Journal of Financial Economics 65 (2002) 365–395
JOURNAL OF Financial ECONOMICS
www.elsevier.com/locate/econbase

The ultimate ownership of Western European corporations☆

Mara Faccio[a,*], Larry H.P. Lang[b]

[a] Mendoza College of Business, University of Notre Dame, Notre Dame, IN 46556-5646, USA
[b] Chinese University of Hong Kong, Shatin, Hong Kong

Received 15 May 2000; accepted 26 September 2001

Abstract

We analyze the ultimate ownership and control of 5,232 corporations in 13 Western European countries. Typically firms are widely held (36.93%) or family controlled (44.29%). Widely held firms are more important in the UK and Ireland, family controlled firms in continental Europe. Financial and large firms are more likely widely held, while non-financial and small firms are more likely family controlled. State control is important for larger firms in certain countries. Dual class shares and pyramids enhance the control of the largest shareholders, but overall there are significant discrepancies between ownership and control in only a few countries.

JEL classification: G32

Keywords: Ownership structure; Corporate governance

☆We are grateful to Marco Bigelli, Lorenzo Caprio, Edith Ginglinger, Arun Khanna, John McConnell, Stefano Mengoli, Robert Pye, Gordon Roberts, Bill Schwert (the editor), George Tian, and especially Andrei Shleifer and an anonymous referee for providing helpful comments. We benefited from comments from workshop participants at the National University of Singapore, Washington University at St Louis, the Capacity Building Seminar in Manila (sponsored by the Asian Development Bank), the European Financial Management Association meeting (Athens), the European Finance Association meeting (London), the Financial Management Association meeting (Seattle), and the Scottish Institute for Research in Investment and Finance (Edinburgh). We also thank Bolsa de Valores de Lisboa, Commerzbank, Helsinki Media Blue Book, Hugin, the Union Bank of Switzerland, and the Vienna Stock Exchange for generously providing us with their data sets. Mara Faccio acknowledges research support from Università Cattolica, Milan, and MURST (research grant #MM13572931). Larry Lang acknowledges research support from a Hong Kong Earmarked Grant.

*Corresponding author.
E-mail address: mfaccio@nd.edu (M. Faccio).

PII: S0304-405X(02)00146-0

1. Introduction

Recent studies such as Shleifer and Vishny (1997), Claessens et al. (2000), and Holderness et al. (1999) suggest that Berle and Means' (1932) model of widely dispersed corporate ownership is not common, even in developed countries. In fact, large shareholders control a significant number of firms in many countries, including developed ones. To examine ownership and control by large shareholders, La Porta et al. (1999) traced the control chains of a sample of 30 firms in each of 27 countries. They documented the ultimate controlling owners and how they achieved control rights in excess of their ownership rights through deviations from the one-share-one-vote rule, pyramiding, and cross-holdings. Claessens et al. (2000) carried out a similar task for 2,980 listed firms in nine East Asian countries including Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. They found significant discrepancies between ultimate ownership and control, allowing a small number of families to control firms representing a large percentage of stock market capitalization.

This paper answers two questions. What is the structure of the ultimate ownership of Western European firms? What are the means by which owners gain control rights in excess of ownership rights? To answer these questions, we collect ultimate ownership data for a sample of 5,232 listed firms in Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the UK. We include a large number of medium- and small-sized corporations, and we include both non financial and financial companies. We measure ownership and control in terms of cash-flow and voting rights. For example, if a family owns 25% of Firm X that owns 20% of Firm Y, then this family owns 5% of the cash-flow rights of Firm Y (the product of the ownership stakes along the chain) and controls 20% of Firm Y (the weakest link along the control chain).

Western European firms are most likely to be widely held (36.93%) or family controlled (44.29%). Widely held firms are especially important in the UK. and Ireland, while family control is more important in continental Europe. Widely held firms are more important for financial and large firms, while families are more important for non financial and small firms. In certain countries, widely held financial institutions also control a significant proportion of firms, especially financial firms. In some countries of continental Europe, the State also controls a significant proportion of firms, especially the largest. Widely held corporations control few firms.

We report the use of multiple classes of shares, pyramidal structures, holdings through multiple control chains, and cross-holdings, which are devices that give the controlling shareholders control rights in excess of their cash-flow rights. Pyramiding occurs when the controlling shareholder owns one corporation through another which he does not totally own. Firm Y is held through "multiple control chains" if it has an ultimate owner who controls it via *a multitude* of control chains, each of which includes at least 5% of the voting rights at each link. "Cross-holdings" means company Y directly or indirectly controls its own stocks. Dual class shares are used by few firms in Belgium, Portugal, and Spain, but by 66.07%, 51.17%, and 41.35%

of firms in Sweden, Switzerland, and Italy. Pyramids and holdings through multiple control chains are used to control only 19.13% and 5.52% of listed firms respectively, being less important for family controlled firms and more important for firms controlled by the State and by widely held financial institutions. 53.99% of European firms have only one controlling owner. More than two-thirds of the family controlled firms have top managers from the controlling family. Overall, we find a substantial discrepancy between ownership and control in Belgium, Italy, Norway, Sweden, and Switzerland, but much less elsewhere.

Our results for the 20 largest firms differ slightly from those of La Porta et al. (1999), in that we find fewer State-controlled firms and more widely held firms, fewer pyramids, and more dual class shares. Compared to the findings of Claessens et al. (2000) for East Asia, we find that families control a higher proportion of firms; each family controls fewer firms on average; top families control a lower proportion of total stock market capitalization;[1] a higher proportion of family controlled companies have family members in top management; and the largest shareholder is less often alone, but averages much higher cash-flow rights, control rights, and ratio of cash-flow to voting rights. These differences may be due to weaker law enforcement in Asia that allows controlling owners to achieve effective control of a large number of firms by controlling and owning a smaller part of each firm.

Section 2 describes the data. Section 3 discusses ultimate ownership patterns. Section 4 discusses the means whereby owners gain control rights in excess of ownership rights and Section 5 measures the extent to which this has been achieved. Section 6 presents conclusions.

2. Data

Some of the previous studies of corporate ownership and control, such as Lins and Servaes (1999a, b), rely primarily on Worldscope. However, we find its coverage inadequate. For example, Worldscope includes only 176 of 632 Spanish listed firms at the end of 1997. In this case, we instead rely upon the Spanish Stock Exchange regulatory authority's files (Comision Nacional del Mercado de Valores, 1998) which provides quarterly information on all shareholders with at least 5% of control rights, as well as directors' ownership for all listed firms. Moreover, ownership data is sometimes missing: in this case, Worldscope reports zero ownership stakes. To ensure accuracy, we include only countries for which we can obtain alternative sources (especially primary or official) to permit cross-checking. We do not rely on Worldscope if we have an official data source (i.e., the Stock Exchange ownership files). When official data sources are not available, we collect data from alternative sources. We use Worldscope for ownership data only when information for a specific firm can not otherwise be identified. Cross-checking excludes Luxembourg, Greece,[2]

[1] Japan stands apart from the rest of East Asia in this regard: the top Japanese family controls only 0.5% of total market capitalization.

[2] In addition, Greek shares are often held in bearer form, masking the identities of their owners.

Denmark[3] and Holland[4] leaving comprehensive, reliable ownership data for 13 Western European countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the UK. For these countries, Table 1 lists the data sources for ownership and multiple classes of shares. Data limitations confined our sample to the period from 1996 to the end of 1999.[5] This is not a significant restriction since ownership structures tend to be rather stable, as noted in La Porta et al. (1999).

The European Corporate Governance Network (ECGN), too, has sponsored several studies on ownership structures within the European Union.[6] However, compliance with the European Union directive on large shareholdings (88/627/EEC) restricts meaningful cross-country analysis with non-European Union countries. In particular, the ownership measures documented in those studies represent neither ultimate ownership nor ultimate control stakes. Specifically, they do not consider the use of multiple voting shares, and simply add up direct and indirect control stakes without tracing them to the ultimate owners. The controlling owner is defined as the one who controls an absolute majority (i.e., over 50%) of voting rights, or holds enough voting rights to have de facto control. For example, French regulation defines de facto control as occurring when a person or a legal entity owns, directly or indirectly, more than 40% of voting rights and no other partners or shareholders own a higher percentage directly or indirectly (Bloch and Kremp, 1998). This corresponds to a control threshold of 40%. To illustrate the bias that this definition introduces, consider the ultimate control structure of Montedison (Italy). Montedison has two shareholders with a stake above 2%: Compart with a stake of 33.45% and Mediobanca with a stake of 3.77%. Compart is indicated in the Italian supervisory authority's files as the "ultimate" owner of Montedison. However, we found that Compart has three shareholders with stakes above 10%: Credit (11.01%), Cassa di Risparmio di Roma (10.14%), and Mediobanca (15.26%). According to our definition, Compart is the ultimate controlling shareholder of Montedison at the 20% threshold. However, at the 10% threshold, Mediobanca would be the largest ultimate owner of Montedison, with a 15.26% + 3.77% = 19.03% control stake. Furthermore, mechanisms used to secure control rights in excess of ownership rights are not systematically analyzed.

[3] La Porta et al. (1999) use Hugin for Denmark. However, Hugin covers less than 20% of all listed firms and we could not locate information from other official sources.

[4] The Stichting Toezicht Effectenverkeer (STE, the Securities Board of the Netherlands), responded to our request for data as follows: "The implementation of the 1992 Act has resulted in the list of disclosed notifications being no more than an historical overview that has been overtaken by countless events and no longer provides the desired transparency of the (Dutch) stock market. Furthermore, the file corruption will become greater with the passage of time. Given the above and the fact that the 1996 Act does not empower the STE to take any measures in this regard which would lead to an up-to-date overview, the STE does not issue this list to third parties." See also De Jong et al. (1998).

[5] Data are from 1996 for France, Germany, Italy, Switzerland, and the UK; from 1997 for Spain and Portugal; from 1998 for Sweden and Norway; and from 1999 for Austria, Belgium, Finland, and Ireland.

[6] Becht and Boehmer (1998) for Germany; Bianchi et al. (1998) for Italy; Bloch and Kremp (1998) for France; Crespi-Cladera and Garcia-Cestona (1998) for Spain; De Jong et al. (1998) for the Netherlands; Renneboog (1998) for Belgium; Goergen and Renneboog (1998) for the UK.

