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MORTEN BENNEDSEN[†] AND KASPER MEISNER NIELSEN[‡]

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JEL CLASSIFICATIONS: G30, G32, G34 and G38
KEYWORDS: Ownership Structure, Dual Class Shares, Pyramids, EU company laws.

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1 Introduction

The European Commission has initiated a number of policy proposals directed at affecting the distribution of ownership and control in European companies.[1] A common trend in these initiatives is to promote the so-called "principle of proportionality", which states that it is desirable to have proportional distributions of cash flow and control rights among investors in publicly listed corporations. According to the principle of proportionality it is undesirable to use instruments - such as dual class shares, pyramidal ownership structures, cross ownership, golden shares and voting caps - that create a wedge between the nominal income rights and the voting rights that the ultimate owners of a public corporation possess. In this paper we scrutinize the foundation for this principle in a sample of over 4,000 publicly traded corporations from 14 Western European countries.

Ownership concentration provides two effects on the governance of corporations: An incentive effect which makes the monitoring of management more efficient and an entrenchment effect which makes it easier for opportunistic owners to behave in a manner that enriches 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, Djankov, Fan and Lang 2002, Cronqvist and Nilsson 2003). Thus, the present evidence

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[1]The EU Action Plan on 'Modernizing Company Law and Enhancing Corporate Governance in the EU' from 2003 suggests prohibiting the listing of "abusive" pyramids on the stock exchange and to "examine the consequences of an approach aiming at achieving a full shareholder democracy (one share - one vote)". Backed by the recommendations of the Final Report of the High Level Group of Company Law Experts (Winter et al. 2002), the Commission previously proposed the so-called Break-Through rule allowing owners of 75 pct. or more of the cash flow rights in a corporation to exercise control even if they possess less than 50 pct. of the votes. This proposal was later removed due to political obstacles.

suggests that corporations wishing to maximize firm value should obey the "principle of proportionality".

We confirm the negative impact of disproportional ownership structures on firm value in our large sample of European firms. In addition we take the analysis two important steps forward: The first is to separate the effect of different instruments to create disproportional ownership structures. In particular, it is shown that creating disproportional ownership structures through the use of dual class shares destroys more value than creating disproportional ownership structures through pyramids, which again destroys significantly more value than cross ownership and other instruments. Hence, we show that it is not disproportionality as such that destroys firm value; rather the reduction in value comes from the particular instrument used to create a wedge between ownership and control.

The second step is to document that the impact of different instruments depends on the level of legal protection of outside investors. Theoretically, better investor protection provides stronger incentives for managers 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 they are not monitored closely by large controlling owners. Similarly, the controlling owners' entrenchment opportunities may also be lower in countries with good investor protection.

We interact our measures of disproportional ownership structures with measures of legal investor protection taken from La Porta *et.al.* (1998). It is shown that the value discount of disproportional ownership generally

increases with the level of investor protection and that this effect in particular is very significant for dual class shares and pyramids. For countries with inadequate investor protection, we find no significant impact of these instruments, hence, we provide evidence that disproportional ownership structures and legal investor protection substitute governance mechanisms from the perspective of outside investors.

The results of the present paper have important policy implications for the harmonization of EU company laws. Disproportionality decreases firm value and in particular disproportionality created through the use of dual class shares. Thus, on the one hand, this may provide arguments in favor of policy proposals and regulative initiatives that promote the principle of proportionality and make it less attractive to choose dual class shares, pyramids and other instruments. On the other hand, it is also shown that the desirability of such proposals varies significantly across countries and in particular depends on the degree of investor protection on the national level. While limiting the use of dual class shares and pyramids can increase firm value in Northern Europe, this is unlikely to be true for firms in Southern European countries, where these instruments can function as a substitute for investor protection. Our analysis, therefore, supports the view that currently one size does not fit all countries with respect to the harmonization of corporate laws and that high investor protection is a prerequisite for a stringent implementation of the principle of proportionality within the European Union.

The paper proceeds as follows: In the next section we present our sample of Western European firms and discuss the data. Section 3 provides a picture of the distribution of ownership and the use of disproportional-

ity instruments in Europe. Section 4 presents the results of our analysis: First, we confirm the negative relationship between disproportional ownership structures and firm value in Western European firms. Second, we disentangle the source of this negative relationship by separating the effects of the instruments that created the disproportionality. Third, we analyze the connection between disproportionality and investor protection and show that the negative impact of disproportional ownership structure is stronger in countries with good investor protection. Fourth, we analyze the impact of disproportionality on earnings performance. Section 5 anlyses the robustness of our results. Finally, section 6 discusses the policy implications of our findings both with respect to creating an internal capital market within the EU and with respect to national codes and principles for good corporate governance.

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 traded corporations in eight East Asian countries, they show that ownership concentration in itself increases firm value, but that a 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 mechanisms that are driving the results. However, their sample is dominated by pyramidal ownership in Asian business groups and they are therefore not able to disentangle which disproportionality instrument is associated with the valuation discount. Lins (2003) investigates firm performance and managerial owner-

ship in 1000+ corporations in 18 emerging markets and finds that firm value is reduced whenever votes are more concentrated than cash flow. Gompers, Ishii and Metrick (2004) analyze a sample of US firms with dual class shares and show that the relationship of firm value to managerial 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 Claessens *et al.* study of Asian firms. Consistent evidence is provided by Gompers *et al.* where sales growth, capital expenditures and R&D spending are regressed on managerial ownership. Entrenched managers underinvest, whereas managers with high cash flow rights pursue more aggressive investment strategies. 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 performance, an effect that is most significant when these controlling minority shareholders are families. In a sample of 174 Finnish firms Maury and Pajuste (2004) document that firm value decreases if large owners control firms through disproportional ownership structures.

These papers all provide evidence that the concentration of ownership and control is associated with both incentive and entrenchment effects. This insight is confirmed currently in a sample of 4,000+ Western European publicly traded firms. Since European capital markets are different from capital markets in emerging countries and in the US (La Porta, Lopez-de-Silanes and Shleifer 1999), the finding that there are incentives and entrenchment effects in a large sample of European firms is important in itself. How-

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ever, compared to the above studies, the main contribution of this paper is to separate the effect of disproportionality by types of instruments, i.e. to investigate if instruments such as 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 vast 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 incentive and entrenchment effects. This study has little to say about ownership concentration as such, our focus is instead on the instruments behind the separation of ownership and control.

The consequences of disproportional ownership structures have furthermore been documented through estimating the voting premium 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 seems to be higher in countries with low investor protection and the 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 the general argument described above. With respect to firm value, we argue that dual class shares may also increase the value of better monitoring incentives. We show that the aggregate effect on firm value of dual class shares is negatively related to 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.[2] Danish firms were not included in Faccio and Lang's study, whereas we were able to extend the number of Swedish firms from 245 to 335 implying that we have ownership information on 5,521 Western European firms. All ownership variables are defined according to Faccio and Lang (2002).

These data on ownership structure and firm organization are merged with accounting data from Worldscope from 1996 to 1998. We use the name of the firm as the identifier between the two data sets. Matching firm names 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, where 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 mainly due to firms missing in Worldscope and, to a smaller extent, to shortcomings in the matching procedure and deviations between Faccio and Lang's data and Worldscope.

Our analysis seeks to examine the effects of disproportional ownership structures on firm value, measured by Tobin's Q, where we use the standard definition that Q equals market value of equity plus book value of debt over

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[2]The ownership structures of Danish and Swedish firms are obtained from Greens and SIS Ägarservice, respectively.

book value of assets. A potential problem with this measure of Q arises for firms with dual class shares. The superior voting shares can be either publicly or privately held. Firm value is calculated on the basis of the publicly traded shares and therefore assumes that the price of the superior voting shares equals the price of the limited voting shares for those firms with privately held superior voting shares. We thereby assume that the superior voting shares (SVS) carry zero voting premium. Obviously this assumption might provide a bias that, in theory, can drive the valuation results, since firms with dual class shares might be valued incorrectly. We show that this possibility is inconsistent with the literature on voting premia: Value of control is *decreasing* in the level of investor protection (Nenova 2003), whereas it is shown that the negative impact of disproportional ownership structure on firm value is *increasing* in investor protection.

