Ownership and Control in Colombian Corporations

LUIS H. GUTIEREZ*
lgutierr@urosario.edu.co
Universidad del Rosario

CARLOS POMBO[1]
capombo@urosario.edu.co
Universidad del Rosario

RODRIGO TABORDA**
rtaborda@urosario.edu.co
Universidad del Rosario

Abstract

We study the separation of ownership and control for an average of 140 listed non-financial Corporations in Colombia during the 1996-2002 period. Breaking the sample according to their listing status and economic activity, voting rights are greater than cash flow rights because of the presence of indirect ownership across firms that belong mainly to pyramidal and cross share holdings. The study sample also includes an important set of non-affiliated firms. Ownership statistics show high concentration for the top-four largest voting blocks similar to the levels observed in continental Europe, although the largest stake has on average 20% lower voting rights than the average observed in that region. Finally, holding investment and trust funds play a central role as the holdings' ultimate controllers.

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* Associate Professor Department of Economics, Universidad del Rosario.
** Assistant professor Department of Economics Universidad del Rosario and PhD student Australian National University

Resumen

Esta investigación analiza la separación entre propiedad y control para un promedio de 140 empresas no financieras en Colombia inscritas en Bolsa de Valores para el período 1996-2002. Dividiendo la muestra de acuerdo con su estatus de inscripción y por actividad económica, los derechos de votación son mayores a los derechos de flujo de caja debido a la presencia de propiedad indirecta a través de las firmas que pertenecen a grupos económicos con estructuras piramidales o de propiedad cruzada. La muestra de estudio incluye un conjunto importante de empresas no afiliadas. Las estadísticas de propiedad muestran una alta concentración para los cuatro primeros bloques de votación similar a los niveles observados en Europa continental, aunque el primer bloque es un 20% menor a lo observado en esta región. Finalmente, las sociedades de inversión y contratos de fidecomiso tienen un papel central como accionistas controlantes en las empresas y en de los conglomerados.

1.   Introduction

The modern literature of corporate structure has stressed the agency problem where ownership is dispersed and shareholders have a passive role. Executive directors have a strong independence and cross incentives through bonus shares payments. This implies that they have incentives to disclose information when a company's investments succeeded but they also hide information when there are significant losses. This figure usually applies to big American corporations and British publicly traded firms where legislation forbids individual stakes greater than 25%.

Studies published during the last five years had questioning the typical Bearle and Means (1932) corporation, providing evidence that ownership structures outside the Anglo-Saxon world are complex due to the existence of cross-shareholdings, webs, pyramids, rings, and other many types of structures and holdings' webs. The most representative studies on the issue of measuring corporate ownership and control beyond the US case since the mid 1990s are perhaps Laporta et al (1999), Claessenss et al (2000), and Barca and Bech (2001) . The first study covers the 20 largest publicly traded firms in each of the 21 OECD economies, along with six non-OECD countries[2]. Their main finding was that the largest shareholders and ultimate owners leverage their corporate control through pyramids and other hierarchical business group structures.

The second study assembled data on 2,980 East Asian corporations. This study is by far the most comprehensive regarding the measurement of cash flow to voting rights ratios. The main finding is that voting rights exceed cash flow rights due to pyramid structures and cross holdings. The third is composed by nine case studies of corporate ownership within continental Europe. It includes cases in Austria, Belgium, France, Germany, Italy, Netherlands, and Spain. The common finding across those studies is that ownership and control are highly concentrated and differs in large scale from the UK and US patterns. In fact, as more results became available from new country studies, they tend to confirm that widely held corporate structures are outlier structures and are found mainly in the UK and the US. Such pattern should not differ within Latin American publicly traded corporations. The largest

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[2] They are: Argentina, Israel, Hong Kong, South Korea, Mexico, and Singapore.

listed corporations are central pieces of complex business group structures that form several webs, through property chains between corporations and unlisted firms, financial and non-financial firms, core and non-core businesses, and in general different types of *pure* cross shareholdings.

Business groups in Colombia also respond to complex structures. They are centered around a core business with strategic alliances in non-core activities along with holding's investment and fiduciary funds that play a central role as ultimate controllers as well as key players in forming coalitions to control boards. This paper provides for the first time evidence in measuring ownership and control for Colombian corporations following the methodologies used in the studies of La Porta (1999) and their successors, becoming the first comprehensive case study for one of the main emerging markets in Latin America where there is not much published work on the topic. Besides this introduction the paper has seven additional sections. Section 2 reviews the studies on corporate control and governance in Latin America and Colombia. Section 3 explains the used dataset as well as the followed methodology to measure integrated ownership as proxy of investor's voting rights. Section 4 shows the ownership statistics for an average sample of 141 real sector listed firms during the 1996-2002 period that were overseen by the Superintendence of Securities. Section 5 presents the ownership structure analysis of the three largest and oldest business groups in the country. Section 6 displays the core results regarding the separation of corporate ownership and control. Section 7 complements the previous exercise by studying the composition of the ultimate controllers and its variation across periods. Section 8 concludes.

2.   Corporate Ownership and Governance Studies in Latin America and Colombia

The subject of Corporate Governance (CG) has generated many case country studies for developed economies. In contrast, research for developing economies is limited and new. By mid-2003 there were few published papers on the topic for the case of Latin America. We can highlight the work of Agosin and Pastén (2003) who present a description of CG in Chile during the 90s. They analyze CG as an insider system where business groups control publicly traded companies. Taking a sample of 177 listed companies, they found i) a high degree of corporate concentration, a problem that is evident in all economic sectors, and ii) the

debt/equity ratios are low when compared to those of Korea, The last result is puzzling since insider systems make use of debt instead of equity to finance their projects to protect their ownership and control structures. The explanation is due to the apparent underdevelopment of the Chilean capital market and the interlinked debt process of Chilean firms. They also analyze how the creation of institutional investors, like pension funds have impacted the domestic capital markets. The authors conclude that *poor* governance by corporate companies has rendered the market *without liquidity* and has impaired a full development of Chilean capital markets. Escobar *et al.* (2000) present a complete overview of the new legal mandate on CG in Chile, Law 19.705 enacted in 2000.

Apreda (2000) reviews CG in Argentina before 1990 and provides an account of the legal frame adopted in the 90s to implement good governance principles in corporate companies. As in the Chilean case, it is clear that the development of CG was induced by the privatization of SOEs and firm mergers. These events framed the evolution of CG in Argentina moving from family-owned companies to corporate companies driven by foreign and institutional investors, which have contributed to streamlining the governance system as in common law countries.

Claessens, Klingebiel, & Lubrano (2000) study the Brazilian case. These authors found also *poor* governance in Brazilian corporations despite the existence of a *Code of Best Practice* issued by the Brazilian Institute of CG. One reason is the prevalence of non-voting shares in corporations, and the lack of good measures to protect minority investor rights. All in all stock concentration remains very high in Brazil.

Neto (2000) provides an analysis of the legal aspects of CG in Brazil regarding specific topics. The paper follows a questions-answers format about developments on domestic CG issues. Saito (2000) reviews the CG legislation in Brazil focusing on the legal determinants of share composition with voting and non-voting powers, and the degree of protection provided to outside investors. The paper tests three hypotheses. The first one tries to see how the ratio of non-voting equity to total equity correlates with the voting premium, the second test how the price differential between voting and non-voting stocks behaves with leverage, and the third one tries to see the impact of the 1997 corporate law on ordinary and preferred marginal shareholders.

Last, Chong *et al.* (2003) have also studied how (to have good) CG affects the volatility of private capital flows and to what extent CG can limit the volatility of FDI flows to Latin American countries. Taking some measures (simple and interacted) of CG like the ones proposed by La Porta *et al*. (1999), i.e., investor protection (shareholder and creditor rights), they found that "*Effective credit rights and effective shareholder rights play a significant role in limiting how portfolio flows respond to external nominal shocks*"(page 19). Therefore, countrywide developments in CG become a key element to avoid disruptive and negative volatility in FDI flows to the country.

Regarding Colombia there are no studies either on corporate governance or corporate ownership and control that follow the modern approach of ultimate controller analysis in representative studies such as Laporta et al (1999), Claessenss et al (2000), and Barca and Bech (2001) above mentioned. Nonetheless, there are related studies in the field of capital market development. Such studies trace back to 1994 when the Finance Ministry [*Ministerio de Hacienda y Crédito Público* (MHC)] sponsored a series of studies on capital markets known as the *Misión de Estudios sobre el Mercado de Capitales*. The collective work had the purpose of advising and making policy recommendations to MHC in subjects regarding the Colombian capital markets, such us obstacles to their development, the reforms that should be made to the institutional frame, and the steps needed to develop tools of coverage. The final report[3] summarizes the main findings on seven topics: the capital markets in Colombia, the relationship between the capital markets and the macroeconomic environment, recent trends and some perspectives in the supply and demand of financial assets, new products as securisation and leasing, hedging instruments and over-the-counter markets, and capital market regulatory policies.