Over the sample period, a total of 5,547 firms were listed in these 13 countries. Of these, we excluded 167 firms whose ownership was not recorded, 61 that use nominee accounts (mostly in the UK and Ireland, where firms are not required to disclose the identity of their "true" owners) and 87 affiliates of foreign firms (i.e., a foreign firm controls at least 50% of their voting rights) where we could not follow their ownership chain. We retain the affiliates of foreign firms in our database whenever the holding firm is included in our sample. This screening left 5,232 firms comprising 94.32% of the listed firms in the 13 countries.[7] For these firms, our database records all owners who control at least 5% of voting rights. In France, Germany, and Spain, such owners must disclose their identity. The disclosure threshold is 2% in Italy and 3% in the UK.

The difficulty of organizing dispersed shareholders means that if the largest shareholder holds a substantial block of shares, then that shareholder has effective control. In line with earlier studies, we shall assume that 20% of the voting shares suffices to ensure control. We shall also discuss some cases that assume a control threshold of 10%. If no shareholder exceeds a given control threshold, then the firm is said to be widely held at that threshold. Table 2 sets out the screening process and lists the samples of firms analyzed in later tables.

The exclusion of firms that use nominee accounts may overstate the proportion of widely held firms in our sample. However, nominee accounts are the largest shareholders in only a small proportion of firms (less than 5%), so any bias is likely to be marginal. Ireland and the UK have the highest proportion of nominee accounts so this bias would be strongest there. These countries also have the highest proportions of widely held firms, so the exclusion of firms using nominee accounts is unlikely to distort our cross-country comparisons.

A shareholder of a corporation is said to be an ultimate owner at a given threshold if he controls it via a control chain whose links all exceed that threshold. If a firm has two owners with 12% of control rights each, then we say that the firm is half controlled by each owner at the 10% threshold, but that the firm is widely held at the 20% threshold. In the case of a firm with two owners (a family with 20% of control rights and a widely held corporation with 19% of control rights) we would say that this firm is half controlled by each owner at the 10% threshold, but family controlled at the 20% threshold.

2.1. Calculation of cash-flow rights and control rights

Corporate ownership is measured by cash-flow rights, and control is measured by voting rights. Ownership and control rights can differ because corporations can issue different classes of shares that provide different voting rights for given cash-flow

[7] Our sample coverage of countries is: Austria: 100.00 (%), Belgium: 89.04, Finland: 87.76, France: 89.26, Germany: 99.15, Ireland: 82.14, Italy: 100.00, Norway: 72.77, Portugal: 100.00, Spain: 100.00, Sweden: 94.96, Switzerland: 100.00, and the UK: 95.69. The low figure for Norway is due more to limited data coverage than to our screening.

Table 1
List of country specific data sources used to collect data on direct ownership (i.e., names of large shareholders, and stakes held in the company), and dual class share structures.

Countries	Direct ownership data	Dual class shares
Austria	Wiener Börse (2000), "Yearbook 1999" Worldscope (1998)	Wiener Börse (2000), "Yearbook 1999"
Belgium	Brussels Stock Exchange (www.bxs.be) Worldscope (1998)	Datastream Brussels Stock Exchange
Finland	Helsinki Media Blue Book, "Major Finnish Firms Internet Database" (http://www.bluebook.fi/en/tuotteet/haku/majorfinnishfirms.html) Hugin, Annual Report CD (1998) (http://www.huginonline.com)	Datastream Helsinki Media Blue Book, "Major Finnish Firms Internet Database"
France	The Herald Tribune (1997), "French Firm Handbook 1997," SFB-Paris Bourse Financial Times (1997), "Extel Financial" Worldscope (1998) http://www.bourse-de-paris.fr/fr/market8/fsg830.htm	Datastream Financial Times (1997), "Extel Financial" Les Echos (1996) Muus (1998)
Germany	Commerzbank (1997), "*Wer gehört zu wem*" (http://www.commerzbank.com/navigate/date_frm.htm) Financial Times (1997), "Extel Financial" Worldscope (1998)	Datastream Die Welt (1996), available at: http://www.welt.de/ Financial Times (1997), "Extel Financial" Becht and Boehmer (1998)
Ireland	http://www.hemscott.com/equities/firm/ Worldscope (1998)	Datastream Worldscope (1998)
Italy	CONSOB (1997), "Bollettino – edizione speciale n. 4/97 – Compagine azionaria delle società quotate in borsa o ammesse alle negoziazioni nel mercato ristretto al 31 dicembre 1996" (http://www.consob.it/trasparenza_soc_quot/trasp_soc_quot.htm) Il Sole 24 ore (1997), "Il taccuino dell'azionista"	Datastream Il Sole 24 ore (1997), "Il taccuino dell'azionista"

Norway	Hugin, Annual Report CD (1998) Worldscope (1998)	Datastream Hugin, Annual Report CD (1998)
Portugal	Bolsa de Valores de Lisboa, "Sociedades Cotadas 1997" (1998)	Bolsa de Valores de Lisboa, "Sociedades Cotadas 1997"
Spain	Comision Nacional del Mercado de Valores (1998), "Participaciones significativas en sociedades cotizadas" (http://www.cnmv.es/english/cnmve.htm)	ABC (1996) Financial Times (1997), "Extel Financial" Crespi-Cladera and Garcia-Cestona (1998)
Sweden	Hugin, Annual Report CD (1998) Worldscope (1998)	Datastream Hugin, Annual Report CD (1998)
Switzerland	Union Bank of Switzerland (1998), "Swiss Stock Guide 96/97," Zurich	Union Bank of Switzerland (1998), "Swiss Stock Guide 96/97," Zurich
United Kingdom	Financial Times (1997), "Extel Financial" London Stock Exchange (1997), "The London Stock Exchange Yearbook" Financial Times Worldscope (1998) http://www.hemscott.com/equities/firm/	Datastream Financial Times (1997), "Extel Financial" Financial Times (1996)

Table 2

Screenings used to identify and remove corporations without reliable ownership data, and sub-samples of firms used in the different sections of the paper. Panel A describes the procedure used to eliminate companies with insufficient or unreliable data on ownership, due to unavailable data, or related to the impossibility to trace ownership back to the ultimate owner (i.e., when the direct controlling shareholder is from a country for which we do not have ownership data, or when the direct owner is a nominee). Panel B reports the total number of firms remaining after this screening, as well as the number of firms with an ultimate owner at the 5% and 20% cutoffs. It also lists the different subsets of firms used in the various sections of the paper.

Panel A: Selection criteria	Number	Percentage	
All listed firms	5,547	100.00	
Firms with no ownership data	(167)	(3.01)	
Firms majority-controlled by foreign investors	(87)	(1.57)	
Firms controlled by "nominees"	(61)	(1.10)	
Firms in our sample	5,232	94.32	
Panel B: Sample of firms analyzed in the various tables			**Tables**
All listed firms	5,232	100.00	3, 4, 5, 6
Firms where at least one shareholder holds at least 5% of voting rights	4,806	91.86	9
Firms where at least one shareholder holds at least 20% of voting rights	3,300	63.07	7, 8
Selected samples of firms			10; Figs. 1 and 2

rights. Ownership and control rights can also differ because of pyramiding and holdings through multiple control chains.

Firm Y is said to be controlled through pyramiding if it has an ultimate owner, who controls Y indirectly through another corporation that it does not wholly control. For example, if a family owns 15% of Firm X, that owns 20% of Firm Y, then Y is controlled through a pyramid at the 10% threshold. However, at the 20% threshold, we would say that Firm Y is directly controlled by Firm X (which is widely held at the 20% threshold) and no pyramiding would be recorded. If Firm X holds 100% of Firm Y, then again there is no pyramid. Pyramiding implies a discrepancy between the ultimate owner's ownership and control rights. In the above example, the family owns 3% of the cash-flow rights of Firm Y (the product of its ownership stakes along the control chain) but its control rights are measured by the weakest link in its control chain, i.e., 15%.

Firm Y is said to be controlled through a multiple control chain if it has an ultimate owner who controls it via *a multitude* of control chains, each of which includes at least 5% of the voting rights at each link. In the previous example, suppose that the family also owns 7% of Firm Y directly. Then the family owns 10% of the cash-flow rights of Firm Y ($0.15*0.20+0.07$) and controls 22% of its voting rights (min $(0.15, 0.20)+0.07$). Claessens et al. (2000) defined "holdings through multiple control chain" as "cross-holdings."

A firm can be controlled by holdings through multiple control chains, even though it is not controlled by pyramiding. For example, suppose that Firm A controls 10% of B and 100% of C, which controls 15% of B. Since C is fully controlled by A in the control chain A-C-B, there is no pyramiding. However, Firm A controls Firm B directly and indirectly through Firm C, with control rights of 25%. We conclude that Firm A controls Firm B through multiple control chains because: (1) Firm B has a controlling owner at the 20% level; (2) B is controlled via multiple control chains; and (3) all links in each chain involve at least 5% of the control rights.

Firm Y is controlled by a cross-holding at the 20% threshold if Firm X holds a stake in Firm Y of at least 20%, and Y holds a stake in Firm X of at least 20%, or if firm Y holds directly at least 20% of its own stocks.

2.2. Types of ownership

This section discusses our classification of ultimate owners into the following six types:

Family: A family (including an individual) or a firm that is unlisted on any stock exchange.

Widely held financial institution: A financial firm (SIC 6000-6999) that is widely held at the control threshold.

State: A national government (domestic or foreign), local authority (county, municipality, etc.), or government agency.

Widely held corporation: A non financial firm, widely held at the control threshold.

Cross-holdings: The firm Y is controlled by another firm, that is controlled by Y, or directly controls at least 20% of its own stocks.

Miscellaneous: Charities, voting trusts, employees, cooperatives, or minority foreign investors.

Where the ultimate owner of a corporation is an unlisted firm, we tried to trace its owners using all available data sources. We had incomplete success because most of our sample countries do not require unlisted firms to disclose their owners. One exception is the UK, where the 3% disclosure rule also applies to unlisted firms. However, we were still not able to find ownership data for all unlisted firms. If we failed to identify the owners of an unlisted firm, then we classified them as a family. This approach is close to that of Claessens et al. (2000), who regard as a family any controlling shareholder that was an unlisted firm in a business group. Below, we offer both a general justification for this convention and statistical support for it in the largest European economies.