In the regressions we control for a wide range of firm characteristics that are likely to affect firm performance (see Table 1 for a definition of the explanatory variables). To control for size effects, we include sales. We include leverage to control for firms in financial distress, while both asset tangibility and sales growth 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 the control variables; we therefore exclude 314 firms where either market value, sales, sales growth or asset tangibility are missing. We further exclude 5 firms with assets under 1 million dollars and 4 firms with extreme sales growth. Thus, the empirical analysis is carried out with 4,096 observations.[3]

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[3]We are missing adequate information on the return on assets for 46 of the 4,096 firms. Thus, in Section 4.5, where we analyze the link between disproportional ownership structures and earnings performance, the number of observations is reduced to 4,050.

The merged sample is a representative sub sample of Faccio and Lang's data with respect to the employment of disproportionality instruments. Table 2 provides summary statistics on country and regional levels. Average Tobin's Q on the country level increases with the degree of investor protection, which is consistent with evidence from La Porta *et.al.* (2002).

3 The pattern of disproportional ownership structures in Western European firms

Table 3, which depicts the use of instruments to separate cash flow and control in Western Europe, shows the share of firms with dual class shares, pyramidal ownership, cross ownership and other instruments. The last group is defined as the residual group. These firms have disproportional ownership structures that do not belong to the three former groups, e.g. they have either restriction on voting rights (voting caps) or some form of government control through golden shares.

The frequency of these four groups differs across countries. Dual class shares are widely used in Denmark, Finland, Italy, Sweden, Switzerland and, surprisingly, the 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 are less pronounced in Finland and Switzerland. Cross-holdings are rare and only present in Austria, Germany, Italy, Norway, Sweden and the United Kingdom.[4]

Apart from the differences in the frequency of these instruments as laid out in Table 3, the legal definition of each instrument varies from country

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[4]Overall, 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 differs significantly between Anglo-Saxon countries and Continental Europe.

to country. Dual class shares can be issued without any restrictions in Austria, Ireland and Switzerland, whereas a one-share-one-vote ownership structure is required in Belgium and, in principle, Norway.[5] A majority of the other European countries have a cap on the proportion of the non-voting shares that can be issued. Limited voting shares (LVS) are not allowed to exceed threshold levels of 50 pct. of the nominal capital in Germany, Italy, Portugal and Spain, and 25 pct. in France. Denmark, Finland and Sweden have imposed a maximum voting ratio of 10 to 1 between SVS and LVS (with potential "grandfather"-clauses that provide exemptions for older firms with different voting ratios when the rules where implemented), whereas non-voting shares have been outlawed in the UK since 1968.

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.[6] Similarly, in Denmark and Sweden, a 10:1 voting ratio between SLVs and LVSs is the most common, since it is applied by almost all firms with dual class shares in both countries.[7] In France, the firms with dual class shares are primarily privatized state-owned enterprises.

Figure 1 illustrates the importance of the combined effect of the prevalence of instruments and the distribution of ownership by showing the distribution of cash flow and votes for the European firms in our gross sample of 4,410 firms. To save space, we group the firms into four regions according to their legal origin (see La Porta *et al.* 1998) and focus on the ownership

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[5]Departures from the one-share-one-vote principle in Norway require government approval. Our data show that these exceptions are granted frequently.

[6]Becht and Böhmer (2001)

[7]Bennedsen and Nielsen (2004)

of the largest owner.[8]

The firms that obey the proportionality principle are located on the 45-degree line, which we denote the "proportionality line" in Figure 1. In all countries, except Sweden, these constitute a majority of all firms.[9] The two trend lines illustrate the average degree of disproportionality as a function of the cash flow of the largest owner, and from these, it is evident that ownership structures in the two Anglo-Saxon countries generally are more proportional than in Continental Europe. In Continental Europe, disproportionality instruments are used to concentrate control in the hands of the largest owners, whereas in the UK and Ireland, the typical ownership structure has a more even distribution of ownership and control even in the presence of these instruments.[10] Interestingly, in Scandinaivia there is even a few firm located underneeth the proportionality line. In these firms the largest owner possesses more cash flow than votes because the SVS only account for a trivial fraction (less than 5 pct.) of the total nominal capital.

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[8]From Figure 1 and a similar - unreported - figure for the group of largest owners, note that most firms in all countries have some form of concentrated ownership. In most firms, the group of large owners possesses more than 20 percent of both cash flow and votes. This is consistent with evidence in Barca and Becht (2001), Gugler (2002) and Faccio and Lang (2002)

[9]The distribution of the point mass in Figure 1 becomes important when we interpret our empirical results in Sections 4 and 5. Figure 1 can further be used to illustrate the two measures of disproportionality we apply in the econometric analysis below. The *absolute disproportionality* is defined as votes minus cash flow (in percent) and the *relative disproportionality*, which equals votes over cash flow. In the figure absolute disproportionality is the vertical distance from a firm to the proportionality line. Similarly, the relative disproportionality measure is given by the slope on the line from the origin through the plot of votes against cash flow. Absolute disproportionality is smallest in the UK and Southern European countries and much larger in Scandinavian and German legal origin countries.

[10]The insights in Figure 1 are confirmed in the unreported numbers for mean and median ownership stakes. The mean (median) of the largest owner's cash flow stake in the UK is 18 pct. (14 pct.), whereas the mean (median) of the largest owner's cash flow stake in continental Europe is: 25 pct. (21 pct.) in Scandinavia, 43 pct. (40 pct.) in the German legal origin countries and 40 pct. (40 pct.) in Southern Europe. Similarly, the mean (median) of the largest owner's control stake in the UK is 20 pct. (16 pct.) compared to 33 pct. (30 pct.) in Scandinavia, 50 pct. (50 pct.) in German legal origin countries and 44 pct. (46 pct.) in Southern Europe.

4 Results

4.1 Simple means

Before we present the results of our regression analysis, we can illuminate the main contributions of this paper by looking at the simple means of firm value and earnings performance across ownership structures and legal origin. These are presented in Table 4.

The first part of the table yields the average and median firm value (Tobin's Q) and earnings performance (RoA) on the European level for all firms, firms that obey the principle of proportionality, use dual class shares and have a pyramidal ownership structure, respectively.

The first observation is that firms with proportional ownership on average have a higher firm value than firms with a disproportional ownership structure. For the whole sample, the mean (median) Tobin's Q for firms with proportional ownership structure is 1.36 (0.92), which is higher than the mean (median) for firms that have a disproportional ownership structure which yields 1.17 (0.88).[11]

The second insight from Table 4 is that firms using dual class shares have a significantly lower firm value than firms with a proportional ownership structure. Firms organized through corporate pyramids have a higher mean firm value than firms with dual class shares, but still have a significantly lower firm value than firms with a proportional ownership structure.

The third insight is that the value discount of disproportional ownership structures and instruments to separate ownership from control differs across regions in Europe. Following La Porta *et al.* (1998) we divide our

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[11]This difference is highly significant, but to save space, significance levels are left out in this subsection, since they will be confirmed in the regression analysis that follows.

sample into four regions: the UK & Ireland; the Scandinavian countries (Denmark, Finland, Norway and Sweden); Southern European countries (Belgium, France, Italy, Portugal and Spain), and countries inspired by the German legal system (Germany, Austria and Switzerland). According to La Porta *et al.* (1998), these four regions represent different legal systems, with outside owners in the UK and Ireland being best protected, followed by outside owners in Scandinavia. Outside owners in Southern Europe are less protected than in Scandinavia but generally slightly better protected than outside owners in countries with a German legal origin. Table 4 yields that the discount on firm value of disproportionality is economically higher in the two Northern European regions than in the two Continental European regions, which is consistent with the hypothesis that the cost of disproportional ownership structures correlates positively with the degree of investor protection.