The subject of CG is relatively new. It is, then, not surprising that despite the Cadbury report (p. 11), 'The financial aspect of CG", had come to the light in December, 1992, and had for the first time stated *"The country's economy depends on the drive and efficiency of its companies. Thus the effectiveness with which their boards discharge their responsibilities determines British competitive position. They must be free to drive their companies forward but exercise that freedom within a framework of effective accountability. This is the essence of*

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[3] Ministerio de Hacienda, Banco Mundial, y Fedesarrollo, "Misión de Estudios del Mercado de Capitales" Informe Final, mayo 1996.

any good corporate governance", the Mission's final report did not address the CG issue as constraint for development of the capital market in Colombia. The Mission's report did not mention even once the words of *gobierno corporativo*, *gobernabilidad corporativa*, or *gobierno societario*, three terms synonymous with CG. The few elements that the report stressed on the subject were some problems that foreign investors listed in a survey conducted in 1995. The more relevant ones were that in Colombia there was: i) lack of liquidity, ii) high stock ownership concentration, iii) insufficient information and iv) lack of transparency in Colombia's capital market. Quoting the report, *"All in all, the Colombian market was rated among the three least attractive in Latin America, and among the five least attractive among the emerging markets"*. Thus, the mission report was addressing the CG issue without propose it.

The same happened with a recent study about the evolution and behavior of capital markets in Colombia during the nineties [Arbeláez, Zuluaga, & Guerra (2002)], where the subject and importance of CG were limited to a single footnote, ignoring the agency theory and empirical evidence that the literature on financial economics has been stressing during the last 20 years. However, the study did mention some concerns about regulatory and institutional development, but the authors do not seem to give too much weight to them. In fact, they focus their short and implicit analysis of governance on bank versus market-based modes given their diagnostic about the development of capital markets in Colombia. But as La Porta *et al* (2000a, 18) state *"the classification of financial systems into bank and market centered is neither straightforward nor particularly fruitful...(and that) ...on average, countries with bigger stock markets also have higher ratios of private debt to gross domestic product (GDP)"* and (2000, 19) that *"Investor rights work better to explain differences among countries, and in fact are often necessary for financial intermediaries to develop."*

On the other hand, we can highlight two descriptive studies about business groups in Colombia that give a rough idea of the nature of the domestic corporate structure. The first one is the study by Franco and De-Lombaerde (2000) on Colombian parent firms with subsidiaries in foreign countries. This study presents statistics about Colombian direct investment abroad by company and industry group during the 1990s. The core analysis centers on the motives that domestic enterprises had to undertake new foreign investments mainly in other Latin American markets during the 1990s after the capital flows and foreign investment statute

reforms that were central pieces of the economic openness program of 1991. They present a list of strategic alliances of Colombian enterprises with foreign investors looking to penetrate markets abroad and expand their sales. One mechanism has been the establishment of new partnerships with local or multinational firms already settled in Latin America. This has been the case of Colombian investment in Peru and Venezuela. Their analysis required the assembling of a complete record of firms by business activity and group affiliation.

The second one is the book of Colmenares (2004) about the history of business groups in Colombia. This is an updated version of a previous work published in the 1970s by the same author. This work is a narrative journalist type work with plenty of details but no technical economic analysis. Nonetheless, it provides useful information regarding the ownership structure of the largest business groups in the country[4].

3.   Data and Methodology

The data of corporate shareholders used in this study comes from two sources: i) Superintendence of Securities [*Superintendencia de Valores* (SVAL)] and ii) Superintendence for Commercial Societies [*Superintendencia de Sociedades* (SSOC)]. These two institutions are responsible for inspecting and overseeing publicly traded corporations and larger unlisted firms respectively. The SVAL ownership database comes from the *National Equity Registry Forms,* which records information of a company's top 20 shareholders. This form is mandatory for all equity issuers that are under the oversight of the Superintendence, and must be updated on a yearly basis. The form also records information of names of members o board of directors, number of outstanding shares, number of preferred dividend shares and the nominal value for each type of shares. The main point of this obligation is that each listed company must provide detailed information on its current statutes, the management enrolment list, the relationship of any of its employees with traders or listed companies at the stock exchange, the composition of the company's social capital, and company's internal rules and regulations.

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[4] The official source of parent and subsidiary companies information is at Superintence for Commercial Societies (*Superintendencia de Sociedades*) along with chambers of commerce. The Superintendence's ownership dataset constitutes one of the main data sources of shareholders records used in this study as is explained in section 3.

We assembled shareholders records for 233 real sector companies that were listed during the 1996-2002 period[5]. Having a panel dataset of ownership improves the analysis because we can capture ownership dynamics, an element that is not included in what one usually finds in international studies of corporate control. Companies were classified according to listing status and economic activity. The first one shows if by the end of 2002 a particular company was still listed or rather was de-listed and canceled its equity registry. This feature is important from the bias selection standpoint. We are including all the successful and failing cases. The second classifies companies according to ISIC (Rev. 2) one digit codes[6]. The above dataset provides the first and in some cases second layers of a company's direct ownership stakes.

Table 1 presents the total number of companies with equity issues registered at the Superintendence and by listing status and economic activity for the 1996-2002 period. There are three details on the data structure worth mentioning. First, the weight of listed companies increases during the time span passing from 39% in 1996 to 76% in 2002. One natural question that arises is what explains the persistence of de-listed firms in the sample. The answer is not straightforward and might be a result of several factors. On one hand, the size of the Colombian stock market is still small relative to other emerging markets in Latin America. In fact, the traded volume of stocks relative to fixed income securities has been less than 10% since 1970 up to 2002. On the other hand, most of the companies overseen by the Superintendence are usually bond issuers rather than stock issuers.

Second, the ownership dataset depends heavily on manufacturing firms, which are more than 50% in the sample. This feature is not a coincidence, it is basically the result of the Colombian stock exchange structure. Manufacturing firms are the oldest publicly traded firms in the country and along commercial banks have the highest traded stocks at the exchange. Moreover, we have manufacturing firms in the sample with more than 50 years of activity in the stock market[7]. Third, most of the companies classified as financial, insurance and real estate firms are holding investment funds (*sociedades de inversión)* or collective trust funds

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[5] We excluded all companies subject to special regulations such as public utilities, financial intermediaries, educational institutions, and livestock funds were their performance might be affected or induced by regulation and State property participation, which makes results no comparable.

[6] The access to the Superintendence of Securities' registry forms is publicly available on individual cases. Nonetheless, the access to the entire companies' dossiers needs a special justified request.

[7] For example, these are the cases of *Bavaria S.A* and *Fabricato S.A*. The first is the leading brewery in the country and one of the largest in Latin America. The second is the largest textile mill in the county and one of the symbols within Colombia's manufacturing history.

contracts (*fidecomisos de inversión*), which play a central role as ultimate controllers within business groups. Fourth and last, the total real sector companies registered at the Superintendence during the 1996-2002 period is 257 firms, thus the study-sample represents 90% of total population.

Table 1
Number of firms in the study sample by listing status and economic activity

status/economic activity	year						
	1996	1997	1998	1999	2000	2001	2002
LISTED	71	83	81	79	83	91	102
DE-LISTED	109	43	62	62	50	42	32
Agriculture, Hunting, Forestry and Fishing	8	5	5	5	5	5	6
Mining and Quarrying	5	2	3	2	2	2	2
Manufacturing	88	63	71	72	69	75	73
Construction	11	4	5	5	4	4	4
Wholesale, Retail Trade, Lodging Services	25	15	16	15	13	10	11
Transport, Storage and Communication	13	11	12	12	11	11	12
Financing, Insurance, Real State	19	18	21	21	19	19	18
Community, Social and Personal Sevices	8	7	7	6	9	6	8
Other non-classified Business Activities	3	1	3	3	1	1	
Total sample	180	126	143	141	133	133	134

Source: Superintendence of Securities - National Registry Forms

In order to complete a company's second and in some cases a third property layer, we assembled a dataset of major shareholders' information of unlisted firms that showed up as a major shareholder of a listed corporation and affiliated within a business group. This information comes from the Superintendence for Commercial Societies. The Superintendence, according to Law 222 of 1995, and the subsequent Decree 3100 of 1997, mandates that commercial companies with total assets or total earnings equal or over twenty thousand legal monthly minimum wages (US$ 2.9 million) at the end of a given fiscal year are subject to the inspection and surveillance of the Superintendence. Further, it oversees all commercial companies whose owners are, in turn, companies subject to oversight and who own at least 20% of the commercial company. In this way, the Superintendence can follow-up

all matrix, branch and subsidiary company. Decree 3100 also empowered it to oversee the subsidiaries of all foreign companies.

Figure 1 explains the assembling process of the entire ownership dataset. At the top of the figure one finds the listed firms included in the analysis of ownership and control, which are the companies with records at the Superintendence of Securities for a given year. This group of firms is what we call the SVAL dataset. The larger shareholders can be an individual or family, a listed firm, an unlisted firm, a non-profit organization, a holding investment or trust fund, and other legal contractual forms allowed by law[8]. If the shareholder is a firm it can be listed or unlisted. In the first case, a second layer is added from the SVAL dataset, while in the second we complete the information with the Superintendence for Commercial Societies or SSOC dataset. We continue such process until we complete a third layer for most listed companies. Our SSOC dataset includes information for about 431 unlisted firms from 1996 up to 2002.