In the case of the Fiat group, for example, we traced the ownership of La Rinascente back to the Agnelli family from *Il Taccuino dell'Azionista*, although we find two unlisted firms in its chain of control (namely, Carfin and Eufin). In fact, La Rinascente is controlled by Eufin (with a 32.8% ownership and a 40.51% control stake), which is wholly controlled by Ifil. *Wer gehört zu wem* is particularly useful in a number of cases in Germany. However, it helps us identify the owners for only 20% of unlisted German firms. For example, we find that TCHIBO Holding AG is the largest owner of Beiersdorf AG (a listed firm) with a 25.87% O&C stake.

TCHIBO Holding, however, is an unlisted firm. We identified its ultimate owner: the Herz family, which has a 100% O&C stake. Another case is Heidelberger Zement AG, whose largest owner (with a 19.07% O stake and a 21.8% C stake) is Schwenk Gmbh, again an unlisted firm. We find that Schwenk is 90% owned and controlled by the Schwenk family, and 10% owned by the Babette family. In some cases, the ownership structure of unlisted firms is more complex. For example, the direct owner of Thyssen AG is Thyssen Beteiligunsverw Gmbh, which is unlisted. We find that this firm is 49.999% owned and controlled by Commerzbank (a listed, widely held financial firm), and 49.981% owned and controlled by Allianz. A number of complex cases of ownership of unlisted firms were also reported by La Porta et al. (1999).

Our database records the unlisted subsidiaries of widely held corporation or financial institution, so any listed firm controlled by an unlisted firm that is controlled by a widely held corporation or financial institution is recorded as controlled by the latter in our database. Thus, an unlisted firm that we identify as the ultimate controller of a listed firm is unlikely to be, in fact, controlled by a widely held corporation or financial institution. The unlisted firm isn't likely controlled by the State because State-controlled firms tend to be listed. In any case, State ownership has decreased dramatically in Europe after the privatization wave of the 1990s. The low likelihood that an unlisted firm is, in fact, controlled by a widely held corporation, widely held financial institution, or the State leaves families as the most likely controller of an unlisted firm.

For Germany, we collected a sample of 500 unlisted firms with ultimate owners from *Wer gehört zu wem*. We considered firms in alphabetical order, including a firm in our sample if we could trace its ultimate owners. We stopped when our sample numbered 500. We found that the average control stake is 89.44%. In 68% of the cases, the largest owner is the sole owner; in the remainder, the largest owner holds an average stake of 67%. Families, both domestic and foreign, are the largest ultimate owners of 90.6% of these firms. At the 20% level, financial firms control 4.9% of unlisted firms, the State 2.67%, and cross-holdings 1.83%. Thus, both State and widely held financial firms are insignificant as ultimate owners of unlisted firms. Furthermore, since the State and the largest financial institutions are included in the *Wer gehört zu wem* database, we were able to identify them and trace their ownership chain. This further reduces the possibility of bias in our sample.

For Italy, Bianchi et al. (1998) considered a sample of 1,000 manufacturing firms surveyed by the Bank of Italy. They reported that the largest immediate shareholder of these firms held, on average, a direct stake of 67.69%. Among all types of immediate shareholders, individuals held 48% of equity, non financial firms 36.9%, financial firms 0.17%, the State 4.6%, and foreign investors 8%. We secured a wider sample of 3,800 unlisted Italian firms with ultimate owners from the AIDA database.[8] We found that the State is the largest owner for 0.4% of firms, financial

[8] AIDA is a private database provided by Bureau Van Dijk. The AIDA database provides accounting information for about 130,000 Italian firms and ownership information for 25,314 Italian firms. Firms with ownership data in the AIDA database are not ranked in any order. We traced ownership to ultimate

institutions for 0.2%, and families (domestic and foreign) for 99.4%. The average ultimate control stake of the largest controlling shareholder was 70.71%.

For France, Bloch and Kremp (1998) summarize the ownership structure of a sample of 282,322 (mostly unlisted) firms.[9] For firms with more than 500 employees, the largest owner held, on average, 88% of the capital. For 56% of the unlisted firms, the largest owner was a family; for the remaining 44% it was another corporation, usually an unlisted firm. For the UK, Goergen and Renneboog (1998) reported that 78% of unlisted firms are fully controlled by one shareholder, while the remaining 22% have a shareholder who (directly) holds a majority stake.[10]

2.3. Examples

Fig. 1 illustrates dual class shares and pyramiding in the Nordström family group of Sweden. All holdings of more than 5% of a firm's shares are listed. All firms shown in Fig. 1 have dual class shares: A-shares carry one voting right while B-shares carrying one-tenth of a voting right. Realia has two classes of shares: 2.641 million A-shares and 42.922 million B-shares. A- and B-shares have the same face value, so the total stock capital is 45.563 million shares. A-shares constitute 5.8% of stock capital (=2.641 million/45.563 million) while B-shares constitute 94.2%. A-shares carry 2.641 million votes, while B-shares carry 4.292 million votes (=one-tenth of 42.922 million). Thus, A-shares carry 38.09% of the votes (=2.641 million / (2.641 million+4.292 million)), while B-shares carry 61.91% of votes.

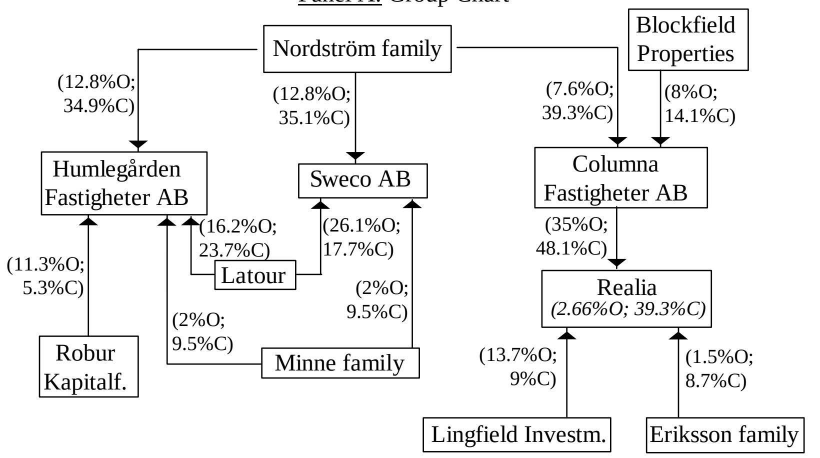
Realia has three direct shareholders: Columna Fastigheter, Lingfield Investment, and the Eriksson family. Columna owns 1.933 million A-shares and 14.007 million B-shares. Thus, Columna owns 35% (=(1.933 million+14.007 million)/45.563 million) of cash-flow rights, and controls 48.1% (=(1.933 million+1.401 million)/(2.641 million+4.292 million)) of votes in Realia. Realia's second largest direct shareholder, Lingfield Investments, owns no A-shares and only 6.259 million B-shares, which comprise 13.7% (6.259 million/45.563 million) of the cash-flow rights, and 9% (0.6259/(2.641 million+4.292 million)) of the control rights. Finally, the Eriksson family owns 0.591 million A-shares and 0.101 million B-shares, comprising 1.5% (=(0.591 million+0.101 million)/45.563 million) of the ownership rights and 8.7% (=(0.591 million+0.0101 million)/(2.641 million+4.292 million)) of the control rights. Through Columna Fastigheter, the Nordström family has sole control of Realia at the 20% threshold. However, at the 10% threshold, Realia has a second large shareholder, Blockfield Properties. In Relia's control structure there are two pyramiding chains: Nordström family/Columna/Realia and Blockfield/Columna/Realia.

(*footnote continued*)
owners starting from the first firm listed in the AIDA database using ownership information contained in that database. A firm was included if we could trace its ultimate owners. We stopped when our sample reached 15% of firms with ownership data.

[9] Their results were based on data compiled by the French central bank (Fiben), that is unavailable to the public.

[10] The figures are based on a sample of 12,600 unlisted firms from the Jordan's database, which is compiled by a private data vendor, Bureau Van Djik.

Panel A: Group Chart



Panel B: Calculating ownership and voting rights in Realia's capital structure

Type	Number of shares	Voting rights	Number of votes	Percent of share capital	Percent of votes
A-shares	2.641 million	1	2.641 million	5.8%	38.09%
B-shares	42.922 million	1/10	4.292 million	94.2%	61.91%
All	*45.563 million*		*6.933 million*	*100%*	*100%*

Shareholders	A-shares	B-shares	Ownership	Control
Columna Fastigheter	1.933 million	14.007 million	35.0%	48.1%
Lingfield Investments	-	6.259 million	13.7%	9.0%
The Eriksson family	0.591 million	0.101 million	1.5%	8.7%

Fig. 1. The Nordström family group (Sweden). This figure describes the major listed firms controlled by the Nordström family. All control stakes of at least 5% are reported. All the firms have dual class shares with A-shares each carrying one voting right and B-shares each carrying a tenth of a vote. The procedure used to compute direct ownership and control rights is illustrated in Panel B. Ownership stakes are denoted by "O" and voting stakes by "C." Direct ownership and control stakes are shown alongside each of the arrows, while the resulting ultimate ownership and control stakes for Realia (the only case of pyramiding) by the Nordström family are reported in the firm's box.