Finally, Table 4 also indicates that there does not seem to be any observable earnings performance differences (measured by return on assets) between firms with proportional ownership structures and firms with disproportional ownership structures in either Northern or Southern Europe.

The rest of this section will provide more rigorous evidence in support of these observations.

4.2 The cost of disproportionality

We estimate a cross sectional model of the average of the three yearly observations from 1996 to 1998. This is done 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.[12] We include country specific 'fixed' effects to control for country specific firm invariant heterogeneity. This is important if our basic model omits country specific variables, that are correlated with the explanatory variables such as the level of protection of outside investors.[13]

Table 5 analyzes the relationship between ownership concentration, disproportionality and firm value as measured 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.[14] In this and all other models, we control for size, leverage (debt-to-assets ratio), asset tangibility, sales growth and industry effects.

In the sample of firms across Western Europe, there appears to be a negative, but highly insignificant effect of ownership concentration on firm value and firm performance. Hence, on the aggregate level, 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. Obviously, our result does not exclude that there could be a significant non-linear relationship, as documented by Morck *et al.* (1988). However, since the literature on these questions is extensive, they will not be further pursued here.

In Model 2 of Table 5, a dummy variable is included for whether a given firm has a proportional ownership structure, which is defined as the absence

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[12]For a number of firms 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. We also estimate the cross sectional model based on yearly observations. This has no impact on the results below.

[13]La Porta *et al.* (1999) show that the level of investor protection explains country variation in ownership and capital structures.

[14]We define the group of large owners as the joint ownership of all owners who possess more than 10 percent of the votes.

of separating instruments and an equal distribution of cash flow and votes. In both specifications this proportionality dummy is positive and significant at the 5 percent level. Hence, a proportional ownership structure is generally seen to increase firm value in publicly traded Western European firms. The effect is economically large: On average, firms with proportional ownership structures have a 15 pct. higher firm value than firms with disproportional ownership structure. This is consistent with the evidence for Asian firms provided by Claessens *et al.*, who show that firm value decreases to the extent that ownership is separated from control. The simple regression model used here has satisfactory explanatory power, with an adjusted R^2 of around 14 pct.

Models 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. Again, the marginal effects are large. A 10 pct. increase in the wedge between cash flow and control of the largest owner decreases firm value with 3.2 pct. on average, and 2.0 pct. for a similar increase for the group of largest 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, this analysis shows that investors look at whether firms have proportional ownership or not, and in the latter case, at the actual degree of disproportionality.

We conclude that our aggregate analysis provide evidence in support of 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 policy relevant questions: 1) Does it matter how firms create

disproportionality and, 2) Are the effects shaped by the legal environment a firm operates in. These questions are addressed next.

4.3 Instrument analysis: Dual class shares, pyramids and cross-ownership.

There are many ways a firm can disobey the principle of proportionality: Through the use of dual class shares where the SVSs are possessed by a small group of controlling owners; a chain of corporate ownership (pyramids) concentrating control in the hands of a few ultimate owners; a cross ownership between a pair of corporations; or, voting caps implying that none of the owners can have more than a few percent of the votes. In this section, we analyze how the value discount from disproportional ownership structures depends on which of these instruments is used.

There are a number of theoretical contributions that analyze dual class shares. In publicly 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 and Hart 1988, Harris and Raviv 1988, a.o.). In closely held firms, Bennedsen and Wolfenzon (2000) show that having a one-share-one-vote rule increases incentives to collaborate with other owners, which may increase firm value.

A priori 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 the pyramid.

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There are few theoretical studies of pyramidal ownership. The main exception is Almeida and Wolfenzon (2004), who analyze the dual question as to why pyramids arise and what determines the structure of a pyramid. Since pyramids are created to extract private benefits for the group of controlling owners, non-controlling owners should require a discount to invest in such firms. Hence, according to their argument, it would be expected that pyramids have lower firm value than firms with proportional ownership structures.

Table 6 provides evidence of the impact of different disproportionality instruments on firm value. 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 significant at the 1 percent level. The effect is economically large: The firm value of an average European firm with dual class shares is approximately 20 pct. smaller than the average firm with a proportional ownership structure. In Models 6 and 7, we look at the interaction effects of dual class shares and the degree of disproportionality 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 disproportionality 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, on average, seem to destroy firm value in the European firms in our sample. This is consistent with the argument that dual class shares entrench owners since they possess significant control without internalizing sufficiently cash flow. These results

suggest that the capital market reacts negatively to this wedge between ownership and control by discounting the value of the firm.

Similar to the value discount of dual class shares, pyramids have a negative and statistically significant effect on firm value in our sample. The estimated coefficients are smaller than those for dual class shares; however, the economic consequences are still large. On average, the firm value of the average European firm with a pyramidal ownership structure is around 8 percent lower than for the average European firm with a proportional ownership structure. The interaction effects between the two measures of disproportionality and pyramidal structure are generally insignificant.

Dual class shares and pyramids, thus, seem to have a different impact on firm value. Using an F-test, we strongly reject the null hypothesis that the effect of dual class shares and pyramids are identical. Hence, the two coefficients are both economically and statistically different: Dual class shares have a significantly stronger negative effect on firm value than pyramids.

Cross-holdings have a positive effect on firm value, which is significant at the 10 percent level. Even though the impact is much less statistically clear than for the two previous instruments, there are some indications that cross holding, on average, may increase firm value. The interaction effects between cross-holdings and the two measures of disproportionality vary in signs and are highly insignificant. Finally, the impact of other instruments is in most regressions highly insignificant, as are the interaction effects between other instruments and the two disproportionality measures. Notice, however, that firms with cross holdings and other instruments are few in number as documented in Table 3.

If we analyze the group of large owners, these results do not change. The

economic and statistical impact of dual class shares and pyramids are very similar to the analysis of the single largest owner. Again we reject the null hypothesis that the two instruments have the same impact at the 1 percent level. The effect of cross holdings is still positive and significant at the 10 percent level. Other instruments have an insignificant effect.

In summary, this section shows 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 large negative impact on firm value. In addition, dual class shares have a significantly larger negative effect on firm value than pyramids. This insight delivers important policy implications, which we will return to in the final section below.

4.4 Investor protection and the cost of disproportionality

Currently, there are a large number of studies analyzing the impact of investor protection on various topics within corporate finance and firm organization (see survey by La Porta *et.al.* 2000). In this section, we investigate whether investor protection also plays a role in explaining the impact of disproportionality instruments on firm value.

As motivation for this analysis, consider the costs and benefits of dual class shares. The principal benefit is that they reduce the opportunistic behavior of the management in firms with a significant separation of ownership and control. The main cost is the increased opportunities for controlling shareholders to extract rent from non-controlling shareholders.

Good investor protection reduces, ceteris paribus, the management's ability to engage in opportunistic behavior contrary to the interests of the owners, but it also reduces the controlling owners' ability to extract rent

from non-controlling owners.[15] However, even in firms where non-controlling shareholders are well protected, there will always be a legal scope for controlling shareholders to expropriate rent for themselves, for instance, through pecuniary and/or non-pecuniary benefits or by influencing business decisions in a way that promotes their own interests. We conclude that since both the costs and benefits of dual class shares are affected by the degree of investor protection, it is not possible to theoretically determine the exact aggregate impact on the value discount of dual class shares.

