling owners' cash flow stake	0.182	0.190	0.201	0.176	0.206	0.280	0.175	0.197
	0.413	*0.389*	*0.367*	*0.428*	*0.168*	*0.075*	*0.243*	*0.196*
Proportionality	0.332				0.338			
	0.000				*0.000*			
Absolute disproportionality		-2.766				-2.161		
		0.000				*0.000*		
Relative disproportionality			-0.002				-0.002	
			0.000				*0.000*	
Instruments								
Dual Class Shares (DCS)				-0.362				-0.360
				0.000				*0.000*
Pyramid (PYR)				-0.208				-0.222
				0.002				*0.002*
Cross Holdings (CRO)				0.408				0.405
				0.245				*0.242*
Other Instruments (OTH)				-0.481				-0.484
				0.003				*0.003*
Constant	3.506	3.807	3.734	3.834	3.475	3.768	3.726	3.808
	0.001	*0.000*	*0.000*	*0.000*	*0.001*	*0.000*	*0.000*	*0.000*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.144*	*0.14*	*0.135*	*0.145*	*0.145*	*0.143*	*0.135*	*0.146*
N	*1692*	*1692*	*1692*	*1692*	*1692*	*1692*	*1692*	*1692*

Table 8, Estimation on Cross-Section Data with Fixed Country Effects, Scandinavian Countries, i.e. Denmark, Sweden, Norway, and Finland, Average of Period 1996-1998

This table reports coefficients estimates from the regression only including firms in Scandinavian countries. The The used data are the averages of yearly observations in the period 1996-1998. The explanatory variables are described in Table 1 and summary statistics are provided in Table 2. The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. p-values are reported in italics.

Dependent variable	**Tobin's Q**				**Tobin's Q**			
Controlling owners	**Largest owner**				**Group of large owners**			
	Model 2(b)	Model 3(b)	Model 4(b)	Model 5(b)	Model 2(b)	Model 3(b)	Model 4(b)	Model 5(b)
Firm size	-0.129	-0.132	-0.133	-0.126	-0.131	-0.134	-0.136	-0.127
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.811	-0.829	-0.845	-0.791	-0.793	-0.827	-0.825	-0.772
	0.001	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*
Assets' tangiblity	-1.414	-1.452	-1.527	-1.349	-1.396	-1.480	-1.511	-1.333
	0.069	*0.060*	*0.050*	*0.083*	*0.071*	*0.055*	*0.052*	*0.085*
Sales growth	0.116	0.117	0.117	0.120	0.116	0.118	0.117	0.120
	0.028	*0.034*	*0.034*	*0.027*	*0.028*	*0.034*	*0.034*	*0.027*
Controlling owners' cash flow stake	-0.208	-0.159	-0.098	-0.210	-0.180	-0.146	-0.117	-0.179
	0.390	*0.507*	*0.678*	*0.383*	*0.390*	*0.483*	*0.589*	*0.404*
Proportionality	0.302				0.295			
	0.007				*0.007*			
Absolute disproportionality		-0.761				-0.355		
		0.023				*0.043*		
Relative disproportionality			0.002				0.014	
			0.652				*0.640*	
Instruments								
Dual Class Shares (DCS)				-0.309				-0.310
				0.005				*0.006*
Pyramid (PYR)				-0.213				-0.197
				0.051				*0.066*
Cross Holdings (CRO)				0.712				0.693
				0.265				*0.284*
Other Instruments (OTH)				-0.308				-0.306
				0.218				*0.219*
Constant	3.277	3.540	3.535	3.491	3.275	3.554	3.526	3.483
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.284*	*0.277*	*0.273*	*0.284*	*0.284*	*0.276*	*0.273*	*0.284*
N	*606*	*606*	*606*	*606*	*606*	*606*	*606*	*606*

Table 9, Estimation on Cross-Section Data with Fixed Country Effects, German Legal Origin, i.e. Germany, Austria, and Switzerland, Average of Period 1996-1998

This table reports coefficients estimates from the regression only including firm in countries with German legal origin, i.e. Germany, Austria, and Switzerland. The used data are the averages of yearly observations in the period 1996-1998. The explanatory variables are described in Table 1 and summary statistics are provided in Table 2. The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. p-values are reported in italics.