Fig. 2 illustrates the control of Unicem by pyramiding, holdings through multiple control chains, and dual class shares within the Agnelli family group, the largest Italian group. The methodology presented in Fig. 1 is used to compute cash-flow rights (O) and control rights (C), taking account of dual class shares. Unicem is directly controlled by two major shareholders: Ifi and Ifil. Ifil is controlled by Ifi with a direct stake (O = 7.97%; C = 14.6%) and an indirect stake (O = 20.55%; C = 37.64%) through Carfin, a wholly owned, non financial unlisted firm. Since Carfin is wholly controlled by Ifi, we consider Ifi's stake in Ifil as a direct holding rather than a pyramid, although we say there is holdings through multiple control chain (see section 2.1). Ifi is controlled by a single major shareholder, Giovanni Agnelli & C. S.p.A. (the Agnelli family). The Agnelli family's control of Unicem is

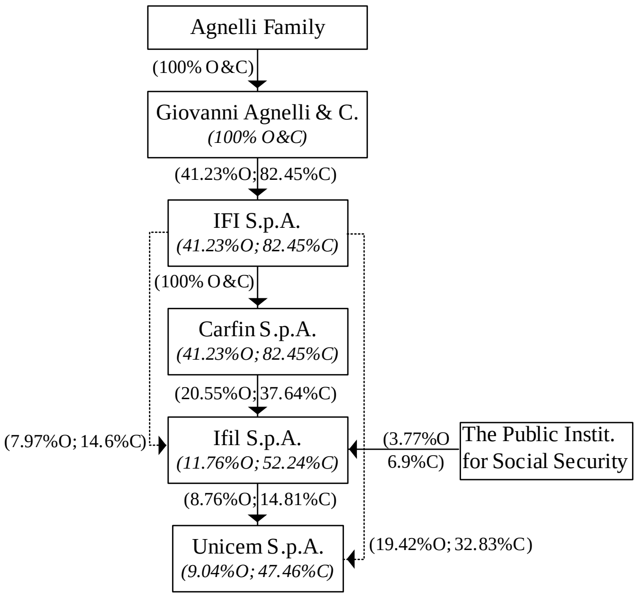


Fig. 2. Unicem (Italy). This figure describes the principal shareholders of Unicem, a complex case of pyramiding, holdings through multiple control chains, and the use of dual class shares within the Agnelli family group, the largest Italian group. All control stakes of at least 5% are reported. The company has only one ultimate owner, the Agnelli family, which controls 47.64% of the voting rights and owns 9.04% of the cash-flow rights in Unicem. Hard lines indicate pyramiding while dotted lines indicate holdings through further (i.e., multiple) control chains. Ownership stakes are denoted by "O" and voting stakes by "C." Direct ownership and control stakes are shown alongside each arrow, while the Agnelli family's ultimate ownership and control stakes (when different from the direct stakes) are shown in each firm's box.

thus exercised through pyramiding (Ifi-Carfin-Ifil-Unicem), non voting shares (within Ifi, Ifil, and Unicem), and two holdings through multiple control chains (Ifi-Ifil and Ifi-Unicem, denoted by dotted lines in Fig. 2).

To compute the Agnelli family's ultimate ownership of Unicem, we form the product of its ownership stakes along the pyramidal chain of Agnelli-Ifi-Carfin-Ifil-Unicem, namely $100\% * 41.23\% * 100\% * 20.55\% * 8.76\% = 0.7422\%$. We then add the stake from the two further (i.e., multiple) control chains (the dotted lines). The first chain is from Ifi into Ifil (the left side of Fig. 2) which gives the Agnelli family a stake of $100\% * 41.23\% * 7.97\% * 8.76\% = 0.2878\%$. The second chain is from Ifi to Unicem (the right side of Fig. 2) which gives the Agnelli family a stake of $100\% * 41.23\% * 19.42\% = 8.0069\%$. The family's overall ownership stake in Unicem is the sum of these three stakes: $0.7422\% + 0.2878\% + 8.0069\% = 9.0369\%$.

The Agnelli family's ultimate control stake is the sum of the weakest links along each control chain. The weakest link in the pyramidal chain is min(100%; 82.45%; 100%; 37.64%; 14.81%) = 14.81%. In the control chain from Ifi to Ifil, the weakest link is min(100%; 82.45%; 14.16%; 0%) = 0%. Note that Ifil controls 14.81% of Unicem; this 14.81% stake has already been considered in the pyramidal chain, so we use 0%. In the control chain from Ifi to Unicem, the weakest link is min(100%;

82.45%; 32.83%) = 32.83%. The Agnelli family's control stake in Unicem is the sum of these three weakest links, namely 14.81% + 0% + 32.83% = 47.64%. The ratio of cash-flow to voting rights is 0.1897 (9.04%/47.64%).

We conclude that Unicem is controlled by the Agnelli family at both the 10% and the 20% thresholds. The company has only one controlling shareholder, and its control structure includes pyramiding, multiple control chains, and multiple class shares.

3. Ultimate ownership patterns

Table 3 analyzes the ultimate controlling owners of Western European corporations at the 20% threshold. In all countries, widely held and family controlled firms are the most important category. 36.93% of the firms in our sample are widely held and 44.29% are family controlled. However, there is a sharp cleavage between ownership patterns in continental Europe and in the UK and Ireland. Widely held firms comprise 63.08% of UK firms and 62.32% of Irish firms; in continental Europe the highest percentages of widely held firms are all in Scandinavia but are substantially lower (Sweden 39.18%, Norway 36.77%, Finland 28.68%). The lowest percentages of widely held firms are in Germany (10.37%), Austria (11.11%), and Italy (12.98%). The picture for family control is reversed. Here, the lowest percentages are in the UK (23.68%) and Ireland (24.63%); in continental Europe, the lowest percentages are in Norway (38.55%), Sweden (46.94%), Switzerland (48.13) and Finland (48.84%). In every other Western European country, family controlled firms are in the majority.

The UK and Ireland also stand apart in the low percentages of corporations that are State controlled (0.08% and 1.45%). In continental Europe, the State controls more than 10% of the listed firms in Austria, Finland, Italy, and Norway.

9.03% of Western European firms are controlled by widely held financial institutions, this being especially significant in Belgium (12.69%) and Italy (12.26%) but insignificant in Finland (0.65%). Control by widely held corporations is trivial (1.68%) in all sample countries. Cross-holdings are only marginally significant in Norway, Germany, and Austria (accounting for 2.27%, 2.62%, and 1.01% of cases respectively) but are insignificant elsewhere.

If we lower the threshold to 10%, then the proportion of widely held firms falls to 13.72%; family control increases from 44.29% to 55.87%; control by financial institutions also increases from 8.73% to 18.34%. This increase is especially significant in the UK and Ireland. By contrast, lowering the control threshold to 10% has little effect on the percentages of State-controlled firms, firms controlled by widely held firms, and firms with cross-holdings.

3.1. *Financial versus non financial firms*

Table 4 compares the ownership structure of financial firms and non-financial firms. Financial firms are slightly more likely to be widely held than non-financial firms (39.92% versus 36.39%), are much more likely to be controlled by a widely held financial institution (21.48% versus 5.96%), and are much less likely to be

Table 3
Ultimate control of publicly traded firms. Data relating to 5,232 publicly traded corporations are used to construct this table. The table presents the percentage of firms controlled by different controlling owners at the 20% threshold. Controlling shareholders are classified into six types. Family: A family (including an individual) or a firm that is unlisted on any stock exchange. Widely held financial institution: A financial firm (SIC 6000-6999) that is widely held at the control threshold. State: A national government (domestic or foreign), local authority (county, municipality, etc.), or government agency. Widely held corporation: A non financial firm, widely held at the control threshold. Cross-holdings: The firm Y is controlled by another firm, that is controlled by Y, or directly controls at least 20% of its own stocks. Miscellaneous: Charities, voting trusts, employees, cooperatives, or minority foreign investors. Companies that do not have a shareholder controlling at least 20% of votes are classified as widely held.

Country	Number of Firms	Widely held	Family	*Family of which:*		State	Widely held Corporation	Widely held Financial	Miscellaneous	Cross-holdings
				Identified families	*Unlisted firms*					
Austria	99	11.11	52.86	*12.12*	*40.74*	15.32	0.00	8.59	11.11	1.01
Belgium	130	20.00	51.54	*7.31*	*44.23*	2.31	0.77	12.69	12.69	0.00
Finland	129	28.68	48.84	*16.28*	*32.56*	15.76	1.55	0.65	4.52	0.00
France	607	14.00	64.82	*26.11*	*38.71*	5.11	3.79	11.37	0.91	0.00
Germany	704	10.37	64.62	*27.03*	*37.59*	6.30	3.65	9.07	3.37	2.62
Ireland	69	62.32	24.63	*13.04*	*11.59*	1.45	2.17	4.35	5.07	0.00
Italy	208	12.98	59.61	*39.50*	*20.11*	10.34	2.88	12.26	1.20	0.72
Norway	155	36.77	38.55	*10.59*	*27.96*	13.09	0.32	4.46	4.54	2.27
Portugal	87	21.84	60.34	*5.17*	*55.17*	5.75	0.57	4.60	6.90	0.00
Spain	632	26.42	55.79	*6.25*	*49.54*	4.11	1.64	11.51	0.47	0.05
Sweden	245	39.18	46.94	*22.65*	*24.29*	4.90	0.00	2.86	5.71	0.41
Switzerland	214	27.57	48.13	*22.66*	*25.47*	7.32	1.09	9.35	6.31	0.23
UK	1,953	63.08	23.68	*12.22*	*11.46*	0.08	0.76	8.94	3.46	0.00
Total	5,232	36.93	44.29	*16.93*	*27.36*	4.14	1.68	9.03	3.43	0.51

Table 4

Concentration of control: financial versus non financial firms. Data relating to 5,232 publicly traded corporations are used to construct this table, which groups corporations into financial firms (SIC: 6000-6999) and non financial corporations. The table presents the percentage of firms controlled by different controlling owners at the 20% threshold. Controlling shareholders are classified into six types. Family: A family (including an individual) or a firm that is unlisted on any stock exchange. Widely held financial institution: A financial firm (SIC 6000-6999) that is widely held at the control threshold. State: A national government (domestic or foreign), local authority (county, municipality, etc.), or government agency. Widely held corporation: A non financial firm, widely held at the control threshold. Cross-holdings: The firm Y is controlled by another firm, that is controlled by Y, or directly controls at least 20% of its own stocks. Miscellaneous: Charities, voting trusts, employees, cooperatives, or minority foreign investors. Companies that do not have a shareholder controlling at least 20% of votes are classified as widely held.