We use the two standard measures of investor protection from La Porta *et al.* (1998); anti-director and creditor rights. The anti-director rights index summarizes 6 specific decision rights granted to minority shareholders by corporate law, whereas the creditor right index measures the presence of 5 protective rights granted to creditors in case of bankruptcy. The indices increase with the level of legal investor protection and they are positively correlated. In the analysis of ownership structures and firm value, the interaction of anti-director rights with the disproportionality measures is expected a priori to be most important.

In Table 7, the two measures of investor protection are interacted with the degree of disproportionality.[16] To simplify the presentation of the results we do not report the control variables and industry effect, which are identical to the ones used throughout the analysis. We start by including the interaction of anti-director rights with the proportionality dummy. The interaction effect is positive and highly significant, whereas the proportionality dummy

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[15]This is most evident in transition economies, where insiders' insufficient ability to commit not to divert outsiders' investments has been a serious obstacle for increased foreign investment (Shleifer and Vishny 1997).

[16]Note that our basic regression model includes a fixed country effect and therefore already controls for the direct effect of the level of legal investor protection, since it is constant within each country.

becomes negative and marginally insignificant. Thus, the effect of proportional ownership structures increases with the level of investor protection, but is insignificant in countries with low levels of investor protection. A simple F-test of the net effect of a proportional ownership structure reveals that the positive effect kicks in when the anti-director rights score is 3 or higher, whereas the effect is insignificant for scores below 3.[17] Similar results are obtained when using the creditor rights index, but Model 2(c) shows that this is mainly due to the positive correlation between anti-director and creditor rights. When both terms are included, only the interaction with the anti-director index is significant. Furthermore, these results are robust towards the measure of disproportionality, since identical results are obtained when investor protection indices are interacted with the absolute degree of disproportionality. The negative effect of disproportional ownership structures increases with the level of investor protection, but the effect is only present for countries with a relatively high level of investor protection. For countries with a high level of investor protection (the UK, Ireland and Scandinavia), the negative effect of disproportional ownership structures are economically important; firms with a disproportional ownership structure and an anti-director rights score of 5 have a 20 percent lower firm value than firms with a proportional ownership structure.

Table 8 extends the analysis of the effect of disproportionality into the use of particular instruments.[18] We start by including the interaction of the two investor protection indices with the four groups of instruments in Models 5(a) and (b). At the top of Table 8, we notice that the direct effect of

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[17]The F-test of the net effect of proportional ownership structures with an anti-director rights score of 2 yields a F-statistic of 0.61, which is grossly insignificant, whereas the F-value when the score equals 3 is 7.20, which is significant at the 1 percent level.

[18]Again, control variables are not reported in Table 8.

dual class shares and pyramids disappear. All instruments enter positively, but the effects are highly insignificant. The interaction of dual class shares and anti-director rights is negative and significant at the 1 percent level. Similarly, the negative effect of pyramids on firm value increases with the level of investor protection. The net effect of dual class shares is negative and significant for investor protection scores at 2 or above, whereas the net effect of pyramids becomes significantly negative when the score is 3 or higher. The estimate of the coefficient on the interaction effect of dual class shares is almost twice as large as the estimate of the coefficient on pyramids. We use an F-test to test whether the net impact of dual class shares and pyramids is statistically different. We find that the negative effect of dual class shares is significantly higher than the effect of pyramids in countries with a high level of investor protection.[19] Model 5(c) confirms the insight from Table 7 that the anti-director rights index is the relevant measure for the interaction of the level of investor protection and disproportional ownership structures.

The residual group of firms with cross ownership and other disproportionality measures does not seem to have a strong negative impact on firm value, since the net effect in Table 8 is grossly insignificant. As mentioned previously, there are few firms and many different instruments in these residual groups; hence, we will not put to much emphasize on these results except from noticing that they are consistent with the main hypothesis about investor protection and disproportionality instruments being substitutes.

Our analysis provides evidence that proportional ownership structures

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[19]The F-test of a different net effect for dual class shares and pyramids yields an F-value of 1.23 with an anti-director rights score of 2, whereas the F-value equals 4.12 when the score equals 3, which is significant at the 5 percent level. Increasing the level of investor protection expands this difference further both statistically and economically.

increase firm value only in countries where the degree of legal investor protection is high. Hence, the results show that investor protection and disproportional ownership structures are substitutes. If inadequate protection of outside investors exists, the benefits of disproportional ownership structures, i.e. the reduced agency problem between owners and managers, outweighs the costs, i.e. the increased agency problem between controlling and non-controlling owners. If investor protection, on the other hand, is strong, then there seems to be fewer benefits from violating the principle of proportionality and investors therefore require a larger discount on such firms. This finding has important policy implications for the harmonization of European company laws, since countries in Northern Europe (the UK, Ireland and Scandinavia) generally have a higher level of investor protection than countries in Central and Southern Europe (See Table 2 and La Porta *et al.* 1998).

To substantiate this important aspect of our findings, we further divided our 14 countries into four regions.

In support of the evidence reported above, the negative effect of disproportional ownership structures is significant in the UK, Ireland and Scandinavia, whereas it is insignificant in Southern European countries and countries with a German legal system.[20] This pattern holds for all measures of disproportionality and for the decomposition into the instruments that created this disproportionality. Consistently, we also find that dual class shares have a significantly larger negative effect on firm value in Northern Europe.

To conclude this section, we emphasize that regional and cross-country variations are important. Dual class shares and pyramids destroy firm value

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[20]To save space we have decided not to report these results, but they are available upon request.

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in Northern Europe, but not necessarily so in the Central and Southern European regions where investor protection traditionally is lower. This supports the argument that dual class shares and pyramids (and possibly also other disproportionality instruments) substitute good investor protection in countries with low protection of outside investors. Again, we will postpone the discussion of the policy implications of these findings to Section 5.

4.5 The impact of disproportionality instruments on earnings performance

The analysis has so far focused on the impact of disproportionality on firm value. Table 9 shows the impact of the various measures of disproportionality on earnings performance. In general the effect of disproportional ownership structures disappears when we use return on assets as our endogenous variable. While the effects are close to zero and highly insignificant, it is important to note that the performance models based on RoA have very little explanatory power. The R^2 is only around 3 percent, compared to R^2 of around 14 percent. in our firm value analysis.

Table 10 repeats the analysis where the effects of different instruments are separated by using earnings performance as the endogenous variable. In general, the effects, which are very clear when we use Tobin's Q as endogenous variable become highly insignificant in these models. Thus, we cannot provide any evidence of dual class shares or pyramids having a significant negative impact on earnings performance in the Western European corporations. We now discuss a number of potential arguments explaining these findings.

First, as mentioned above, this could be due to the two types of models having different levels of quality. In general, the explanatory power of

the firm value models is higher than in the performance models. However, the explanatory power in the earnings 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 hypothesis could be that the value effects are driven by a systematic valuation bias due to that we misrepresent the 'true' value of the controlling ownership blocks. We have calculated Tobin's Q on the basis of the stock price from trades of minority holdings. Thus, if the controlling blocks are traded at a premium, this method implies a negative bias on the total market value of the firm. Our results cannot be driven by this potential valuation bias due to the following reasons:

First, if the results were driven by this valuation bias, then we should expect the same effect for any given concentration of control. However, we showed above that the different mechanisms gave statistically different effects on firm value. In particular, both at the European level and at the disaggregated level for countries with high investor protection, dual class shares have a statistically larger negative impact on firm value than pyramidal ownership structures.

Second, when firms have dual class shares, a voting premium is generally attached to the superior voting shares. Even in Western Europe the voting premium can be rather substantial; Nenova (2003) finds that the median voting premium varies widely from 30 percent in Italy to 0 percent in Denmark. Table 11 shows the voting premium in the 9 Western European countries included in Nenova's study. Table 11 indicates a negative correlation between the voting premium and the value discount of dual class shares. For example, we find the strongest negative effect of dual class shares

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in Scandinavia where the average voting premium is zero. If the valuation bias were driving this result, a positive correlation would exist between value discounts and voting premia. Hence, we reject that our results are driven by this valuation bias.