The Superintendence requires companies to report annually their balance sheets and income statements under a common format known as PUC[9]. The Superintendence registries include 240 variables for the balance sheet and 12 variables for the income statement. The last one is in practice a summary of the main accounts of earnings and spending flows. In addition to the statements there is a file that reports the company's Tax ID number, legal status, and type of legal statutes constitution such as corporate, limited liability, cooperative, and SCA firms[10].

The financial statements are complemented by 22 annexes, which record information on the income statement notes, employment, wages and salaries, and investment in fixed assets. The shareholders information is in appendix 12, which records on average the name of the 10 largest shareholders and their number of outstanding shares for corporations and the partnership shares for limited liability companies. The information recorded at the annexes is

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[8] For instance, there are the inheritances and dead duties.

[9] *Plan único de cuentas.*

[10] SCA means *"Sociedad en Comandita por Acciones"*. Corporate law in Colombia follows the French system, thus SCAs are the *Societes en Commandite par Actions* of the French and Belgian system. These are firms with two types of partnerships: the passive ones or *le commnaditaires* and the active ones or *le commadites*. The former delegate control over the later ones and are accountable for the firm's liabilities.

confidential and not publicly available[11]. In sum, we assembled three layers of ownership. The first one or first layer, results directly from the main twenty shareholders provided by the National Securities Registries of each listed companies. The second layer is formed by those companies, listed or not, that are (or were) shareholders of the companies included in the SVAL dataset. The third layer is formed by a listed or unlisted company, that are (or were) the largest owners of the firms included in the second layer.
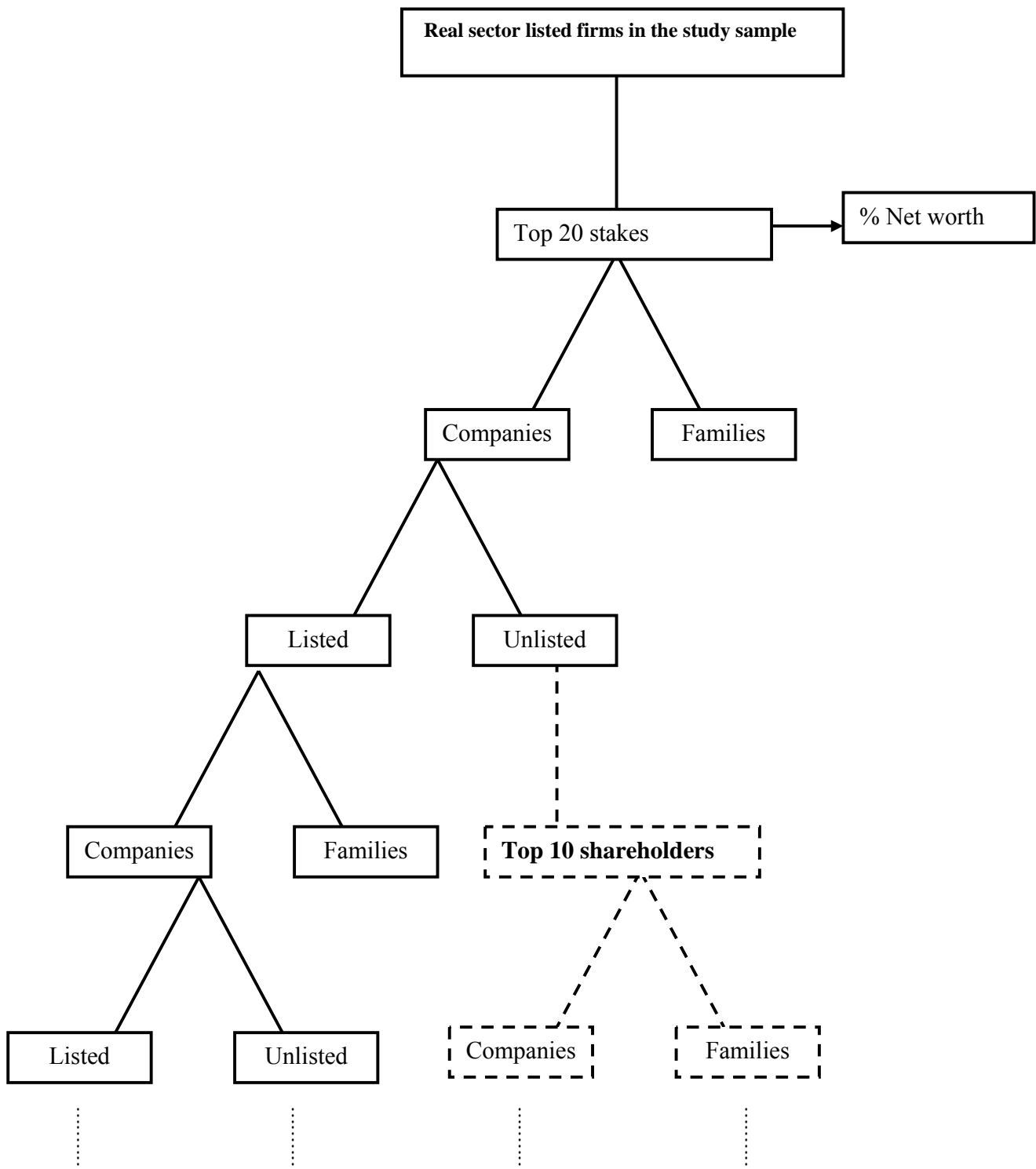
Methodology

This section discusses conceptual and methodological issues on the measurement of cash flow rights and voting rights, which constitute the central pieces for the analysis of firm separation between ownership and control. The study of ultimate ownership or shareholder controller starts with the fundamental question of asking who really the owner of a firm is: the investor who has greater direct stakes or the investor who controls. There are several theories in the fields of Corporate Finance and Industrial Organization that explain the different corporate and industry structures. The classic view comes from the vertical restrains theory of Spengler (1950), Mathewson and Winter (1983), and Rey and Tirole (1986), which analyze the incentives for vertical control from an upstream firm to a downstream firm when intermediate good markets are not competitive. A second theoretical line is based on the delegation problem within the principal-agent framework from shareholders to company's directives or CEOs. This approach is commonly used in corporate governance studies. Since Grossman and Hart (1986)'s paper this literature has understood owners as those who control a firm.

The studies of ownership and control have followed two complementary approaches to identify and measure ultimate controllers. The first one follows the La Porta et al (1999), methodology that defines a firm's ultimate controller as those shareholders whose direct and indirect voting rights exceed 20 percent. Under one-share-one vote rule this methodology says that if a shareholder has a direct stake in a company you have to add something through the indirect ownership you might have along the property chain. Thus, the ratio of cash flow to

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[11] The University signed in 2003 a cooperation agreement with *Superintendencia de Sociedades* in order to access the part of the appendix 12 information. The confidentiality clause implies *no disclosure* of any individual name in any form.

FIGURE 1 -   OWNERSHIP DATA STRUCTURE AND METHODOLOGY

Notes: Solid line of the scheme shows full disclosure / no statistical constraint by Superintendence of Securities. Dotted line of the scheme shows no disclosure status.

voting rights is less or equal to 1, meaning that 1 dollar of direct investment will provide 1 times (1+x) voting rights if you have any indirect ownership.

The second one follows a portfolio view of a company's direct investments. This methodology uses an input-output methodology to compute *integrated ownership* stakes as the sum of direct and indirect ownership. This approach has been used in several case studies in Japan and continental Europe, where business groups structures are more complex than those in the US and United Kingdom due to the existence of cross share holdings, rings, pyramidal cascades, interlocks with financial institutions and high concentration levels of voting and direct ownership stakes.

Applications are traced back to the work of Brioschi, Buzzachi, and Colombo (1989) and Ellerman (1991) who used an input-output theory to arrange the ownership structure of firms and derive a measure of integrated ownership. Flath (1992) took one step further offering a way to find indirect shareholding. Then Baldone, Brioschi, and Paleari (1997), proposed new refinements in the measurement of integrated ownership for cross share holding groups. The studies collected in Barca and Bech (2001) of the European Corporate Governance Network (ECGN) applied Baldone's matrix formula to analyze corporate structure and voting blocks in European conglomerates in seven countries. More recently, Chapelle and Szafarz (2002) and Chapelle (2004) refine this methodology by including the 51% majority rule to exert firm control under the assumption of one share-one-vote legislation.

This methodology defines *cash flow rights* as *direct ownership* and *voting rights* as *integrated ownership*. Cash flow implies, under the portfolio view that an investor gets the return of his investments through the direct stakes he owns. If a shareholder *i* has a 25% stake in firm B and firm A, but company B owns 25% of firm A, then the shareholder *i* is entitled to 25% of both firm A and B's earnings. If firm B increases its current profits by its investments in firm A, shareholder *i* would get greater returns through firm B's dividend payments and not through firm A. In contrast, *voting rights* includes the indirect ownership dimension. In this case shareholder *i* exerts control over firm A. Under the one-share-one-vote rule he has 25% from his direct investment plus 1/16 of additional votes through firm B.