Dependent variable	**Tobin's Q**				**Tobin's Q**			
Controlling owners	**Largest owner**				**Group of large owners**			
	Model 2(b)	Model 3(b)	Model 4(b)	Model 5(b)	Model 2(b)	Model 3(b)	Model 4(b)	Model 5(b)
Firm size	-0.186	-0.185	-0.185	-0.188	-0.185	-0.183	-0.183	-0.186
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.939	-0.946	-0.950	-0.944	-0.936	-0.942	-0.943	-0.941
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Assets' tangiblity	-2.157	-2.181	-2.172	-2.189	-2.164	-2.190	-2.192	-2.195
	0.003	*0.003*	*0.003*	*0.003*	*0.003*	*0.002*	*0.002*	*0.003*
Sales growth	0.065	0.064	0.064	0.064	0.065	0.064	0.064	0.064
	0.220	*0.226*	*0.227*	*0.227*	*0.221*	*0.228*	*0.228*	*0.228*
Controlling owners' cash flow stake	0.024	-0.011	-0.024	0.016	0.088	0.045	0.048	0.081
	0.880	*0.937*	*0.864*	*0.918*	*0.573*	*0.765*	*0.761*	*0.609*
Proportionality	-0.063				-0.075			
	0.500				*0.391*			
Absolute disproportionality		0.039				0.006		
		0.905				*0.976*		
Relative disproportionality			-0.001				0.003	
			0.714				*0.921*	
Instruments								
Dual Class Shares (DCS)				0.051				0.061
				0.581				*0.507*
Pyramid (PYR)				0.014				0.027
				0.904				*0.798*
Cross Holdings (CRO)				0.185				0.188
				0.515				*0.508*
Other Instruments (OTH)				-0.044				-0.050
				0.828				*0.807*
Constant	4.404	4.394	4.397	4.396	4.376	4.367	4.363	4.356
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.135*	*0.135*	*0.135*	*0.132*	*0.135*	*0.135*	*0.135*	*0.132*
N	*833*	*833*	*833*	*833*	*833*	*833*	*833*	*833*

Table 10, Estimation on Cross-Section Data with Fixed Country Effects, Southern Europe, i.e. Belgium, France, Italy, Portugal and Spain, Average of Period 1996-1998

This table reports coefficients estimates from the regression only including firms in Southern European countries, i.e. Belgium, France, Italy, Portugal and Spain. The used data are the averages of yearly observations in the period 1996-1998. The explanatory variables are described in Table 1 and summary statistics are provided in Table 2. The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. p-values are reported in italics.

Dependent variable	**Tobin's Q**				**Tobin's Q**			
Controlling owners	**Largest owner**				**Group of large owners**			
	Model 2(d)	Model 3(d)	Model 4(d)	Model 5(d)	Model 2(d)	Model 3(d)	Model 4(d)	Model 5(d)
Firm size	-0.065	-0.065	-0.065	-0.063	-0.067	-0.067	-0.066	-0.065
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.127	-0.114	-0.134	-0.131	-0.118	-0.114	-0.125	-0.121
	0.306	*0.341*	*0.282*	*0.292*	*0.338*	*0.350*	*0.313*	*0.328*
Assets' tangiblity	-1.574	-1.579	-1.571	-1.581	-1.561	-1.567	-1.542	-1.567
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Sales growth	0.001	0.001	0.002	0.001	0.001	0.001	0.002	0.001
	0.007	*0.004*	*0.020*	*0.002*	*0.009*	*0.005*	*0.000*	*0.004*
Controlling owners' cash flow stake	-0.255	-0.231	-0.276	-0.267	-0.242	-0.234	-0.278	-0.256
	0.005	*0.010*	*0.003*	*0.006*	*0.002*	*0.002*	*0.000*	*0.002*
Proportionality	-0.022				-0.025			
	0.756				*0.738*			
Absolute disproportionality		0.397				0.250		
		0.412				*0.397*		
Relative disproportionality			-0.002				-0.008	
			0.508				*0.008*	
Instruments								
Dual Class Shares (DCS)				-0.012				-0.014
				0.887				*0.864*
Pyramid (PYR)				0.002				0.006
				0.981				*0.946*
Cross Holdings (CRO)				-0.393				-0.372
				0.001				*0.001*
Other Instruments (OTH)				0.381				0.401
				0.515				*0.496*
Constant	2.746	2.714	2.737	2.730	2.755	2.729	2.739	2.737
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.129*	*0.13*	*0.129*	*0.128*	*0.129*	*0.13*	*0.131*	*0.129*
N	*966*	*966*	*966*	*966*	*966*	*966*	*966*	*966*

Table 11, Estimation on Cross Section Data with Fixed Country Effects, All 14 Western European Countries, Average of Period 1996-1998

This table reports coefficients estimates from the regression including all 14 Western European countries. The used data are the averages of yearly observations in the period 1996-1998. The explanatory variables are described in Table 1. The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. The coefficients are reported in bold, and the p-values are reported in italics.