Finally, it may be true that disproportionality instruments generally do not affect the earnings performance of firms even though they affect valuation. This could be the case if controlling owners extract a disproportional part of the surplus in the firms they control after operations have been carried out. In this case, all owners will have an interest in profit maximization, implying that we should observe no earnings performance effect of violating the principle of proportionality. However, potential outside investors will still require a discount for investing in the firm, hence, implying that we should expect a negative effect on firm value.

5 Robustness

This section summarizes a number of robustness checks to the preceding analysis. All the results are, as shown, robust to the definition of the controlling owner. On the left side of Tables 5 through 10, we have reported the results using the cash flow and votes of the largest owner, whereas on the right side we have used the cash flows 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). Similarly, 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. None of the results reported are affected by 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. This was done because the empirical analysis relates the performance of a particular firm to the mean of the industry within the country, thus the results are likely to suffer from selection bias if the data only cover a small fraction of the total number of listed firms, which lead us to the exclude firms in Spain. This is particularly a problem if the total number of listed firms is small, which leads us to exclude firms incorporated in Belgium and Portugal. The number of firms is thereby reduced to 3,741. Again, none of the results change when firms incorporated in Belgium, Portugal and Spain are excluded. As mentioned above we have further divided the sample into the four regions based on legal origin to ascertain that our results are not driven by the large number of UK firms.

6   Policy implications

The "principle of proportionality" states that it is desirable to have proportional distributions of cash flow and control rights among the investors in publicly listed corporations.

We have shown three important results related to this principle. First, it has been confirmed that publicly traded corporations in Western Europe that obey this principle on average have a higher firm value than corporations violating this principle. Second, this discount on firm value depends on which disproportionality instrument is used; in particular, there is significantly more value reduction when using dual class shares than pyramids, whereas we find no evidence of a value reduction from other instruments. Third, disproportional ownership structures substitute investor protection, implying that such structures are more costly in countries with a high pro-

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tection of outside investors where agency problems generally are perceived to be smaller.

These findings shed new light on some recent policy issues in relationship to the creation of a common internal capital market in the European Union. During the last two decades the European Commission has worked on reforming company laws within the EU. Inspired by the Final Report of the High Level Group of Company Law Experts (Winter *et al.* 2002), the promotion of the principle of proportionality has been a recurrent theme in this harmonization process. The EU Commission views this process as an essential part of exploiting the benefits of the internal market and as a prerequisite for the integration of European capital markets. The Winter Report suggested the introduction of the much debated Break-Through rule to facilitate takeovers of firms with a disproportional ownership structure.[21] The recent EU Action Plan (2003) proposes that within the next four years "abusive" pyramids shall be prohibited from being listed on a stock exchange. Abusive pyramids are defined as holding companies whose sole or main assets are their ownership of shares in another listed company. More generally, there is an increasing focus on shareholder rights and the potential conflicts between controlling and non-controlling groups of owners.

We claim that this increased focus on shareholder rights and (some version of) the principle of proportionality are making not only an impact on policy proposals from the European Commissions, but more generally in-

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[21]The Break-Through rule states that an investor, after acquiring a certain threshold of the cash flow rights to a firm, should be able to *break through* the firm's 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 of the presence of dual class shares, should have complete control of the firm. The proposal was included in the initial version of the proposal for a new takeover directive, but was removed in the final version (See European Commission 2002, 2003)

fluence the attitude towards corporate governance in many countries both inside and outside the European Union. To back this claim we have collected 53 codes, principles and guidelines on good corporate governance[22] and analyzed to what extent they provide discussions and/or recommendations of issues concerning the distribution of cash flow and votes in corporations. Table 12 provides a summary of these findings. A total of 38 codes out of 53 deal with the conflict of interests between controlling shareholders and minority shareholders. Out of these 19 codes directly consider and/or comment on the discrepancy between cash flow rights and voting rights. Eleven codes either recommend that firms follow a one-share-one-vote principle or recommend more generally an alignment between control and ownership. Eight codes explicitly recommend not having dual class shares or comment specifically on the negative effects of having different voting rights attached to shares. Ten codes either emphasize that pyramidal ownership structures shall be disclosed and transparent or directly warn against the use of pyramids. Similarly, 11 codes propose that voting caps either should be disclosed by firms or avoided. Finally, seven codes recommend that shareholder agreements should be disclosed.

Many of the codes we have collected are from countries outside Europe; however, the tendency towards more focus on the principle of proportionality and shareholder rights is also clear within the 13 countries from our sample for which a code of conduct was found. Nine of these country codes deal with the potential conflict between controlling and non-controlling owners.

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[22]Our selection procedure is simple: We collected all codes published on the web site of the European Corporate Governance Institute (www.ecgi.org) by January 1, 2005. For each country we picked one code or principle. If a country had more than one code, we selected the most "official" looking code. We excluded Japan and South Africa due to a lack of access and Ireland due to its focus on remuneration only. In addition we included a few codes from international institutions.

Six out of these countries comment on the discrepancy between ownership and control. Austria, Denmark and Germany go one step further and recommend an alignment between control and cash flow rights. Germany even recommends not using dual class shares. Spain and Switzerland propose that firms should publish relevant information about pyramidal ownership structures. Voting caps should be avoided according to the German code and declared according to the Danish code. Interestingly, there is almost no discussion of proportionality between ownership and control in the most recent UK code from July 2003.

Given that the principle of proportionality plays such a significant role either directly or indirectly both in the process of creating an internal capital market within Europe and in the way that individual European countries think about corporate governance, it is natural to ask whether the results of this paper support these initiatives and recommendations. The answer is mixed:

First, it was shown that having a proportional ownership structure increases firm value, but not earnings performance in the total sample, which to some extent supports the principle of proportionality. However, we have found significant regional differences, which are correlated with the level of investor protection. Hence, even though a principle of proportionality can increase firm value in Northern Europe, it is not clear that this proposal would increase firm value in the rest of Europe without additional regulatory initiatives. More generally, our findings support the idea that one size does not fit all countries, i.e. that individual variation in investor protection may be an important factor determining the consequences of implementing a principle of proportionality.

Second, our findings indicate that it may be more relevant to focus on the various instruments that create disproportional ownership structures. Even though theoretically it may be hard to understand the difference between dual class shares and pyramids, these two instruments empirically have a different impact on firm valuation. Firms with dual class shares and a sufficiently disproportional ownership structure do create less value than other firms. It is worth emphasizing that these firms would have been affected by the now withdrawn EU proposal regarding the introduction of a Break-Through rule. Thus, our analysis provides some support for a Break-Through rule, but with two caveats: policy makers should understand that a Break-Through rule is likely only to increase firm value (not earnings performance) in general and this effect can only be expected in Northern Europe where investor protection is generally higher.

Third, we find a negative effect on firm value from pyramidal structures in Northern Europe; however, the value effects from pyramidal structures are generally smaller than in the case of dual class shares. The EU Action Plan (2003) suggests that in the medium term abusive pyramids should be regulated, but does not suggest specific regulation for dual class shares. Unfortunately, we have no data on holding companies and, therefore, we cannot directly analyze the impact of abusive pyramids relative to other types of disproportional ownership structures. However, the analysis strongly reaffirms the need for more knowledge about the consequences of different kinds of pyramids before such policy initiatives are implemented.