Country	Type of firm	*% of firms*	Widely held	Family	State	Widely held corporation	Widely held financial	Miscellaneous	Cross-holdings
Austria	Financial	*30.3*	10.00	38.33	13.33	0.00	18.33	16.67	3.33
	Non-financial	*69.7*	11.59	59.18	16.18	0.00	4.35	8.70	0.00
Belgium	Financial	*39.2*	37.25	32.35	1.96	1.96	13.73	12.75	0.00
	Non-financial	*60.8*	8.86	63.92	2.53	0.00	12.03	12.66	0.00
Finland	Financial	*10.1*	23.08	64.10	10.26	0.00	2.56	0.00	0.00
	Non-financial	*89.9*	31.71	44.11	17.07	1.22	0.61	5.28	0.00
France	Financial	*16.1*	22.45	33.16	6.63	0.00	36.22	1.53	0.00
	Non-financial	*83.9*	12.38	70.92	4.81	4.52	6.58	0.79	0.00
Germany	Financial	*14.5*	12.75	37.58	5.88	0.00	28.27	1.96	13.56
	Non-financial	*85.5*	9.97	69.20	6.37	4.26	5.82	3.61	0.76
Ireland	Financial	*15.9*	63.64	13.64	9.09	4.55	0.00	9.09	0.00
	Non-financial	*84.1*	62.07	26.72	0.00	1.72	5.17	4.31	0.00
Italy	Financial	*23.6*	24.49	18.37	8.16	7.14	38.78	0.00	3.06
	Non-financial	*76.4*	9.43	72.33	11.01	1.57	4.09	1.57	0.00
Norway	Financial	*16.1*	56.00	12.00	24.00	0.00	4.00	4.00	0.00
	Non-financial	*83.9*	33.08	43.65	10.99	0.38	4.55	4.64	2.71
Portugal	Financial	*24.1*	19.05	71.43	0.00	0.00	4.76	4.76	0.00
	Non-financial	*75.9*	23.44	55.47	7.81	0.78	4.69	7.81	0.00
Spain	Financial	*16.1*	29.41	23.37	7.35	0.00	38.40	1.47	0.00
	Non-financial	*83.9*	25.85	62.03	3.49	1.95	6.34	0.28	0.06
Sweden	Financial	*17.1*	50.00	40.48	4.76	0.00	2.38	2.38	0.00
	Non-financial	*82.9*	37.43	47.49	5.03	0.00	3.35	6.70	0.00
Switzerland	Financial	*24.3*	32.69	24.04	17.31	0.00	16.35	9.62	0.00
	Non-financial	*75.7*	25.93	55.86	4.12	1.44	7.10	5.25	0.31
UK	Financial	*0.185*	60.11	18.01	0.00	0.42	17.94	3.53	0.00
	Non-financial	*0.815*	63.76	24.97	0.09	0.84	6.90	3.44	0.00
All	Financial	*0.183*	39.92	26.54	5.05	1.31	21.48	4.00	1.71
	Non-financial	*0.817*	36.39	48.15	3.85	2.13	5.96	3.30	0.21

family controlled (26.54% versus 48.15%). For other types of controlling owners, the differences between financial and non financial firms are insignificant.

In both the UK and Ireland, the proportion of widely held financial firms is about the same as that of non financial firms. Financial firms are more likely than non-financial firms to be widely held for continental countries except Austria, Finland, and Portugal. Non-financial firms are more likely to be family controlled in all countries except Finland and Portugal.

Differences in patterns of ownership and control across countries can be explained by differences in the regulations on financial firms (Barth et al., 2000). Since the ownership structure of financial firms differs from that of non financial firms, a country's ratio of financial to non financial firms will affect its results. Financial firms constitute only 10.1% of sample firms in Finland and 14.5% in Germany, but 30.3% in Austria and 39.2% in Belgium.

3.2. Size effects

To explore the relationship between ownership patterns and firm size, we identify in each country the 20 largest, the middle 50, and the 50 smallest firms by market capitalization. For Austria, Ireland, and Portugal which had less than 120 listed firms, we defined the 20 largest firms as "Large", then divided the rest equally into those that were "Medium" and "Small." Table 5 shows that family ownership is less likely for larger firms, being particularly weak among the largest firms in the UK and Sweden. In Austria, Finland, Italy, Norway, and Portugal, State control is quite important for the largest firms. Large firms are also more likely to be widely held than small firms in all our sample countries except Austria, Norway, and Portugal. In the UK, 90% of large firms are widely held at the 20% threshold, but only 14% of small firms are widely held at the 10% threshold. Cross-country differences become less significant among small firms.

4. Means of enhancing control

This section reports the major mechanisms used to enhance control. We neglect less significant mechanisms such as firm-specific voting caps,[11] *golden shares*,[12] informal alliances (i.e., voting blocks), or transfer restrictions on shares.

[11] Voting caps are used, for example, by BASF (2.62%), Bayer (5%), Deutsche Bank (5%), Linde (10%), Mannesmann (5%), Phoenix (10%), Schering (3.51%), and Volkswagen (20%) in Germany; and Telefonica (10%) in Spain. In Italy, the law requires voting caps for cooperative banks; they are rather common in recently privatized firms such as Comit (3%) and Credit (3%). Voting caps also obtain in France, e.g., in Alcatel, Danone, and Pernod Ricard. In Switzerland, 12 out of the 50 largest firms have voting caps. Examples from the ten largest corporations include Novartis (2%), Nestlé (3%), UBS (5%), Swiss Bank Corporation (5%), and Zurich Insurance (3%).

[12] As reported in Crespi-Cladera and Garcia-Cestona (1998), the State holds these golden shares in some recently privatized Spanish firms, such as Repsol, Telefonica, and Endesa. The use of golden shares is also popular among privatized firms in Italy, as emerged from the vicissitudes of Telecom Italia and Enel in the late 1990s.

Table 5

Concentration of control and firm size. Data relating to 5,232 publicly traded corporations are used to construct this table, which groups corporations according to their size (market capitalization), and, for each variable, presents means for the largest 20 firms, 50 medium-size firms, and the smallest 50 firms. For countries with less than 120 firms, we group the largest 20 firms in the "Largest 20" group, and then divide the rest into two equal groups. The table presents the percentage of firms controlled by different controlling owners at the 20% threshold. Controlling shareholders are classified into six types. Family: A family (including an individual) or a firm that is unlisted on any stock exchange. Widely held financial institution: A financial firm (SIC 6000-6999) that is widely held at the control threshold. State: A national government (domestic or foreign), local authority (county, municipality, etc.), or government agency. Widely held corporation: A non financial firm, widely held at the control threshold. Cross-holdings: The firm Y is controlled by another firm, that is controlled by Y, or directly controls at least 20% of its own stocks. Miscellaneous: Charities, voting trusts, employees, cooperatives, or minority foreign investors. Companies that do not have a shareholder controlling at least 20% of votes are classified as widely held.

Country	Category	Average market cap (m US$)	Widely held	Family	State	Widely held corporation	Widely held financial	Misc.	Cross-holdings
Austria	Largest 20	1,593.0	10.00	32.50	42.50	0.00	5.00	10.00	0.00
	Middle 40	227.8	14.29	47.14	11.43	0.00	15.71	8.57	2.86
	Smallest 39	33.5	11.76	71.57	4.90	0.00	2.94	8.82	0.00
Belgium	Largest 20	5,386.4	20.00	37.50	0.00	0.00	27.50	15.00	0.00
	Middle 50	722.2	18.00	47.00	4.00	0.00	20.00	11.00	0.00
	Smallest 50	58.0	16.00	65.00	0.00	2.00	2.00	15.00	0.00
Finland	Largest 20	2,310.2	38.10	33.33	28.57	0.00	0.00	0.00	0.00
	Middle 50	274.3	41.18	38.23	11.76	2.94	1.47	4.41	0.00
	Smallest 50	30.1	17.65	65.20	9.80	0.00	0.00	7.35	0.00
France	Largest 20	16,467.1	60.00	30.00	0.00	0.00	10.00	0.00	0.00
	Middle 50	149.9	14.00	68.00	6.00	2.00	10.00	0.00	0.00
	Smallest 50	6.8	8.00	77.00	2.00	4.00	9.00	0.00	0.00
Germany	Largest 20	27,510.2	45.00	15.00	10.00	0.00	12.50	5.00	12.50
	Middle 50	158.3	10.00	75.00	2.00	7.00	4.00	1.00	1.00
	Smallest 50	12.0	14.00	81.00	3.00	0.00	2.00	0.00	0.00
Ireland	Largest 20	2,260.2	70.00	20.00	0.00	2.50	0.00	7.50	0.00
	Middle 25	198.9	50.00	29.16	0.00	4.17	8.33	8.33	0.00
	Smallest 24	37.0	68.00	24.00	4.00	0.00	4.00	0.00	0.00
Italy	Largest 20	10,398.8	35.00	20.00	25.00	0.00	15.00	0.00	5.00
	Middle 50	320.4	8.00	63.00	6.00	6.00	14.00	2.00	1.00
	Smallest 50	70.4	14.00	67.00	6.00	2.00	10.00	1.00	0.00

Norway	Largest 20	2,302.7	30.00	45.00	20.00	0.00	0.00	5.00	0.00
	Middle 50	310.8	38.00	34.83	16.50	0.00	3.83	5.67	1.17
	Smallest 50	62.4	40.00	35.67	7.40	0.00	7.33	4.40	5.20
Portugal	Largest 20	2,338.9	15.00	60.00	17.50	2.50	0.00	5.00	0.00
	Middle 34	170.4	28.57	60.00	2.86	0.00	5.71	2.86	0.00
	Smallest 33	42.8	18.75	60.94	1.56	0.00	6.25	12.50	0.00
Spain	Largest 20	4,919.2	45.00	20.83	10.00	9.17	15.00	0.00	0.00
	Middle 50	302.4	34.00	46.00	8.00	2.00	10.00	0.00	0.00
	Smallest 50	65.3	36.00	56.00	2.00	0.00	6.00	0.00	0.00
Sweden	Largest 20	9,575.2	80.00	5.00	5.00	0.00	0.00	10.00	0.00
	Middle 50	397.9	49.02	42.16	2.94	0.00	0.98	4.90	0.00
	Smallest 50	44.0	32.00	63.00	0.00	0.00	3.00	2.00	0.00
Switzerland	Largest 20	24,589.9	50.00	35.00	0.00	0.00	15.00	0.00	0.00
	Middle 50	352.2	18.00	58.00	10.00	2.00	5.00	7.00	0.00
	Smallest 50	58.0	28.00	55.00	7.33	2.67	6.00	1.00	0.00
UK	Largest 20	40,563.4	90.00	0.00	0.00	0.00	10.00	0.00	0.00
	Middle 50	151.7	64.71	19.60	0.00	0.00	13.73	1.96	0.00
	Smallest 50	4.2	42.00	38.67	0.00	0.00	8.00	11.33	0.00
All	Largest	12,027.2	45.24	27.24	12.20	1.09	8.46	4.42	1.35
	Middle	295.0	29.28	48.82	6.53	2.01	8.65	4.25	0.46
	Smallest	38.9	25.32	59.66	3.72	0.90	5.17	4.80	0.44

4.1. Dual class share structures

Consistent with the hypothesis that control provides large private benefits (see, for example, Barclay and Holderness, 1989; Claessens et al., 2002; Jensen and Meckling, 1976; Johnson et al., 2000; La Porta et al., 1997, 2002) in Western Europe, several studies report that voting shares trade at a premium over non voting shares. For example, Zingales (1994) reports that in Italy this premium is 81.5%, Megginson (1990) reports a 13.3% premium in the UK, Muus and Tyrell (1999) find a 29% premium in Germany, and Muus (1998) documents a 51.35% premium in France. In addition, Horner (1988) documents a 27% premium in Switzerland and Rydqvist (1992) finds a 6.5% premium in Sweden. In the US, Lease et al. (1983) find a voting premium of 5.4%. Nenova (2000) analyzes a sample of 661 dual class share firms in 18 countries and reports that control benefits constitute 50% of firm value in Mexico, around 0% of firm value in Denmark, and between one-quarter and one-half of firm value for Brazil, Chile, France, Italy, and South Korea. Nenova adds that a large fraction (i.e., more than 70%) of the differences in benefits can be explained by the legal systems, in particular the quality of general investor protection, minority rights in the case of control transfer, and standards of law enforcement.