The starting point in the methodology is the definition of a $(\mathbf{N} \times \mathbf{N})$ matrix $\mathbf{A} = \begin{bmatrix} a_{ij} \end{bmatrix}$ of direct shareholdings, where a_{ij} is the observed share of stocks of firm i in firm j. Three properties of the elements of $\mathbf{A}$ in order to be used under input-output hypothesis are:

$$0 \leq a_{ij} \leq 1 \qquad (1)$$

$$a_{ij} = 0 \quad \text{if} \quad i = j \qquad (2)$$

Where

$$i = 1, \ldots, N$$
$$j = 1, \ldots, N$$

and

$$\sum_{i=1}^{N} a_{ij} \leq 1 \qquad (3)$$

This model determines the *integrated* (direct + indirect) *ownership* on the basis that all firms are affiliated within a business group. We followed the definition of integrated ownership as the total value of equities recruited by a firm, which is unknown, but stems from its direct and indirect ownership on other firms of the business group. [12] The first step in implementing this definition is the solution for the integrated ownership matrix $\mathbf{Y} = [\, y_{ij} \,]$:

$$y_i = a_{ij} + \sum a_{ij} y_i \qquad (4)$$

where the first term in the right side of equation (4) represents the direct equity held by firm i in firm $j - a_{ij}$, and the second one represents the *indirect equity* that firm i holds into firm j. The solution for $\mathbf{Y}$ and its presentation in matrix notation is:

$$\mathbf{Y} = \mathbf{A} + \mathbf{A}\mathbf{Y} \qquad \text{or} \qquad \mathbf{Y} = \mathbf{A}(\mathbf{I} - \mathbf{A})^{-1} \qquad (5)$$

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[12] For more details regarding this formulation, see Ellerman, D (1991); Brioschi, Buzzachi, and Colombo (1989) and Flath, D (1992).

Equation (5) is useful to compute integrated ownership for hierarchical business groups. For the case of cross-share holdings Baldone et al. (1997) defined integrated ownership as *"(...) the sum of percentage shares of total equity shareholder i holds in firm j directly, through cross-shareholdings and indirectly."* This definition in matrix algebra is equivalent to

$$\mathbf{Y} = \underbrace{\mathbf{A}}_{\text{Direct Ownership}} + \underbrace{\mathbf{YA}}_{\text{Indirect Ownership}} - \underbrace{\mathbf{D(Y)A}}_{\text{Reciprocal or cross-shareholding ownership}} \qquad (6)$$

where: $\mathbf{D(Y)}$ stands for the diagonal elements of $\mathbf{Y}$ and $\mathbf{I}$ is an $(N \times N)$ identity matrix. The solution for $\mathbf{Y}$ in equation (6) is[13]:

$$\mathbf{Y} = \left(\mathbf{D(I \text{-} A)^{\text{-}1}}\right)^{\text{-}1} \mathbf{A(I \text{-} A)^{\text{-}1}} \qquad (7)$$

Thus, we used the formula in (7) to estimate integrated ownership for all affiliated firms in our sample and followed such an approach because Colombian corporate data resembles the European group structures with high concentration in direct ownership and voting levels. Lastly, we computed the firm's direct ownership through concentration ratios (CR) for the largest shareholder (CR_1), the second largest shareholders (CR_2), and so on as desired. The concentration ratio at *r* level for a total of *N* individuals is given by

$$CR_r = \frac{\sum_{i=1}^{i=r} a_{ij}}{\sum_{i=1}^{N} a_{ij}} \qquad (8)$$

An Example

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[13] Appendix 1 shows details on the solution.

In order to gain understanding of how the matrix approach works in contrast to the manually adding procedure in counting total voting rights (integrated ownership) of Laporta et al. (1999), consider the inverse pyramid business group depicted in Figure 2. If one asks, who is the ultimate controller of F5 in the sense of 20 percent we have two possible candidates: F1 and F4. The first has 41% votes in F5 and is equivalent to its direct stakes in such a firm. The second has 40% of the votes in F5 given by its direct stakes plus 4% through firm F4, plus 1.25% from its investments in F2, who in turns owns 45% of F4, adding a total of 45.12% of voting rights. Hence, F3 is the ultimate controller.

Figure 2
Integrated ownership - Pyramid structure group example
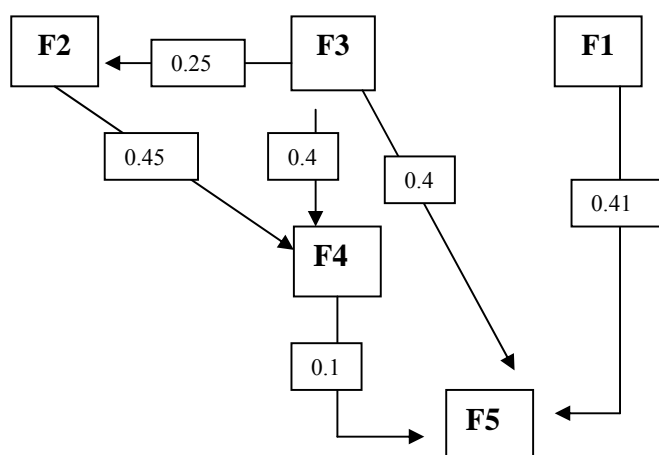
Now consider **Table 2** that summarizes the results of Eq. (7). Matrix **A** is the direct equity shares of each company within the pyramid equivalent to the percentage shares given in **Figure 2**. Matrix **Y** is the integrated ownership matrix of the group. The reading of the results is straightforward. Ultimate shareholder controller of F5 is F3 with 45.12%. In addition, the table says that F3 is the ultimate controller of F4 with 51% of votes and F2 has 4.5% of voting rights in F5 despite the fact that it does not have any direct stakes in that firm. The above exercise tells that ultimate controllers are "*in practice physical or legal persons that have no known shareholders*" [Becht, (1997)] or the last ownership layer in which information is available, which is the case of F3 or F1 in the example. The implication is consistent and matches with La Porta et al. (1999)'s ultimate owner definition based on the 20 percent

threshold. Clearly, from the computational point of view the matrix set up is more efficient and useful specially when there are complex property relations such as cross share holdings[14].

Table 2
Pyramid Business Group Example
Integrated Ownership Estimation

| | Matrix A | | | | |
	F1	F2	F3	F4	F5
F1	0	0	0	0	0.41
F2	0	0	0	0.45	0
F3	0	0.25	0	0.40	0.40
F4	0	0	0	0	0.10
F5	0	0	0	0	0
sum	0	0.25	0	0.85	0.91

| | Matrix Y | | | | |
	F1	F2	F3	F4	F5
F1	0	0	0	0	0.410
F2	0	0	0	0.450	0.045
F3	0	**0.250**	0	**0.513**	**0.451**
F4	0	0	0	0	0.100
F5	0	0	0	0	0

Notes: Matrix A = direct ownership stakes, Matrix Y = integrated ownership (direct + indirect).

4.   Ownership Statistics

A well known fact in Colombia is that corporate ownership and control is highly concentrated. This fact has been tied to the formation of conglomerates and business groups from the 1950s to late 1970s where vertical control was the incentive to control productive chains from upstream to downstream industries. Most of them started as family businesses and then became corporate groups with strategic investments in their core business. In fact, business groups in Colombia are specialized and differentiated entities in which the holding

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[14] There is a common critique for both methodologies in the way of counting the voting rights, since might be double counting in cross share holdings, and thus integrate ownership statistics might overestimate the concentration of voting rights when the ultimate owner can not be traced fully such as a holding. An interesting refinement of this methodology is in system where there are not deviations from one share one vote rule. Applying the simple majority rule a shareholder with direct shares above 50% will exert company's total control. For details, see Becht (1997) and Chapelle (2004).

control is centered-around key companies. Shareholders' information in listed companies improved substantially since 1995 when the Superintendence of Securities issued Resolution 400 regulates corporate governance issues for all listed companies whose stocks and securities are publicly traded. It mandates the disclosure of up to the top 20 company's shareholder as well as the company's shares in subsidiary firms as explained in the previous section.[15]

Corporate control concentration reduces the agency problem between stockholders and companies' management and might have positive effects on firm valuation, profitability and efficiency. On the other hand, the risk of expropriation of minority shareholders increases. This paper does not address those issues, which are analyzed and econometrically tested in Gutierrez, Pombo and Taborda (2005b). Simply we ask if the distribution of ownership concentration has recently changed, and by this means we provide new evidence on the structure and patterns of equity concentration.