Finally, we conclude by repeating the main policy implication of the analysis. Taking the existing variation in the legal protection of outside investors as a given, it is expected that there may be significant regional

variation in the economic consequences of implementing a principle of pro-portionality. A prerequisite for exploiting the full benefit for all regions within the European Union is to have a high level of protection of outside investors. As is currently the case when investor protection varies across regions, there seems to be some truth to the claim that one size does not fit all countries with respect to regulative initiatives aimed at promoting the principle of proportionality.

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Figure 1, Largest Owner's Share of Cash Flow and Votes Across Legal Regimes
These figures plot the largest owner's share of cash flow and votes across legal regimes in Europe; the *UK & Ireland*, *Scandinavia* (Denmark, Finland, Norway and Sweden), *German origin* (Austria, Germany and Switzerland) and *Southern Europe* (Belgium, France, Italy, Portugal and Spain). Above each graph, the total number of firms (*N*), number of firms with a proportional ownership structure (*PP*), dual class shares (*DCS*) and other instruments than dual class shares, i.e. pyramid, cross-holding and other (*PCO*) are shown. These three different types of firms are marked with a triangle (*PP*), cross (*DCS*) and dot (*PCO*), respectively. All firms with a proportional ownership structure (PP) are located on the *Proportionality Line*, whereas the lines *Trend with PP* and *Trend without PP* show the coefficient on the regression of votes on cash flow with and without firms with a proportional ownership structure (*PP*), respectively.
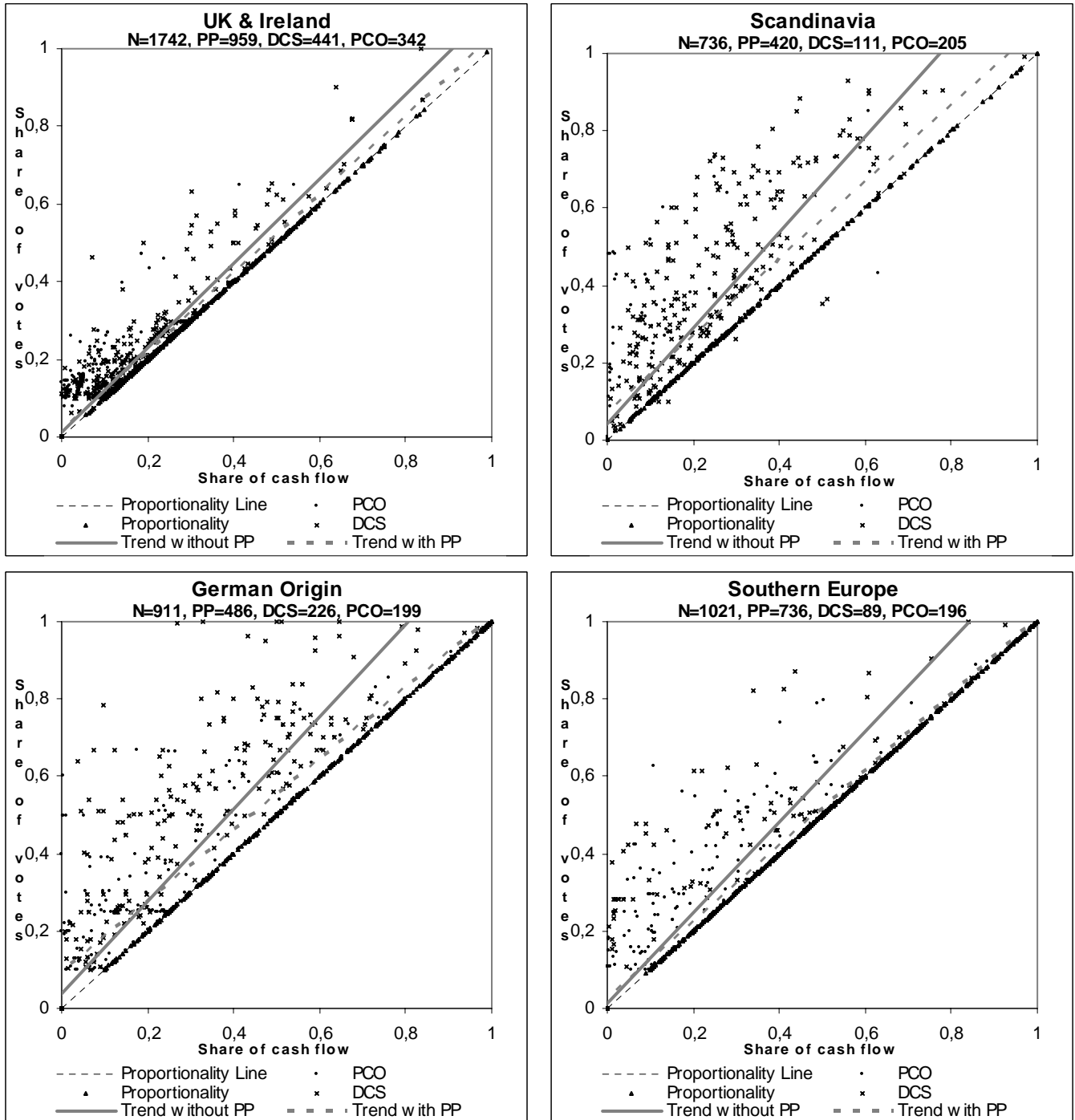
Table 1, Explanatory Variables

Firm size	Measured as log. to sales.
Leverage	Book-value of debt over book-value of total assets.
Asset tangiblity	Share of assets that 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 owner. On the left side of each regression table, the controlling owner is defined as the single largest owner measured by votes, whereas on the right side, the controlling owner is defined as the group of large owners that individually possess 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.
Pyramid (PYR)	A dummy taking the value 1 if the firm has a pyramidal ownership structure.
Cross holding (CRO)	A dummy taking the value 1 if the firm has cross holdings.
Other types 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, pyramid and cross holding.
Absolute disproportionality	The controlling owner's share of votes minus cash flow.
	The left side of the regression tables are based on the largest owner's holdings, whereas the right side focuses on the group of large owners.
Relative disproportionality	The controlling owner's share of votes over cash flow.
	The left side of the regression tables are based on the largest owner's holdings, whereas the right side focuses on the group of large owners.

Table 2, Summary Statistics, Year = 1997

This table shows the summary statistics on country level for the dependent variables, *Tobin's Q* and *Return on Assets* (RoA), as well as 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. *Firm size* is measured by sales in millions of dollars. *Leverage* is defined by book value of debt over book value of assets. *Asset tangibility* is defined as (1 - book value of intangible assets / book value of assets), while *sales growth* is the growth in sales for 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 by two variables: Anti Director Rights index (*ADR*) and Creditor Rights index (*CR*) from La Porta et al. (1998). *ADR* is measured on a scale from 0 to 6, where 0 is the lowest degree and 6 is the highest degree, while *CR* has a minimum of 0 and a maximum of 5.