Panel A of Table 6 displays the legal restrictions in each country on dual class shares, the proportion of firms issuing dual class shares for each country, and the average minimum percentage of the stock capital required to control 20% of the voting rights (denoted by *Own = 20% Con*). For example, Realia (Fig. 1) has 2.641 million A-shares with one vote per share and 42.922 million B-shares with one-tenth of a vote per share. A-shares represent 5.8% of stock capital (2.641 million/45.563 million) and 38.09% (i.e., 2.641 million/(2.641 million + 4.292 million)) of votes, while B-shares represent 61.91% of votes. Hence, it takes 3.05% (= 0.2 ∗ (5.8%/38.09%)) of A-share capital to acquire 20% of the votes (*Own=20% Con* is 0.0305).

Minimum percentages are calculated for each firm from its capital structure, then averaged over all sample firms to construct the table. These figures need not account for the use of multiple voting shares (except in Scandinavian countries). The issue of multiple voting shares was outlawed in Italy, Spain, the UK, and Germany, as of May 1998. Prior to this, German firms could be authorized to issue shares with multiple voting rights by State authorities. For example, at the end of 1996, Rwe AG had multiple voting stocks with a × 20 voting right, and Siemens AG had multiple voting stocks with a × 6 voting right. Multiple voting shares were issued in Germany by Bewag, Frankisches Uberlandwerk, Hamburger Hochbahn, Hamburgische Electricitats Werke, Lech Elektrizitatswerke, and Uberlandwerk Unterfranken. Multiple voting shares are legal in France and most firms grant two votes for each ordinary share, as long as they have been held for at least two consecutive years; for publicly traded firms this minimum holding period can be extended up to four years. These multiple voting stocks do not represent a special category of stocks in France, so we treat them as ordinary shares.

Table 6 ranks countries by this last statistic. Some ironies emerge when we compare this ranking with the ranking of countries by the severity of legal restrictions on dual class shares, which are of four types: (1) the one-share-one-vote rule; (2) a cap on the proportion of non voting stocks; (3) a rule placing a minimum on the votes accruing to any type of share; (4) no restrictions on the type of stock issued.

The European countries with the lowest average minimum percentages of shares required to ensure 20% control are Sweden (9.83%), Switzerland (15.26%), and Finland (15.42%). Thus, Sweden and Finland, the only countries that impose a lower limit on the voting rights of shares, exhibit a greater discrepancy between ownership and control than countries that place no limits on voting rights, such as Austria and Ireland. Therefore, the explicit floor on the voting rights of a share provides a clear indication of the unfairness in voting rights that regulators will tolerate, as well as a defense against public criticism. Sweden also has the highest percentage of firms issuing dual class shares (66.07%), followed by Switzerland (51.17%), Italy (41.35%), and Finland (37.60%). By contrast, Rydqvist's survey (1992) reported that 75% of Swedish firms issue non voting stocks. Bergström and Rydqvist (1990) reported that stocks issued by Swedish firms can be restricted or unrestricted to foreigners, but unrestricted shares cannot exceed 40% of equity and 20% of the votes. Swedish firms seem to have taken this as a license to issue shares with inferior voting rights to foreigners. Shares with superior voting rights are often not traded in Sweden. In Switzerland, firms can issue different classes of shares: Bearer (B-shares), registered (R-shares), and non-voting shares. R- and B-shares have identical cash-flow rights; however, R-shares have more voting power than B-shares since they are issued with a lower face value (Gardiol et al., 1997; Horner, 1988). Italian firms can issue limited voting (i.e., preference) shares and non voting shares. Only eight firms have limited voting shares outstanding. Both limited voting and non voting shares have legally prior claims on dividends, and on reimbursement in case of liquidation, see Zingales (1994). Finnish regulations require a control contestant to treat all classes of shares in a "fair and equitable" manner, so bidders need to offer all classes of shares the same tender price. The protection of minority shareholders during takeover contests may explain why small investors are willing to hold limited voting and non voting shares.

At the opposite extreme, dual class shares are rare in Portugal (0%), Belgium (0%), Spain (0.16%), and France (2.64%).[13] These countries have either a one-share-one-vote rule or a cap on the proportion of non voting stocks. In Norway, departures from the one-share-one-vote principle require governmental approval. This seems readily given since 13% of firms have multiple classes of shares. In the UK, non-voting shares have been outlawed since 1968, but firms can issue preference shares that have a prior claim on dividends and cumulative dividends, but limited voting rights. Preference shares may have no voting rights at general meetings. However, listing rules on the London Stock Exchange require firms to give these shares "adequate voting rights" on resolutions on (1) dividends in arrears, (2) reducing share capital and winding-up the firm, and (3) actions affecting their class

[13] Similar evidence is reported for Spain in Crespi-Cladera and Garcia-Cestona (1998) and for France in Muus (1998).

Table 6
Legal restrictions on issuing dual class shares. Data relating to 5,232 publicly traded corporations are used to construct this table. *Own* = *20% Con* is the average minimum percent of the book value of equity required to control 20% of votes (as computed for each firm in our sample); *Dual class shares (%)* is the percentage of firms with outstanding dual class shares.

Panel A: Country-level results

Country	Restrictions	Restriction details	Number of firms	*Own* = *20% Con*	Dual class shares (%)
Belgium	One-share-one-vote		130	20.00	0.00
Portugal	Proportion of non-voting stocks capped	Non voting (and limited voting) capital may not exceed 50% of stock capital	87	20.00	0.00
Spain	Proportion of non voting stocks capped	Non voting (and limited voting) capital may not exceed 50% of stock capital	632	20.00	0.16
France	Proportion of non voting stocks capped	Non voting (and limited voting) capital may not exceed 25% of stock capital	607	19.93	2.64
UK	Non voting shares outlawed since 1968. Firms may issue ‘‘preference shares’’ provided these are given ‘‘adequate voting rights’’	Minimum voting rights required for preference stocks include voting (1) when their dividend is in arrears, (2) on resolutions for reducing share capital and winding-up the firm, and (3) on resolutions which are likely to affect their class rights	1,953	19.14	23.91
Norway	One-share-one-vote rule	Governmental approval needed for exceptions	155	19.05	13.16
Austria	Unrestricted		99	18.96	23.23
Ireland	Unrestricted		69	18.91	28.07
Germany	Proportion of non-voting stocks capped	Non voting (and limited voting) capital may not exceed 50% of stock capital	704	18.83	17.61

Italy	Proportion of non-voting stocks capped	Non voting (and limited voting) capital may not exceed 50% of stock capital	208	18.38	41.35
Finland	Minimum vote ratio	Minimum vote ratio: one-tenth	129	15.42	37.60
Switzerland	Unrestricted		214	15.26	51.17
Sweden	Minimum vote ratio	Minimum vote ratio: one-tenth	245	9.83	66.07
All			5,232	18.74	19.91

Panel B: Results by type of restrictions

Restrictions	*Own = 20% Con*	Dual class shares (%)
Minimum voting ratio required	12.26 $^{U, C, P}$	53.92 $^{U, C, P}$
Unrestricted	16.86 $^{M, C, P}$	40.11 $^{M, C, P}$
Cap on the proportion of non voting stocks	19.47 $^{U, M}$	10.14 $^{U, M, P}$
Prohibited	19.56 $^{U, M}$	6.15 $^{U, M, C}$

$^{U, M, C, P}$ indicates that the ratio is significantly different (at the 5% level) from the sample of firms in countries where regulation is unrestricted (U), requires a minimum voting ratio (M), imposes a cap (C) to the proportion of non-voting stocks (with reference to the total stock capital), or prohibits (P) the issuance of non voting/limited-voting stocks. The UK is not included in any of these groups since its regulations prohibit the issue of stocks that carry no voting rights, but permit the issue of limited voting stocks (i.e., preference shares). Information about restrictions on voting rights is obtained from the national stock exchanges (or their supervisory authorities), as well as from the papers discussed in Section 4.

rights. The voting rights attached to preference shares are defined by the articles of the firm and vary across firms. We combine limited voting (i.e., preference) shares with non-voting shares to calculate the ratio of votes to share capital. The consequence is that 19.91% of firms issue dual class shares and the *Own* = *20% Con* ratio is 18.74%.

4.2. Pyramiding, holdings through multiple control chains, and cross-holdings

Table 7 displays the control enhancements employed by firms that have a controlling shareholder at the 20% threshold. Pyramids are used by 19.13% of such firms in our sample, being most prevalent in Norway (33.90%) and least prevalent in Finland (7.46%). Holdings through multiple control chains are used by 5.52% of controlling shareholders, being most prevalent in Norway (20.34%), Italy (8.78%), and Germany (7.22%) but insignificant elsewhere. Cross-holdings are used by 0.73% of the controlling shareholders, being most prevalent in Germany (2.69%) and Norway (2.04%)[14] but marginal in other countries, whose regulations typically set a 10% cap on these stakes.