Table 3 summarizes the main results of the measurements of direct ownership stakes for the total sample and listing status. There are four findings worth mentioning. First, our sample coverage in terms of shareholders identification is high. The information recorded at the RNVIs of the largest 20 shareholders discloses around 80% of firms' direct sakes. That disclosure rate increases among the currently listed corporations from a 0.74 (0.82) for the 1996-1999 period to 0.78 (0.85) mean (median) during the 2000-2002 period. Second, equity concentration is high as expected. The largest stake has risen across the two periods. The median increased in 7 percentage points for currently listed corporations, while for the de-listed corporations that change was 11 percentage points. The overall effect on the total sample mean (median) was an increase of 5 percent moving from 0.36 (0.30) to 0.41 (0.36) between periods. Equity concentration rises substantially when one analyzes the share of the four-largest direct stakes. In fact, the concentration rate doubles along the ownership

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[15] Resolution 400 has three core elements. First, all listed companies must determine the commercial and legal status of the company. Second, they have to be listed at the National Security Registry. The main point of this obligation is that each listed company must provide detailed information on its current statutes, the management enrolment list, the relationship of any of employees with traders or companies listed at the Registry, the way the social capital of the company is composed of, and the internal rules and regulations of the company. The same resolution also mandates that all stocks registered at the RNVI and not traded during two consecutive years will be cancelled by the Superintendence unless there be at least five hundred shareholders. Third, companies listed in the public stock exchange must have their records updated, and to provide audited annual information of their financial statements 30 days after being approved by the directory of the company. Additionally, each company listed at the Registry has to send quarterly information on the income statements and balance sheets 45 days after the end of each quarter although this does not need to be audited.

distribution and increases across periods. The mean (median) moved from 0.60 (0.60) to 0.65 (0.69) for the listed firms and from 0.74 (0.79) to 0.77 (0.84) for de-listed corporations.

Table 3
Ownership Statistics in Colombian Corporations
Number of firms, sample coverage, and direct ownership stakes by listing status

Status/indicator/statistic						
	1996-1999	**2000-2002**	**1996-1999**	**2000-2002**	**1996-1999**	**2000-2002**
LISTED CORPORATIONS			DE-LISTED CORPORATIONS		TOTAL SAMPLE	
Number of firms	79	92	69	41	148	133
Share top-20 shareholders						
Mean	0.7439	0.7851	0.8528	0.8528	0.7941	0.8068
Median	0.8237	0.8584	0.9272	0.9452	0.8625	0.8949
75th percentile	0.9414	0.9740	0.9877	0.9965	0.9700	0.9820
25th percentile	0.6027	0.6652	0.8002	0.8199	0.6761	0.6939
Standard deviation	0.2355	0.2282	0.1859	0.2230	0.2187	0.2283
Interquantile range	0.3387	0.3088	0.1875	0.1766	0.2939	0.2881
Share largerst shareholder: CR1						
Mean	0.3003	0.3699	0.4258	0.4906	0.3552	0.4087
Median	0.2549	0.3215	0.3693	0.4745	0.3041	0.3575
75th percentile	0.4133	0.4954	0.6012	0.6623	0.4934	0.5470
25th percentile	0.1432	0.1808	0.2242	0.2974	0.1856	0.2070
Standard deviation	0.1981	0.2376	0.2373	0.2558	0.2246	0.2511
Interquantile range	0.2701	0.3146	0.2701	0.3146	0.3078	0.3400
Share top-four shareholders: CR4						
Mean	0.6000	0.6528	0.7377	0.7676	0.6609	0.6890
Median	0.6056	0.6878	0.7929	0.8440	0.6762	0.7284
75th percentile	0.7984	0.8726	0.9372	0.9806	0.8721	0.9187
25th percentile	0.4056	0.4797	0.5769	0.6250	0.5018	0.5106
Standard deviation	0.2425	0.2543	0.2242	0.2418	0.2428	0.2559
Interquantile range	0.3928	0.3930	0.3604	0.3556	0.3704	0.4081

Source: Own estimations based on new assembled dataset from Superintendence of Securities' *National Equity Registry Forms* (RNVIs).
Notes: direct stakes are equal to direct voting rights under one share one vote rule. Averages per period : 1996-1999 and 2000-2002.

The above numbers suggest that effectively there was a change in the distribution of ownership concentration at firm's first stake layer. This increases by turn, the *direct voting rights* of the largest stockholders. Firm's absolute control is upheld within a firm's largest four stakes. **Figures 3** and **4** depict and contrast the change in ownership concentration distribution at CR4 ratio between the years 1996 and 2002, which are the beginning and end dates in the study sample. The histograms show that the CR4 distribution became left skewed meaning

higher concentration within firms. In 1996 there were two peaks in the frequency distribution at the 0.55-0.65 and 0.9-1.0 bins. For both cases around 22% of the firms in the sample, the four-largest shareholders had on average control of 60 and 95 percent of the direct voting rights. This is accurate since computations only include outstanding shares, dropping all preferred shares which have no voting rights. In addition, corporate law in Colombia according to the Commercial Code forbids dual shares and any other kind of legal deviations from one-share one vote rule. In 2002 the four-largest stakes had direct voting rights above 90% in 35% of the firms in the sample.

Breaking those measurements by economic sector [**Table 4**], one finds similar patterns for ownership structure, where the mean (median) of the top-four direct stakes ownership is above 51%, excepting those firms in agriculture and livestock activities where the mean (median) is around 0.35 (0.35) for the entire period. The most concentrated corporations are located in manufacturing where the mean (median) increased from 0.68 (0.69) to 0.73 (0.79), wholesale and retail trade whose mean (median) remained constant around 0.70 (0.73) and, health and personal services whose mean (median) slightly decreased from 0.85 (0.92) to 0.83 (0.84) between periods.[16]

A natural question concerning the above results is if ownership or *direct voting* blocks statistics are very concentrated in Colombia. The answer is *no* if one contrasts the C1 to C4 ratios with contemporaneous results in continental Europe for non-financial listed companies. For the largest stockholder, Colombia is below around 20% that the average observed in six out of the seven European countries in Becht's study. Numbers start catching up at CR3 or CR4 levels. For the largest top-four stockholders the average sum of the direct stakes is 66% while Colombia is 65%. Thus, Colombia's data resembles the European case and so must the structures of the larger business groups. This numbers are very different for USA and the UK. The largest block holder in the UK has around 15% while for the sample of listed corporations

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[16] One point needs further explanation regarding the health care companies in our sample. The health system in Colombia has two types of private health care provides. One is the so called Heath Promoting Companies, which belong to the mandatory health program. Their prices are regulated and received cross subsidies from the social security system. Their main source of income is the social security deductibles from all people with formal labor contract in the country. The other is the pre-paid medicine companies similar to the HMCO in the US which work through direct contracts. Those contracts are not price regulated. The main regulation that these companies face is quality service regulation that is similar to any industry that has to comply with safe product regulation. The companies in our sample are pre-paid medicine companies and private clinics.

Figure 3
Histogram of the top-four shareholders (CR4) – 1996
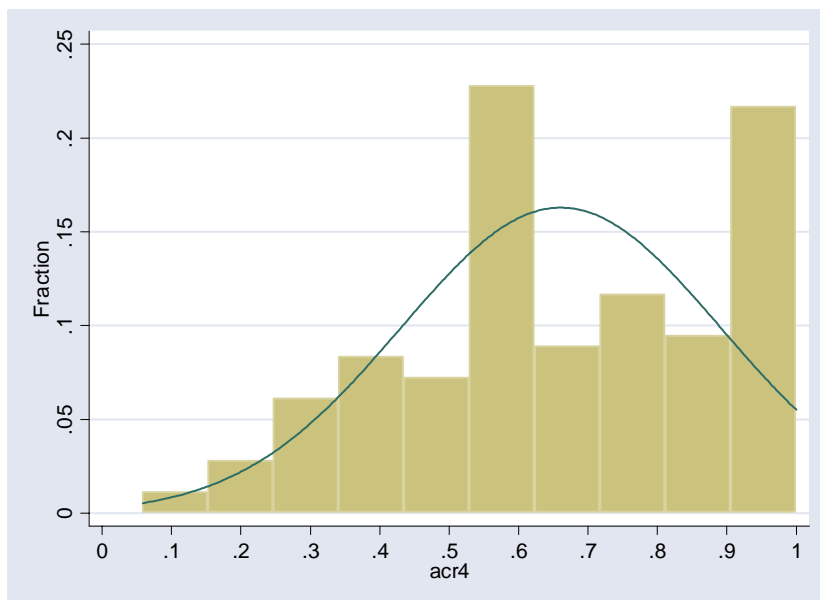
Source: Own estimations based on new assembled dataset from Superintendence of Securities' *National Equity Registry Forms* (RNVIs).

Figure 4
Histogram of the top-four shareholders (CR4) – 2002
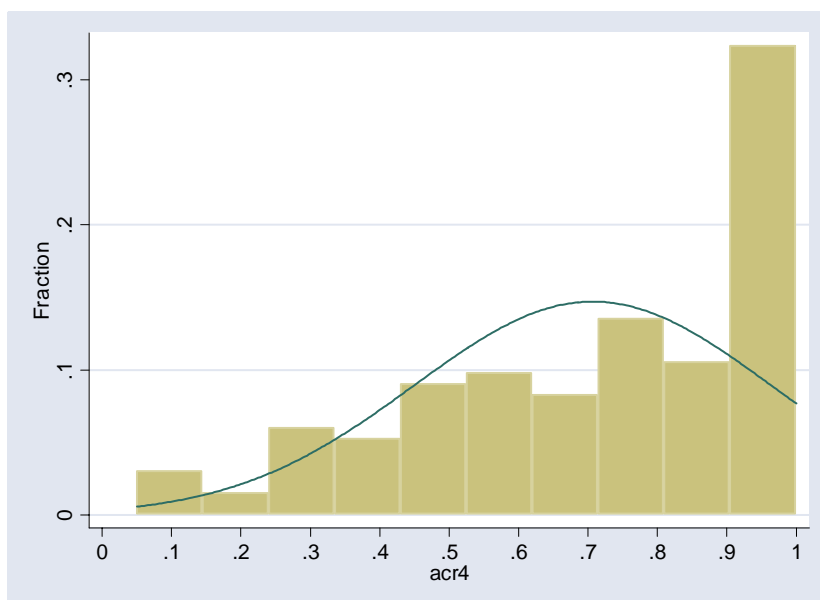
Source: Own estimations based on new assembled dataset from Superintendence of Securities' *National Equity Registry Forms* (RNVIs).