Country	Tobins Q		RoA		Firm size		Leverage		Asset Tangibility		Sales Growth		N		Investor Protection	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Tobins Q	RoA	ADR	CR
Austria	0.87	0.70	0.07	0.03	671	219	0.26	0.23	0.97	0.99	0.30	0.13	90	89	2	3
Belgium	1.20	0.91	0.08	0.06	1711	245	0.27	0.24	0.95	0.99	0.59	0.14	85	85	0	2
Denmark	1.10	0.83	0.07	0.05	380	77	0.23	0.20	0.98	1.00	0.20	0.16	164	161	2	3
Finland	1.29	0.94	0.09	0.08	861	137	0.29	0.27	0.95	0.98	0.38	0.20	105	103	3	1
France	1.00	0.78	0.04	0.04	2088	214	0.24	0.22	0.91	0.96	0.31	0.13	495	491	3	0
Germany	1.23	0.85	0.04	0.04	2437	235	0.21	0.17	0.96	0.99	0.28	0.10	582	579	1	3
Ireland	1.59	1.11	0.04	0.07	572	176	0.23	0.22	0.95	1.00	0.15	0.15	60	58	4	1
Italy	0.83	0.68	0.04	0.03	2590	442	0.26	0.24	0.96	0.99	0.14	0.12	169	165	1	2
Norway	1.33	1.01	0.07	0.06	536	132	0.32	0.31	0.96	0.99	0.30	0.12	138	137	4	2
Portugal	0.78	0.70	0.04	0.04	579	149	0.25	0.24	0.93	0.99	0.20	0.17	70	67	3	1
Spain	1.08	0.85	0.06	0.05	863	213	0.19	0.16	0.97	0.99	0.51	0.15	146	143	4	2
Sweden	1.80	1.21	0.04	0.07	965	115	0.23	0.21	0.92	0.97	0.54	0.12	200	198	3	2
Switzerland	1.05	0.80	0.06	0.05	1996	281	0.26	0.24	0.97	1.00	0.15	0.09	161	160	2	1
UK	1.47	0.98	0.05	0.06	829	87	0.19	0.16	0.98	1.00	0.20	0.08	1632	1614	5	4
All countries	1.28	0.90	0.05	0.05	1316	143	0.22	0.19	0.96	1.00	0.26	0.11	4096	4050	2.64	1.93

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. 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 that use at least one instrument.

Country	N	Dual Class Shares		Pyramid		Cross Holding		Other Instruments		All Instruments	
		N	Share	N	Share	N	Share	N	Share	N	Share
Austria	90	21	0.23	23	0.26	1	0.01	0	0.00	39	0.43
Belgium	85	0	0.00	23	0.27	0	0.00	5	0.06	28	0.33
Denmark	164	48	0.29	28	0.17	0	0.00	9	0.05	75	0.46
Finland	105	46	0.44	7	0.07	0	0.00	7	0.07	56	0.53
France	495	15	0.03	72	0.15	0	0.00	0	0.00	86	0.17
Germany	582	112	0.19	137	0.24	18	0.03	3	0.01	233	0.40
Ireland	60	15	0.25	11	0.18	0	0.00	2	0.03	25	0.42
Italy	169	73	0.43	42	0.25	2	0.01	1	0.01	93	0.55
Norway	138	15	0.11	45	0.33	3	0.02	1	0.01	57	0.41
Portugal	70	0	0.00	9	0.13	0	0.00	0	0.00	9	0.13
Spain	146	0	0.00	24	0.16	0	0.00	3	0.02	27	0.18
Sweden	200	123	0.62	53	0.27	1	0.00	0	0.00	147	0.74
Switzerland	161	84	0.52	10	0.06	0	0.00	0	0.00	93	0.58
UK	1632	411	0.25	358	0.22	2	0.00	10	0.01	689	0.42
All countries	4096	963	0.24	842	0.21	27	0.01	41	0.01	1657	0.40

Table 4, The Impact of Disproportionality Instruments Across Legal Regimes

This table shows the mean and median *Tobin's Q* and *RoA* for all countries and across legal regimes. Statistics are reported for all firms, firms with a proportional ownership structure and firms with dual class shares and pyramid. A firm may appear both with dual class shares and pyramid if it has implemented both instruments. *Tobin's Q* is defined as market value of equity plus book value of debt divided by book value of assets, whereas *RoA* is defined as operating profit over book value of assets. Proportionality is a dummy for whether the firm has a proportional ownership structure.

	N	Tobin's Q		RoA	
		Mean	Median	Mean	Median
All countries					
All	4096	1.28	0.90	0.05	0.05
Proportionality	2439	1.36	0.92	0.05	0.05
Dual class shares	963	1.10	0.86	0.05	0.05
Pyramid	842	1.20	0.90	0.06	0.05
UK & Ireland					
All	1692	1.47	0.98	0.05	0.06
Proportionality	978	1.68	1.08	0.04	0.07
Dual class shares	426	1.05	0.87	0.04	0.05
Pyramid	369	1.25	0.95	0.06	0.06
Scandinavia					
All	606	1.42	0.98	0.06	0.06
Proportionality	271	1.47	0.96	0.05	0.06
Dual class shares	232	1.35	1.02	0.08	0.07
Pyramid	133	1.33	0.93	0.06	0.06
German legal origin					
All	833	1.16	0.83	0.05	0.04
Proportionality	468	1.21	0.86	0.06	0.04
Dual class shares	217	1.02	0.73	0.04	0.04
Pyramid	170	1.15	0.83	0.05	0.04
Southern Europe					
All	965	0.98	0.78	0.05	0.04
Proportionality	722	0.98	0.78	0.05	0.04
Dual class shares	88	0.83	0.63	0.04	0.03
Pyramid	170	1.05	0.82	0.06	0.05

Table 5, The Effect of Disproportional Ownership Structures on Firm Value in Western Europe
Estimation on Cross Section Data with Fixed Country Effects, Average of the Period 1996-1998
This table reports coefficient estimates from the regression including all 14 Western European countries. The data used 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 based on robust standard errors 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*
Asset tangibility	-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*
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	4096	4096	4096	4096	4096	4096	4096	4096

Table 6, The Effect of Disproportionality Instruments on Firm Value in Western Europe
Estimation on Cross-Section Data with Fixed Country Effects, Average of the Period 1996-1998
This table reports coefficient estimates from the regression including all 14 Western European countries. The data used 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 based on robust standard errors 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*
Asset 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 types of disproportionality (OTH)	-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*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	0.143	0.138	0.139	0.143	0.138	0.137
N	4096	4096	4096	4096	4096	4096

Table 7, The Effect of Disproportional Ownership Structures and Investor Protection on Firm Value in Western Europe

Estimation on Cross-Section Data with Fixed Country Effects, Average of the Period 1996-1998

This table reports coefficient estimates from the regression including all 14 Western European countries. The data used are the averages of yearly observations in the period 1996-1998. *Proportionality* and *absolute disproportionality* are interacted with the *anti-director rights* and *creditor rights* indices from La Porta et al. (1998). The control variables include firm size, leverage, asset tangibility, sales growth and the controlling owner's cash flow stake. 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 based on robust standard errors are reported in italics.

Dependent Variable	Tobin's Q					
Controlling Owners	Largest Owner					
	Model 2(a)	Model 2(b)	Model 2(c)	Model 3(a)	Model 3(b)	Model 3(c)
Proportionality						
Proportionality	-0.157	-0.103	-0.234			
	(0.101)	*(0.222)*	*(0.022)*			
Proportionality * Anti-director rights	0.100		0.079			
	(0.000)		*(0.008)*			
Proportionality * Creditor rights		0.101	0.052			
		0.000	*(0.110)*			
Absolute Disproportionality						
Absolute disproportionality (AD)				1.046	0.647	1.845
				(0.022)	*(0.183)*	*(0.001)*
AD * Anti-director rights				-0.643		-0.612
				(0.000)		*(0.000)*
AD * Creditor rights					-0.453	-0.375
					(0.019)	*(0.060)*
Control variables	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	0.147	0.146	0.147	0.144	0.142	0.144
N	4096	4096	4096	4096	4096	4096

Table 8, The Effect of Disproportional Ownership Structures and Investor Protection on Firm Value in Western Europe

Estimation on Cross-Section Data with Fixed Country Effects, Average of the Period 1996-1998

This table reports coefficient estimates from the regression including all 14 Western European countries. The data used are the averages of yearly observations in the period 1996-1998. The four disproportionality instruments (*Dual class shares*, *pyramid*, *cross holding* and *other*) are interacted with the *anti-director rights* and *creditor rights* indices from La Porta et al. (1998). The control variables include firm size, leverage, asset tangibility, sales growth and the controlling owner's cash flow stake. 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 based on robust standard errors are reported in italics.