Dependent variable	**Return on Assets**				**Return on Assets**			
Controlling owners	**Largest owner**				**Group of large owners**			
	Model I	Model II	Model III	Model IV	Model I	Model II	Model III	Model IV
Firm size	0.012	0.012	0.012	0.012	0.011	0.012	0.011	0.011
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.052	-0.052	-0.052	-0.052	-0.052	-0.052	-0.052	-0.052
	0.011	*0.011*	*0.011*	*0.011*	*0.011*	*0.011*	*0.010*	*0.011*
Assets' tangiblity	0.175	0.175	0.175	0.175	0.176	0.176	0.176	0.176
	0.027	*0.027*	*0.027*	*0.027*	*0.027*	*0.027*	*0.026*	*0.026*
Sales growth	-4.04E-05	-4.05E-05	-4.04E-05	-3.66E-05	-4.53E-05	-4.44E-05	-4.51E-05	-3.49E-05
	0.822	*0.822*	*0.822*	*0.839*	*0.802*	*0.806*	*0.802*	*0.847*
Controlling owners' cash flow stake	0.021	0.021	0.021	0.020	0.011	0.010	0.010	0.010
	0.012	*0.015*	*0.016*	*0.014*	*0.262*	*0.278*	*0.284*	*0.273*
Proportionality		-2.23E-04				0.001		
		0.966				*0.822*		
Absolute disproportionality			-4.84E-04				-0.011	
			0.983				*0.348*	
Relative disproportionality				-3.15E-05				-8.36E-05
				0.528				*0.303*
Constant	-0.182	-0.182	-0.182	-0.182	-0.181	-0.182	-0.181	-0.181
	0.036	*0.035*	*0.036*	*0.036*	*0.037*	*0.035*	*0.037*	*0.037*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.035*	*0.034*	*0.034*	*0.034*	*0.034*	*0.034*	*0.034*	*0.034*
N	*4175*	*4175*	*4175*	*4175*	*4175*	*4175*	*4175*	*4175*

Table 12, Estimation on Cross Section Data with Fixed Country Effects, All 14 Western European Countries, Average of Period 1996-1998

This table reports coefficients estimates from the regression including all 14 Western European countries. The used data are the averages of yearly observations in the period 1996-1998. The explanatory variables are described in Table 1. The left side of the table reports the results when the controlling owner is assumed to be the largest owner measured by votes, whereas the right side assumes that the controlling owner is the group of large owners, which individually holds at least 10 percent of the votes. p-values are reported in italics.

Dependent variable	**Return on Assets**			**Return on Assets**		
Controlling owners	**Largest owner**			**Group of large owners**		
	Model V	Model VI	Model VII	Model V	Model VI	Model VII
Firm size	0.012	0.012	0.012	0.012	0.012	0.012
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.051	-0.052	-0.052	-0.052	-0.053	-0.052
	0.011	*0.011*	*0.011*	*0.010*	*0.010*	*0.011*
Assets' tangiblity	0.175	0.175	0.175	0.176	0.176	0.177
	0.027	*0.027*	*0.027*	*0.026*	*0.026*	*0.026*
Sales growth	-5.25E-05	-4.48E-05	-3.94E-05	-5.64E-05	-4.75E-05	5.00E-07
	0.771	*0.803*	*0.828*	*0.755*	*0.792*	*0.998*
Controlling owners' cash flow stake	0.020	0.020	0.020	0.009	0.009	0.009
	0.020	*0.017*	*0.019*	*0.337*	*0.318*	*0.314*
Instruments						
Dual class shares (DCS)	-0.006			-0.006		
	0.250			*0.197*		
Pyramid (PYR)	0.005			0.004		
	0.328			*0.466*		
Cross holding (CRO)	-0.033			-0.036		
	0.015			*0.010*		
Other type of disproportionality	-0.014			-0.016		
	0.118			*0.089*		
Interactions						
Absolute disproportionality * DCS		0.003			-0.002	
		0.902			*0.906*	
Absolute disproportionality * PYR		0.010			-0.007	
		0.762			*0.614*	
Absolute disproportionality * CRO		-0.231			-0.114	
		0.002			*0.000*	
Absolute disproportionality * OTH		-0.069			-0.048	
		0.134			*0.116*	
Relative disproportionality * DCS			0.000			3.33E-04
			1.000			*0.270*
Relative disproportionality * PYR			-2.16E-05			-3.63E-04
			0.860			*0.224*
Relative disproportionality * CRO			-0.004			-0.010
			0.001			*0.008*
Relative disproportionality * OTH			-0.002			-4.38E-04
			0.402			*0.818*
Constant	-0.183	-0.183	-0.183	-0.181	-0.181	-0.182
	0.036	*0.036*	*0.036*	*0.038*	*0.037*	*0.036*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	*0.034*	*0.034*	*0.034*	*0.034*	*0.034*	*0.033*
N	*4175*	*4175*	*4175*	*4175*	*4175*	*4175*

Table 13, Voting Premiums in Western Europe

This table shows the average and median voting premium from Nenova's (2003) study of the relative price of superior to limited voting shares. Firms in Austria, and Ireland were not included in Nevona (2003), whereas there is no firms with dual class shares in Belgium, Portugal and Spain.

	Voting premium		N	Share of all firms with dual class shares
	Mean	Median		
Denmark	0.0084	0.0029	30	0.462
Finland	-0.0503	0.0052	21	0.447
France	0.2805	0.2747	9	0.600
Germany	0.0950	0.0493	65	0.556
Italy	0.2936	0.2993	62	0.838
Norway	0.0583	0.0438	15	1.000
Sweden	0.0104	0.0043	43	0.283
Switzerland	0.0544	0.0147	36	0.404
United Kingdom	0.0957	0.0721	27	0.066