Table 4

Ownership Statistics in Colombian Corporations by industry ISIC group
Indicator/Industry/Statistic

	1996-1999	2000-2002	1996-1999	2000-2002	1996-1999	2000-2002
	SHARE TOP 20 SHAREHOLDERS		SHARE LARGEST SHAREHOLDER: CR1		SHARE TOP FOUR SHAREHOLDERS: CR4	
1 Agriculture, Hunting, Forestry and Fishing						
N	6	5				
mean	0.3938	0.4102	0.1652	0.1934	0.3448	0.3672
median	0.4784	0.4962	0.1302	0.1629	0.3078	0.4073
2 Mining and Quarrying						
N	3	2				
mean	0.8373	0.8113	0.3157	0.3642	0.6474	0.6301
median	0.8930	0.8113	0.3332	0.3642	0.6708	0.6301
3 Manufacturing						
N	74	72				
mean	0.8087	0.8404	0.3740	0.4581	0.6791	0.7358
median	0.8831	0.9295	0.3335	0.4317	0.6922	0.7876
5 Construction						
N	6	4				
mean	0.7546	0.7163	0.2276	0.2221	0.5797	0.5712
median	0.8294	0.8380	0.2191	0.2342	0.5809	0.5838
6 Wholesale, Retail Trade, Restaurants, Lodging Services						
N	18	11				
mean	0.8199	0.8045	0.3860	0.3935	0.7054	0.6947
median	0.8601	0.8389	0.3267	0.3465	0.7456	0.7273
7 Transport, Storage and Communication						
N	12	11				
mean	0.8880	0.8745	0.3078	0.3714	0.7045	0.7208
median	0.9502	0.9590	0.2777	0.3485	0.7143	0.7915
8 Financing, Insurance, Real State						
N	20	19				
mean	0.7482	0.7282	0.3140	0.2989	0.6015	0.5597
median	0.7786	0.7374	0.2577	0.2244	0.5813	0.5067
9 Health and Personal Sevices						
N	7	8				
mean	0.9115	0.9147	0.5859	0.5479	0.8489	0.8262
median	0.9756	0.9511	0.5455	0.5013	0.9192	0.8417
10 Other non-classified business activities						
N	3	1				
mean	0.7006	0.6873	0.2580	0.2191	0.4699	0.4365
median	0.6807	0.6873	0.2123	0.2191	0.4440	0.4365

Source: Own estimations based on new assembled dataset from Superintendence of Securities' *National Equity Registry Forms* (RNVIs).

Table 5
Average direct ownership (*direct voting rights*) in
Non-Financial listed firms for selected countries

Country	year	N	CR1	CR2	CR3	CR4
Austria	1996	50	54.1	61.9	64.5	64.7
Belgium	1995	140	55.9	66.2	70.7	71.5
France*	1997	228	51.1	72.5	82.6	83.7
Germany**	1996	372	57.0	59.9	60.5	61.0
Italy	1996	214	52.3	60.0	63.5	64.4
Spain	1995	193	32.1	40.1	47.1	50.0
UK	1992	207	14.4	21.7	27.7	33.0
USA-NYSE	1996	1309	8.5	12.2	14.0	14.2
Colombia	*1996*	*180*	*37.14*	*50.27*	*58.65*	*65.71*
Average Continental Europe			50.42	60.10	64.81	65.86
Colombia/Avg Continental Europe			0.7366	0.8365	0.9050	0.9977

Sources: Becht (1997), Barca and Becht (2001), and Own estimations based on new assembled dataset from Superintendence of Equities' *National Equity Registry Forms* (RNVIs).
Notes: France*: only holding companies; Germany**: Only manufacturing firms;
N: Number of firms; CR1: share of the largest shareholder; CR2: share top-two shareholders; CR3: share top-three stockholders; CR4: share top-four stockholders.

at the NYSE the figure is around 8.5%. The next section analyzes the structure of the three largest, most traditional and important real sector business groups in the country.

5.   Examples of Ownership Structures

Business group structures in Colombia are complex. There is no restriction for cross-shareholder structures and regulations regarding mergers, takeovers and minority shareholder protection are in less develop stages, with low enforcement levels in contrast with the anti-takeover legislation in the United States and the United Kingdom. On this particular, merged firms must file for permission at the Superintendence of Industry who establishes if there is a risk for market dominant position. However, during the last four years some advances in

shareholder protection have taken place. Resolutions 0932, 0072 and 0275 of 2001 of the Superintendence of Securities sought the strengthening of the investor protection ruling, and to lead domestic legislation toward international standards[17]. In addition, it is important to highlight that since 1923 commercial banks are forbidden to hold any outstanding shares in any real sector corporation, which is not the case of more advanced capital markets such as Germany and Japan.

The three larger and best known non-financial business groups in Colombia are the so-called *Sindicato Antioqueño*, the *Santodomingo group* and the *Ardila group*. These three holdings count for 59 out of 116 affiliated corporations of our sample, and represent more than 50% of sales or fixed assets for the entire sample of 233 firms (affiliated plus non-affiliated firms). Description follows.

Sindicato Antoqueño

The *Sindicato Antioqueño* refers to a business group formed by firms in several industries as well as financial companies. Its core businesses are cement, processed food, roasted coffee, iron, tobacco, construction, textiles, investment funds, trust funds, investment banks (*corporaciones financieras*) and insurance firms. The number of companies affiliated to the group is around 100 between listed and non-listed firms. Its structure is the result of several alliances and web of firms that make it a pure cross share holding. Its name comes from the province in which its key companies are based, around the city of Medellin, which has the second largest industrial district in Colombia and the largest textile and apparel industries within the Andean countries. Some of the companies have more that 80 years of being founded. For instance, *Industrias Alimenticias Noel* was founded in 1916, *Nacional de*

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[17] The core element of Resolution 0932 is that companies that have securities registered at the RNVI must provide to the Superintence "*information regarding any relevant fact or extraordinary or significant operation or act relative to the issuer, its business, the registered securities and the supply of those securities to the market*". Among them are decisions reached by the board of directors, changes in the conditions of the issuer, calls for shareholder's General Assembly, changes in the figures contained in the financial statements, distribution of dividends, change of auditor, merger or acquisition of business lines in the same industry. Resolution 0072 sets the conditions for companies that want the registration of their stocks to be cancelled from the stock exchanges. It states that a company in delisting from the stock exchange needs a simple majority of the outstanding shares votes in favor of the cancellation. Resolution 0275 incentive for the voluntary issue of a code of good corporate governance practices in all companies that want their issued and traded securities to be acquired by Colombian pension funds.

Chocolates and *Fabricato S.A*, the largest textile mill in the country, were both founded in 1920, and *Compañía de Cementos Argos* began commercial operations in 1935. Today the heart of the conglomerate is within the cement industry and is centered around *Cementos Argos*, which became a holding company in 2000 when it stopped operations as a cement mill. *Argos* has direct investments across the largest cement companies in the country and integrates all the productive chain: stone quarrying, clay, and sand mining, manufacture of cement, cement mixing, reinforced concrete, and distribution. Argos's group has one-half of market share and exports around 2.5 million tons per year.

Figure 5 depicts the two-way direct ownership stakes in 2002 of *Argos* Company at its first and second layers. This diagram only offers a partial view of the whole *Antioqueño* group leaving aside the textile, food processing, tobacco, metal-ore mining, paper and wood products, construction, and chemical products chains. Several features from that diagram are worth highlighting. First, the share of the top-four shareholders stakes adds to 35%, which is almost one half of the national average. These shareholders with their direct ownership shares are: *Fideicomiso Citi Trust Suramericana* (14.5%), *Suramericana de Inversiones* (5.5%), *Inversiones Reacol* (5.7%) and *Nacional de Chocolates (3.7%)*. These numbers suggest that *Argos* is one of the few cases in Colombia of a widely held company in the 20 percent sense.