4.3. Other control-enhancing mechanisms

A controlling shareholder is said to be "alone" if no other owner controls at least 10% of the voting rights. Table 7 shows that this is true of 53.99% of the firms that are not widely held. Austria exhibits the highest percentage of such firms (81.82%) and Norway the lowest (38.78%). Bennedsen and Wolfenzon (2000) and Gomes and Novaes (1999) discuss the role of the second largest shareholders.

A member of the controlling family is said to be in "management" if he/she is the CEO, Honorary Chairman, Chairman, or Vice-Chairman. We assumed that individuals are in the same family if they have the same last names, a convention that understates family affiliation. Nevertheless, in more than two-thirds of the family controlled firms, the controlling owner is in management. The proportion is highest (above 70%) in Austria, Belgium, Ireland, Italy, Sweden, Switzerland, and the UK, and lowest in Portugal (50%).

4.4. Types of control-enhancing instruments by different types of shareholders

Table 8 details the means of enhancing control by families, the State, and widely held financial institutions. Pyramids and holdings through multiple control chains are used to enhance control in 13.81% and 3.22% of family controlled firms respectively, in 35.32% and 11.01% of State-controlled firms, and in 27.96% and 16.78% of firms controlled by widely held financial institutions. The State is most likely to be the controlling owner alone (58.72%), followed by families (54.74%),

[14] These figures are, respectively, 2.62% and 2.27% if we also include second ultimate owners (see Table 3).

Table 7
Percentage of firms adopting control-enhancing devices. We only include the 3,300 firms with controlling shareholders at the 20% level. *Pyramids* reports the percentage of firms whose largest controlling shareholder adopts pyramids as control devices. *Holdings through multiple control chains* reports the percentage of firms whose largest controlling shareholder adopts at least 5% of holdings through multiple control chains as control devices. *Cross-holdings* reports the percentage of firms whose largest controlling shareholder adopts cross-holdings as control devices. *Controlling owner alone* reports the percentage of firms that have single controlling owners. *Management* reports the percentage of firms whose top managers come from the largest shareholder's family. The table presents the percentage of firms controlled by different controlling owners at the 20% threshold.

Country	Number of firms	Pyramids	Holdings through multiple control chains	Cross-holdings	Controlling owner alone	Management
Austria	88	20.78	6.49	1.14	81.82	80.00
Belgium	104	25.00	2.38	0.00	71.15	80.00
Finland	92	7.46	1.49	0.00	41.30	69.23
France	522	15.67	2.87	0.00	64.75	62.20
Germany	631	22.89	7.22	2.69	59.90	61.46
Ireland	26	9.09	0.00	0.00	42.31	77.78
Italy	181	20.27	8.78	1.13	58.76	70.00
Norway	98	33.90	20.34	2.04	38.78	66.67
Portugal	68	10.91	0.00	0.00	60.29	50.00
Spain	465	16.00	5.43	0.22	44.30	62.50
Sweden	149	15.91	0.00	0.67	48.32	73.47
Switzerland	155	10.91	0.91	0.00	68.39	70.00
UK	721	21.13	4.93	0.00	43.00	75.85
Total	3,300	19.13	5.52	0.73	53.99	68.45

then by widely held financial institutions (44.74%); however, there are significant variations across countries.

5. Discrepancy between ownership and control

Pyramids, holdings through multiple control chains, cross-holdings, and deviations from the one-share-one-vote rule all create discrepancies between ownership and control rights. Table 9 shows that, on average, the largest ultimate controlling shareholder owns 34.64% of cash-flow rights and 38.48% of voting rights. These averages are computed over firms where at least one owner owns at least 5% of the control rights. The largest ultimate owners average the highest cash-flow rights in Germany (48.54%), Austria (47.16%) and France (46.68%), but the lowest cash-flow rights in Ireland (18.82%) and the UK (22.94%), followed by the Scandinavian countries of Norway (24.39%), Sweden (25.15%), and Finland (32.98%).

The largest ultimate owners average the highest voting rights in Germany (54.50%) and Austria (53.52%), but the lowest in Ireland (21.55%) and the UK (25.13%), again followed by the Scandinavian countries of Sweden (30.96%), Norway (31.47%), and Finland (37.43%).

Table 8

Means of enhancing control in Europe by types of controlling owners. We only include 3,012 firms with controlling shareholders at the 20% (2,332 firms controlled by families, 218 firms controlled by the State, and 462 firms controlled by widely held financial institutions) level. *Own = 20% Con* reports the average minimum percent of the book value of equity required to control 20% of votes. *Dual class shares* (%) reports the proportion of firms with dual class shares outstanding. *Pyramids* reports the percentage of firms whose largest controlling shareholder adopts pyramids as control devices. *Holdings through multiple control chains* reports the percentage of firms whose largest controlling shareholder adopts at least 5% of holdings through multiple control chains as control devices. *Controlling owner alone* reports the percentage of firms that have single controlling owners. Panel A presents percentages for family controlled firms, Panel B presents percentages for State-controlled firms, and Panel C presents percentages for firms controlled by widely held financial firms.

Country	Number of firms	*Own = 20% Con*	Dual class shares (%)	Pyramids	Holdings through multiple control chains	Controlling owner alone
Panel A: Family-controlled firms						
Austria	51	18.91	21.57	11.76	1.96	86.27
Belgium	67	20.00	0.00	8.96	4.48	61.19
Finland	65	14.82	43.55	6.15	1.54	36.92
France	395	19.96	1.01	13.16	3.04	63.80
Germany	460	18.75	18.26	14.57	3.04	66.96
Ireland	17	19.53	16.67	5.88	0.00	35.29
Italy	122	18.34	42.62	20.34	5.93	54.55
Norway	60	18.33	21.28	23.33	5.00	38.33
Portugal	54	20.00	0.00	16.67	3.70	61.11
Spain	351	20.00	0.00	11.97	5.41	39.32
Sweden	117	9.34	67.12	18.80	0.85	47.01
Switzerland	106	13.52	68.57	7.55	1.89	65.09
UK	467	19.16	18.84	13.70	2.14	46.47
Total	2,332	18.64	17.61	13.81	3.22	54.74
Panel B: State-controlled firms						
Austria	16	19.67	12.50	37.50	18.75	68.75
Belgium	3	20.00	0.00	33.33	0.00	100.00
Finland	19	16.81	21.05	5.26	0.00	47.37
France	30	19.93	3.33	36.67	3.33	73.33
Germany	41	19.90	4.88	43.90	4.88	17.07
Ireland	1	20.00	0.00	0.00	0.00	100.00
Italy	22	18.50	40.91	27.27	9.09	77.27
Norway	24	20.00	0.00	70.83	58.33	37.50
Portugal	5	20.00	0.00	0.00	0.00	80.00
Spain	26	20.00	0.00	57.69	3.85	88.46
Sweden	12	10.92	62.50	0.00	0.00	75.00
Switzerland	16	18.09	25.00	6.25	0.00	81.25
UK	3	20.00	0.00	33.33	33.33	0.00
Total	218	18.98	13.17	35.32	11.01	58.72

Table 8 (*continued*)

Country	Number of firms	*Own = 20% Con*	Dual class shares (%)	Pyramids	Holdings through multiple control chains	Controlling owner alone
Panel C: Firms controlled by a widely held financial firm						
Austria	9	18.29	55.56	22.22	22.22	88.89
Belgium	16	20.00	0.00	0.00	0.00	93.75
Finland	0	n.a.	n.a.	n.a.	n.a.	n.a.
France	69	19.94	2.90	15.94	1.45	60.87
Germany	65	18.85	21.54	53.85	40.00	33.85
Ireland	3	20.00	0.00	33.33	33.33	100.00
Italy	27	18.39	33.33	29.63	14.81	40.74
Norway	5	20.00	0.00	40.00	20.00	40.00
Portugal	3	20.00	0.00	0.00	0.00	0.00
Spain	74	20.00	0.00	20.27	9.46	51.35
Sweden	6	13.72	60.00	33.33	33.33	16.67
Switzerland	19	15.51	31.58	15.79	0.00	68.42
UK	166	18.77	31.93	27.71	18.67	35.54
Total	462	18.98	20.67	27.96	16.78	44.74

n.a.: Not available.

Table 9, Panel C shows that the largest ultimate shareholder's average ratio of cash-flow to voting rights is 0.868, being lowest in Switzerland (0.740), Italy (0.743), and Norway (0.776), and highest in Spain (0.941), Portugal (0.924), and France (0.930).

To measure the concentration of corporate control in families, Table 10 displays the average number of firms controlled by each family via control chains that include at least 10% of the control rights at each link. For example, if a family controls 20% of Firm A, Firm A controls 15% of Firm B, and Firm B controls 9% of Firm C, then we include only A and B amongst the firms controlled by that family. Italy has the largest average number of firms controlled by a single family (1.46), while Finland (1.05) and Switzerland (1.10) have the smallest.

Another perspective on the concentration of family control is provided by the percentage of total market capitalization controlled by the top families in each country. For each family, we sum the market capitalization of all firms in which the family is the largest controlling shareholder, then divide by the market capitalization of all firms in our sample from that country. We then rank families by the share of market capitalization that they control and calculate the share of market capitalization controlled by the top 1, 5, 10, and 15 families.

The top family controls 17.89% of total market capitalization in Switzerland and 10.40% in Italy,[15] but only 1.40% in the UK, 1.66% in Spain and 3.40% in Ireland. The top 15 families control 36.77% of total market capitalization in Portugal and 36.63% in Belgium, but only 6.55% in the UK, 13.48% in Spain, and 15.38% in Ireland.

[15] Brioschi et al. (1989) show that, in the mid-1980s, more than a quarter of total market capitalization could be traced to the control of three single families.

Table 9
Cash-flow and control rights. This table includes data relating to 4,806 publicly traded corporations (including both financial institutions and non financial institutions) where the largest controlling owner has at least 5% of voting rights. *Cash-flow rights* represents the ultimate ownership stake held by the largest controlling shareholder. *Control rights* the percentage of voting rights controlled by the largest controlling shareholder.