Dependent Variable	Tobin's Q		
Controlling Owners	**Largest Owner**		
	Model 5(a)	Model 5(b)	Model 5(c)
Instruments			
Dual class shares (DCS)	0.080	0.099	0.162
	(0.420)	*(0.335)*	*(0.139)*
Pyramid (PYR)	0.083	0.047	0.125
	(0.455)	*(0.627)*	*(0.292)*
Cross holding (CRO)	0.292	0.098	0.120
	(0.423)	*(0.874)*	*(0.826)*
Other types of disproportionality (OTH)	0.324	0.423	0.608
	(0.521)	*(0.399)*	*(0.300)*
Interactions w/ Anti-Director Rights			
DCS * Anti-director rights	-0.097		-0.074
	(0.000)		*(0.025)*
PYR * Anti-director rights	-0.054		-0.043
	(0.066)		*(0.195)*
CRO * Anti-director rights	0.016		0.007
	(0.917)		*(0.964)*
OTH * Anti-director rights	-0.180		-0.141
	(0.178)		*(0.323)*
Interactions w/ Ccreditor Rrights			
DCS * Creditor rights		-0.117	-0.054
		(0.000)	*(0.193)*
PYR * Creditor rights		-0.053	-0.027
		(0.102)	*(0.460)*
CRO * Creditor rights		0.099	0.071
		(0.641)	*(0.728)*
OTH * Creditor rights		-0.240	-0.153
		(0.095)	*(0.309)*
Control variables	*YES*	*YES*	*YES*
Industry effects	*YES*	*YES*	*YES*
Adjusted R-squared	0.148	0.148	0.148
N	4096	4096	4096

Table 9, The Effect of Disproportional Ownership Structures on Earnings Performance in Western Europe
Estimation on Cross Section Data with Fixed Country Effects, Average of the Period 1996-1998

This table reports coefficient estimates from the regression including all 14 Western European countries. The data used 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 based on robust standard errors 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	0.012	0.012	0.012	0.012
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Leverage	-0.054	-0.054	-0.054	-0.054	-0.054	-0.054	-0.054	-0.054
	0.008	*0.009*	*0.009*	*0.008*	*0.008*	*0.008*	*0.008*	*0.008*
Asset tangiblity	0.164	0.164	0.164	0.164	0.165	0.165	0.165	0.165
	0.037	*0.037*	*0.038*	*0.037*	*0.037*	*0.037*	*0.037*	*0.036*
Sales growth	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	0.471	*0.465*	*0.469*	*0.471*	*0.471*	*0.467*	*0.470*	*0.471*
Controlling owners' cash flow stake	0.022	0.023	0.022	0.021	0.010	0.010	0.010	0.010
	0.010	*0.010*	*0.011*	*0.011*	*0.299*	*0.288*	*0.304*	*0.314*
Proportionality		-0.003				-0.002		
		0.497				*0.711*		
Absolute disproportionality			0.013				0.006	
			0.516				*0.774*	
Relative disproportionality				-3.91E-05				-6.03E-05
				0.441				*0.260*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	0.037	0.037	0.037	0.037	0.037	0.036	0.036	0.036
N	4050	4050	4050	4050	4050	4050	4050	4050

Table 10, The Effect of Disproportionality Instruments on Earnings Performance in Western Europe

Estimation on Cross Section Data with Fixed Country Effects, Average of the Period 1996-1998

This table reports coefficients estimates from the regression including all 14 Western European countries. The data used 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 based on robust standard errors 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	-0.053	-0.053	-0.053	-0.053	-0.053	-0.054
	0.009	*0.010*	*0.009*	*0.008*	*0.008*	*0.008*
Asset tangiblity	0.164	0.164	0.164	0.166	0.165	0.166
	0.037	*0.037*	*0.037*	*0.036*	*0.037*	*0.036*
Sales growth	0.003	0.003	0.003	0.003	0.003	0.003
	0.462	*0.468*	*0.469*	*0.464*	*0.468*	*0.469*
Controlling owners' cash flow stake	0.022	0.022	0.020	0.008	0.010	0.019
	0.014	*0.010*	*0.016*	*0.373*	*0.314*	*0.349*
Instruments						
Dual class shares (DCS)	-0.006			-0.007		
	0.216			*0.158*		
Pyramid (PYR)	0.010			0.008		
	0.030			*0.057*		
Cross holding (CRO)	-0.039			-0.042		
	0.005			*0.003*		
Other types of disproportionality (OTH)	-0.013			-0.014		
	0.169			*0.126*		
Interactions						
Absolute disproportionality * DCS		-0.001			-3.91E-04	
		0.976			*0.986*	
Absolute disproportionality * PYR		0.035			0.022	
		0.151			*0.366*	
Absolute disproportionality * CRO		-0.272			-0.284	
		0.000			*0.000*	
Absolute disproportionality * OTH		-0.070			-0.073	
		0.124			*0.106*	
Relative disproportionality * DCS			2.00E-05			5.01E-05
			0.868			*0.670*
Relative disproportionality * PYR			-3.94E-05			-7.89E-04
			0.742			*0.497*
Relative disproportionality * CRO			-0.004			-0.004
			0.001			*0.001*
Relative disproportionality * OTH			-0.002			-0.002
			0.487			*0.448*
Industry effects	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Adjusted R-squared	0.038	0.037	0.037	0.034	0.036	0.036
N	4050	4050	4050	4050	4050	4050

Table 11, Voting Premiums in Western Europe

This table shows the average and median voting premiums from Nenova's (2003) study of the relative price of superior to limited voting shares. Firms in Austria and Ireland are not included in Nevona's study and there are no firms with dual class shares in Belgium, Portugal and Spain. *N* is the number of firms where both share classes are listed on the stock exchange (number of observations in Nevova's study), whereas *Share of All Firms with Dual Class Shares* relates this to the total number of firms with dual class shares in our sample.

	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

Table 12, Survey of Corporate Governance Codes of Conduct

This table surveys codes of conduct, principles and guidelines for good corporate governance around the world. The codes were collected from the European Corporate Governance Institutes website (www.ecgi.org) as of January 1, 2005. We were able to collect codes from 48 countries and 5 international organizations (e.g. OECD). One code or principle was chosen for each country/international organization. In case a country had more than one code, the most recent and most official code was chosen. The countries are divided into three groups: *World*, *European Union* and *Western Europe*, where Western Europe corresponds to the 14 countries included in this paper. The number of available codes was 53, 23 and 13, respectively. The countries included are listed below the table. The codes from international organizations are only included in the '*World*' category.

Recommendations	World (N=53)		EU (N=23)		Western Europe (N=13)	
	N	Share	N	Share	N	Share
The Principle of Proportionality						
Discussion of conflicts of interest between controlling and minority shareholders	38	0.66	15	0.71	9	0.64
Discussion of the principle of proportionality	19	0.33	11	0.52	6	0.43
Recommends one-share-one-vote or an alignment between ownership and control	11	0.19	5	0.24	3	0.21
Disproportionality Instruments						
Recommends not using dual class shares or disclosing dual class shares	8	0.14	4	0.19	1	0.07
Recommends not using pyramidal structures or disclosing pyramidal structures	10	0.17	4	0.19	2	0.14
Recommends not using voting caps or disclosing voting caps	11	0.19	6	0.29	3	0.21
Recommends that shareholder agreements should be disclosed	7	0.12	3	0.14	1	0.07

Countries: Australia, Austria, Bangladesh, Belgium, Brazil, Canada, China, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Italy, Kenya, Lithuania, Macedonia, Malaysia, Malta, Mexico, New Zealand, Norway, Pakistan, Peru, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, The Netherlands, The Philippines, Turkey, United Kingdom and USA. *International organizations*: Commonwealth Association for Corporate Governance, European Association of Securities Dealers, International Corporate Governance Network, Latin America Corporate Governance Roundtable and OECD