Second, despite the above if one looks the other way around *Argos* exerts control through its direct investment in four cement companies (direct stakes): *Cementos Paz del Río (21.4%),, Cementos del Valle (28.2%), Cementos del Caribe (65.3%), Cementos del Cairo* (95%) and in other four cement companies through integrated ownership. For instance, *Cementos del Caribe* owns 72% of *Colclinker*, 30.2% of *Cementos del Valle*, 71.2% of *Cales y Cementos de Toluviejo*, and 52.4% of *Carbones Caribe*. At the same time, *Cementos del Valle* owns 43.3% of *Cementos Rio Claro*, where *Cementos del Cairo* has also a 30% stake. Lastly, *Cementos del Cairo* owns 53.6% of *Cementos Nare* where *Cementos del Caribe* has a direct stake of 26.8%. Hence, the ultimate controller of all the above companies is *Argos*. The above cross share structure generates this type of interlocking behavior. Similar relations are found inside the group in the other core businesses. Third, there are three investment funds, one insurance company and one investment-bank that have a key role in financing the affiliated companies and locking the holding control, since they have direct stakes in almost

Figure 5 – Cementos Argos' web of direct ownership stakes - 2002

Source: Superintendence of Securities' *National Equity Registry Forms* (RNVIs).

all firms. They are *Suramericana de Inversiones*, *Inversiones Reacol*, *Portafolio de Inversiones Suramericana, Compañía Suramericana de Seguros*, and *Corporación Financiera Suramericana* [Corfinsura]. They form a pure web of direct and integrated ownership relations.

Santo Domingo Group

The Santo Domingo group is the second largest business group in the country. Its core business started within the beer industry. *Bavaria S.A* has been the leading beer company and brand in the country and is one of the 10 largest firms in Colombia by size of sales and assets. It is also one of the largest beer companies in Latin America. *Bavaria* shares have been publicly traded since 1930s at the former Bogotá stock exchange. German immigrant Leo Kopp set up the brewery industry in Bogotá in 1889. During the 1940s, as a result of World War II, the Government expropriated all equity shares held by German or Italian citizens in Colombian firms. By 1967 the *Santodomingo* family took control of the company through their former brewery of Barranquilla[18].

Despite its strong and historical presence in Colombian economic activities, the Santo Domingo Group had only 17 listed firms in the 1996-2002 period. **Figures 6a** and **6b** shows the holding structure for the main companies, including some unlisted ones. This group has a pyramidal structure, although there are cross shares among some firms. The pyramid has two main branches. One is made of the beer companies headed by *Bavaria* who is the ultimate controller with direct stakes in *Malterias de Colombia* (76%), and *Cerveceria Aguila* (50%) and *Sofasa* (51%) the auto assembly producer. Through the first one it controls *Conalvidrios* which is the supplier of glass bottles for the beer industry, and by means of these former two companies it exerts absolute control over *Productora de Jugos* and *Inversiones Aconcagua,* a holding investment fund. The beer companies do not have foreign investors among the largest shareholders although some foreign-based holdings appear as small stockholders.   *Valores Bavaria,* which is the group's trust fund, heads the other holding branch. The largest and most important companies on this side are *Avianca*, the largest passenger airline, *Caracol Radio* and

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[18] For more details on the History of Colombia's leading enterprises and the development of the manufacturing industry see: Davila (2003), Mayor-Mora A., (1989), Ocampo J. A (1991, 1994), Echavarria (2000), and Pombo (2002).

Figure 6 – Santo Domingo Group - 1998
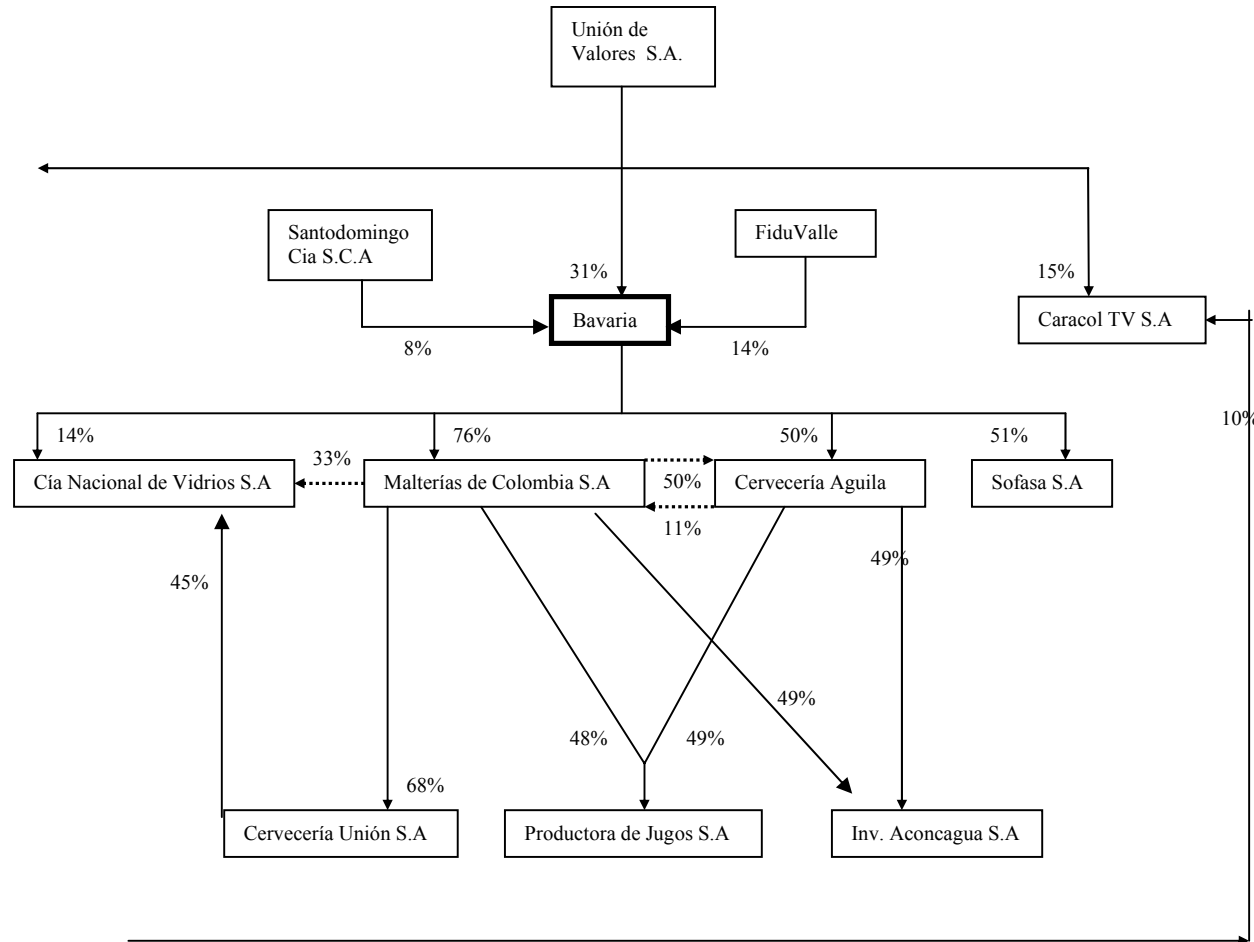
Figure 6 – Santo Domingo Group – 1998 (Cont.)

31%

Valores Bavaria S.A

48%

Inv. Fenicia   32%   47%

55%   10%

Redes de Colombia   Inv. Bavaria

38%   11%

40%   9%

21%   35%   26%   15%   12%   36%   11%   17%   17%   13%   9%

Caracol Radio S.A

Inmobiliaria Aguila S.A

Inversiones Refonal S.A

Auditamos Consulting ltda.