Country	Number of firms	Mean	Standard deviation	Median	1st quartile	3rd quartile
Panel A: Cash-flow rights						
Austria	95	47.16	23.52	50.00	25.50	65.00
Belgium	120	35.14	24.96	36.10	14.98	51.81
Finland	119	32.98	23.94	27.60	14.60	49.91
France	604	46.68	26.69	48.98	24.69	66.00
Germany	690	48.54	31.46	48.89	21.05	75.00
Ireland	68	18.82	17.32	14.24	6.76	26.03
Italy	204	38.33	25.13	39.68	16.61	56.83
Norway	149	24.39	21.26	19.42	8.91	36.12
Portugal	86	38.42	20.45	39.31	19.83	52.00
Spain	610	42.72	30.46	32.55	18.50	64.91
Sweden	244	25.15	23.06	17.30	9.45	33.55
Switzerland	189	34.66	24.69	29.00	12.85	51.00
UK	1,628	22.94	17.87	16.21	10.96	29.66
Total	4,806	34.64	26.76	25.90	13.02	51.00
Panel B: Control rights						
Austria	95	53.52	22.77	54.70	34.00	75.00
Belgium	120	40.09	23.20	39.56	19.49	55.86
Finland	119	37.43	22.44	33.70	20.80	52.36
France	604	48.32	25.55	50.00	28.70	66.00
Germany	690	54.50	28.70	50.76	27.00	76.91
Ireland	68	21.55	16.39	16.64	10.39	26.56
Italy	204	48.26	21.00	50.11	31.39	63.15
Norway	149	31.47	20.18	27.78	15.10	43.59
Portugal	86	41.00	19.18	44.95	22.28	52.30
Spain	610	44.24	29.59	35.73	20.00	65.03
Sweden	244	30.96	22.37	24.90	14.50	40.55
Switzerland	189	46.68	25.97	50.00	22.50	63.00
UK	1,628	25.13	17.87	18.02	13.28	30.19
Total	4,806	38.48	26.10	30.01	15.96	53.98
Panel C: Ratio of cash flow to control rights						
Austria	95	0.851	0.224	1.000	0.704	1.000
Belgium	120	0.779	0.360	1.000	0.596	1.000
Finland	119	0.842	0.246	1.000	0.800	1.000
France	604	0.930	0.189	1.000	1.000	1.000
Germany	690	0.842	0.267	1.000	0.709	1.000
Ireland	68	0.811	0.321	1.000	0.683	1.000
Italy	204	0.743	0.337	0.971	0.548	1.000
Norway	149	0.776	0.341	1.000	0.532	1.000
Portugal	86	0.924	0.218	1.000	1.000	1.000
Spain	610	0.941	0.178	1.000	1.000	1.000
Sweden	244	0.790	0.339	1.000	0.526	1.000
Switzerland	189	0.740	0.290	0.830	0.468	1.000
UK	1,628	0.888	0.228	1.000	0.907	1.000
Total	4,806	0.868	0.255	1.000	0.852	1.000

Table 10
How concentrated is control by families/unlisted firms? This table provides summary statistics on the concentration of control by families and unlisted firms. *Average number of firms per family* refers only to firms in the sample. *Percent of total market value of listed corporate assets that families control* is the aggregate market value of common equity of firms controlled by the largest, the top 5, the top 10, and the top 15 families divided by the total market value of common equity for all firms included in the sample for a given country.

Country	Average number of firms per family	Percent of total market value of listed corporate assets that families control			
		Top family	Top 5 families	Top 10 families	Top 15 families
Austria	1.16	5.64	15.59	19.47	22.15
Belgium	1.22	5.63	20.38	30.45	36.63
Finland	1.05	3.94	13.98	21.82	25.90
France	1.18	5.94	22.04	29.18	33.80
Germany	1.24	5.43	15.66	21.29	25.01
Ireland	1.16	3.40	11.88	14.46	15.38
Italy	1.46	10.40	16.83	20.18	21.92
Norway	1.29	3.73	16.01	23.13	27.18
Portugal	1.23	6.11	24.59	34.23	36.77
Spain	1.19	1.66	6.97	10.92	13.48
Sweden	1.27	3.37	9.29	13.26	15.66
Switzerland	1.10	17.89	24.35	28.94	30.93
UK	1.17	1.40	4.11	5.85	6.55

6. Conclusion

In this paper, we document the ultimate ownership of 5,232 listed firms in 13 Western European countries. Widely held and family controlled firms predominate. Widely held firms are more important amongst financial and large firms, while families are more important for non financial and small firms. In some continental European countries, the State controls a significant number of larger firms. We also document the means whereby owners gain control rights in excess of their cash-flow rights. The use of multiple class voting shares contribute only marginally to this, except in just a few countries. The use of pyramids and holdings through multiple control chains is also marginal.

References

Barclay, M., Holderness, C., 1989. Private benefits from control of public corporations. Journal of Financial Economics 25, 371–395.

Barth, J.R., Caprio Jr., G., Levine, R., 2000. Banking systems around the globe: do regulation and ownership affect performance and stability? Unpublished working paper, World Bank, Washington DC.

Becht, M., Boehmer, E., 1998. Ownership and voting power in Germany. Unpublished working paper, European Corporate Governance Network.

Bennedsen, M., Wolfenzon, D., 2000. The balance of power in closely held corporations. Journal of Financial Economics 58, 113–139.

Bergström, C., Rydqvist, K., 1990. Ownership of equity in dual-class firms. Journal of Banking and Finance 14, 255–269.

Berle, A., Means, G., 1932. The Modern Corporation and Private Property. MacMillan, New York.

Bianchi, M., Bianco, M., Enriques, L., 1998. Pyramidal groups and the separation between ownership and control in Italy. Unpublished working paper, European Corporate Governance Network.

Bloch, L., Kremp, E., 1998. Ownership and control in France. Unpublished working paper, INSEAD Business School.

Bolsa de Valores de Lisboa, 1998. Sociedades Cotadas 1997. Lisbon Stock Exchange, Lisbon.

Brioschi, F., Buzzacchi, L., Colombo, M.G., 1989. Risk capital financing and the separation of ownership and control in business groups. Journal of Banking and Finance 13, 747–772.

Claessens, S., Djankov, S., Lang, L.H.P., 2000. The separation of ownership and control in East Asian corporations. Journal of Financial Economics 58, 81–112.

Claessens, S., Djankov, S., Fan, J., Lang, L.H.P., 2002. Disentangling the incentive and entrenchment effects of large shareholdings. Journal of Finance, forthcoming.

Comision Nacional del Mercado de Valores, 1998. Participaciones significativas en sociedades cotizadas. (Data file). CNMV, Madrid.

Commerzbank, 1997. Wer gehört zu wem, 19th Enlarged Edition. Commerzbank AG, Frankfurt-am-Main.

Commissione Nazionale per le Società e la Borsa, CONSOB, 1997. Bollettino – edizione speciale n. 4/97 – Compagine azionaria delle società quotate in borsa o ammesse alle negoziazioni nel mercato ristretto al 31 dicembre 1996. CONSOB, Milan.

Crespi-Cladera, R., Garcia-Cestona, M.A., 1998. Ownership and control: a Spanish survey. Unpublished working paper, European Corporate Governance Network.

De Jong, A., Kabir, R., Marra, T., Roell, A., 1998. Ownership and control in the Netherlands. Unpublished working paper, European Corporate Governance Network.

Financial Times, 1997. Extel Financial, Company Research CD-rom #36/1997. FT, London.

Gardiol, L., Gibson-Asner, R., Tuchschmid, N.S., 1997. Are liquidity and corporate control priced by shareholders? Empirical evidence from Swiss dual class shares. Journal of Corporate Finance 3, 299–323.

Goergen, M., Renneboog, L., 1998. Strong managers and passive institutional investors in the UK. Unpublished working paper, University of Reading.

Gomes, A., Novaes, W., 1999. Multiple large shareholders in corporate governance. Unpublished working paper, University of Pennsylvania, Wharton.

Holderness, C., Kroszner, R., Sheehan, D., 1999. Were the good old days that good? Changes in managerial stock ownership since the great depression. Journal of Finance 54, 435–470.

Horner, M.R., 1988. The value of the corporate voting right: evidence from Switzerland. Journal of Banking and Finance 12, 69–84.

Il Sole 24 ore, 1997. Il taccuino dell'azionista. Il Sole 24 Ore Radiocor, Milan.

Jensen, M., Meckling, W., 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. Journal of Financial Economics 11, 5–50.

Johnson, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2000. Tunnelling. American Economic Review Papers and Proceedings 90, 22–27.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 1997. Legal determinants of external finance. Journal of Finance 52, 1131–1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. Journal of Finance 54, 471–518.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 2002. Investor protection and corporate valuation. Journal of Finance 57, 1147–1170.

Lease, R.C., McConnell, J.J., Mikkelson, W.H., 1983. The market value of control in publicly traded corporations. Journal of Financial Economics 11, 439–471.

Lins, K., Servaes, H., 1999a. International evidence on the value of corporate diversification. Journal of Finance 54, 2215–2239.

Lins, K., Servaes, H., 1999b. Is corporate diversification beneficial in emerging markets? Unpublished working paper, London Business School.

London Stock Exchange, 1997. The London Stock Exchange Yearbook. LSE, London.

Megginson, W., 1990. Restricted voting stock, acquisition premiums, and the market value of corporate control. The Financial Review 25, 175–198.

Muus, C.K., 1998. Non-voting shares in France: an empirical analysis of the voting premium. Unpublished working paper, Johann Wolfgang Goethe-Universitat, Frankfurt-am-Main.

Muus, C.K., Tyrell, M., 1999. An empirical analysis of the voting premium in Germany. Unpublished working paper, Johann Wolfgang Goethe-Universitat, Frankfurt-am-Main.

Nenova, T., 2000. The value of corporate votes and control benefits: a cross-country analysis. Unpublished working paper, Harvard University.

Renneboog, L., 1998. Shareholding concentration and pyramidal ownership structures in Belgium: stylized facts. Unpublished working paper, European Corporate Governance Network.

Rydqvist, K., 1992. Dual-class shares: a review. Oxford Review of Economic Policy 8, 45–57.

Shleifer, A., Vishny, R., 1997. A survey of corporate governance. Journal of Finance 52, 737–783.

The Herald Tribune, 1997. French Firm Handbook 1997. SFB-Paris Bourse.

Union Bank of Switzerland, 1998. Swiss Stock Guide 96/97. UBS, Zurich.

Wiener Börse, 2000. Yearbook 1999. Vienna Stock Exchange, Vienna.

Zingales, L., 1994. The value of the voting right: a study of the Milan stock exchange experience. Review of Financial Studies 7, 125–148.