13%

Inversiones Ser S.A

Reforestadora de la Costa S.A

Avianca S.A   20%

Grandes Superficies de Cbia S.A

Cia Colombiana de Inv. Colseguros S.A

Celumóvil S.A

23%   16%   11%

Petroleum Aviation and Services S.A

16%   48%
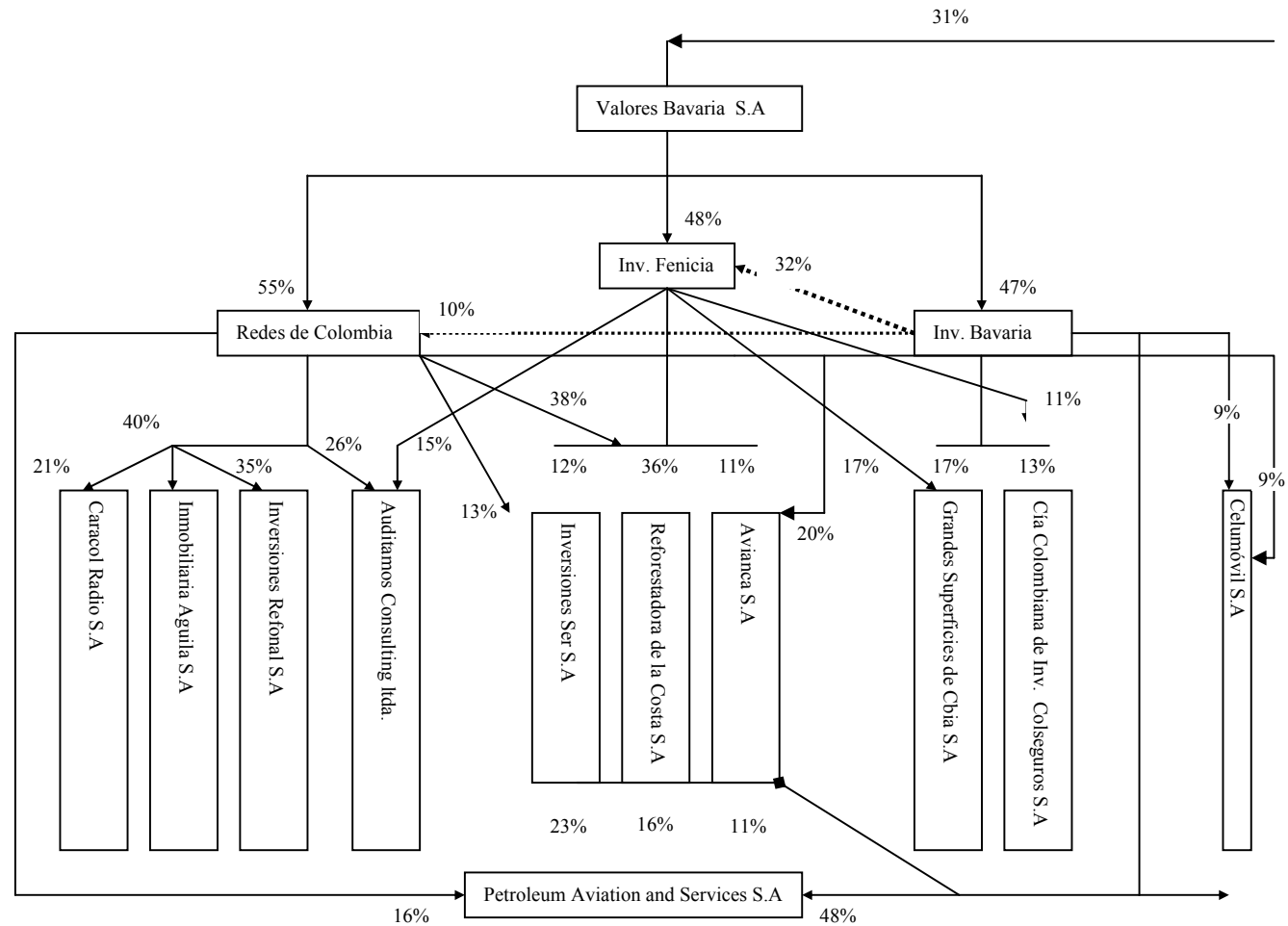
Source: Superintendence of Securities' *National Equity Registry Forms* (RNVIs)
Notes: Celumovil's stakes refer to 1999**.**

Caracol TV a media communications companies, *Colseguros* the insurance branch of the group, , *Polipropileno del Caribe,* a manufacturer of petrochemicals and synthetic resins, and *Grandes Superficies de Colombia* (Carrefour) the second largest retail trade chain in the country, and *Celumovil* (Bell-South Colombia) the cellular phone company.

All the above companies have important foreign investment stakes. In fact, the Santo Domingo group has a very small minority stake in the insurance company *Colseguros*, where 93.6% of the company is currently owned by a foreign investor. *Polipropileno del Caribe* in turn is basically foreign-owned (50%). *Sofasa* and *Bell-South Colombia* are two companies in which Santo Domingo has some presence. In the first one, it has a majority stake but this is also a strategic alliance Renault and Toyota must supply the complete body of the cars. In *Celumovil* (Bell-South Colombia), again foreign investors have the majority and the group by means of two holding funds *Inversiones Bavaria and Union de Valores* acts as a strategic partner. Finally, *Union de Valores* is at the top of the group with direct stakes in *Bavaria* (30%) and in *Valores Bavaria* (30%). Therefore, under the 20% sense this holding fund is the ultimate controller of the group. All in all, the Santo Domingo group shares most of the characteristics present in the *Sindicato Antioqueño* except the fact that there is no substantial cross-shareholding. In some cases, if foreign capital (or expertise) is needed, then strategic alliances are implemented[19].

Ardila- Group

The *Ardila group* is the third main conglomerate and dominates the soft-drink industry. Its leading company is *Postobon S.A* founded in 1905 in Medellín by Gabriel Posada and Valerio Tobón, as *Gaseosas Posada & Tobón*. Thanks to the rapid market growth the company signed a distribution franchise with Coca-Cola in 1927 that lasted until 1937 when the multinational decided to build its own plants in Colombia. One small shareholder of *Postobon* was *Gaseosas Lux*, owned by *Carlos Ardila*. Lux was a regional soft drink firm that gradually leveraged its stakes to take control over *Postobon* in 1968. Also in the sixties the company got the franchise for Pepsi Co. Despite its growing importance and long history in Colombian business activity

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[19] The group undertook a restructuring process since 2002. The most important transaction within the group's enterprises was the merger of Avianca with the second domestic largest air carrier (ACES), and its following sale of 75% of company's shares to the Synergy Group of Brazil in December of 2004.

during the last four decades, the *Ardila* group surprisingly has had until year 2000 four listed companies: *Compañía Colombiana de Tejidos (COLTEJER), RCN TV, PELDAR S.A and Ingenio del Cauca S.A;* none of them are soft-drink companies and the last two got de-listed during the late 1990s[20].

Figure 7 describes the holding structure for the year 2000. It includes, besides the listed ones, the holding's main unlisted companies. The diagram has two main bodies that follow the beverage industry chain: i) the soft drink companies labeled as "Gaseosas" and ii) the soft drink's upstream industries. They are to the left and to the right of the group's leading enterprises: *Gaseosas Postobon* and *Gaseosas Colombianas.* The figure shows that the two ultimate controllers for these two set of companies are two holding investment funds: *Servicios e Inversiones S.A (Servinsa)* and *Inversiones Gamesa S.A*. The first one has direct stakes in Postobon (45%), *Gaseosas Colombianas* (45%), while the second one owns a 46% stakes in *Postobon* and 39% in *Gaseosas Colombianas.* Hence, these two funds exert absolute control over the group's two largest soft drink companies. At the same time both funds have direct stakes of 48% in eight medium-size and regional soft drink companies, and 23% in other one.

The group has vertical control in the production of key inputs. On one side, it has direct investments in three large sugar refining mills. The holding funds together own 53% of *Ingenio del Cauca,* which owns 45% *of Ingenio Providencia* which in turn owns 9% of *Ingenio Risaralda*, where *Ingenio del Cauca* has a 20% stake. *Providencia* is the second main shareholder of *Sucromiles,* a company that manufactures citric acid. On the other side, the holding funds control the manufacturer of bottle lids [*Tapas la Libertad*] with a stake of 89%. The group also has control over its distribution network. The truck fleet is gathered in *Empresa de Distribución Industriales S.A* which is controlled by *Servisa* and *Besmit* S.A with 88% stake. This is another holding company with direct and representative investments across the group beverage firms. To square the circle, the group has stakes in PELDAR S.A, the glass manufacturer, in which there is a representative foreign investment share[21].

The group has large investments in several non-core businesses. The most representative are textiles and the media and communication industries. The *Ardila* group took control over

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[20] *Gaseosas Postobón S.A* got listed in 2004 and registered at the Superintence of Securities.
[21] PELDAR was founded in 1939 and since the 1940s got over the control of Owens Illinois Glass Co. Today the largest shareholders are Owens Brockway Glass Inc, and Fiducomercio which is a Bank trust fund.

Figure 7 – The Ardila Group – 2000

Servinsa Oal S.A			Inversiones Gamesa S.A

48% 48% 42%   21%   42%   47%   44%   48% 48%

48% 48% 23%   48% 48%

Emp. de Distrib. Industriles S.A
Gaseosas Nariño S.A
Gaseosas Chiquinquira S.A
Gaseosas del Lalmo S.A
Gaseosas Lux S.A
Gaseosas Tolima S.A
Ingenio del Cauca S.A

Tapas La Libertad S.A

RCN S.A

Gaseosas Mariquita S.A
Gaseosas de Cordoba S.A
Gaseosas Boyaca S.A
Gaseosas de Huila S.A

32%

Gaseosas Lux

39%   46%

Gaseosas Colombianas S.A

Gaseosas Postobon S.A

45%   45%

11%

9%

40%

45%

20%   20%

38%   14%

Ingenio Providencia S.A

Sociedad de Comercializacion Internacional Coltejer S.A

RCN TV S.A

11%

22%   9%   20%

Sucromiles S.A

Ingenio Risaralda S.A

48%

Coltejer S.A

99%

Besmist Ltda   4.4%   PELDAR S.A

Textiles Rionegro y Compania Ltda. S.A

18%   20%

Owens Glass Inc.

Fiducomercio S.A

Coltejer S.A in 1978. This firm started operations in 1909 and was, along with *Fabricato S.A* the largest textile mill in the country and previously affiliated as well to the *Sindicato Antioqueño* group. Today more than 15 affiliated companies are within the top 20 shareholders with an aggregate stake of 80%. Regarding the media companies these are RCN radio and RCN TV, where the holding investment funds *Gamesa* and *Servinsa* are the ultimate controllers. Both funds have a 53% stake in *RCN Radio*, which in turn owns 38% of *RCN TV* and along with the 14% stake of *Gamesa investment* they exert absolute control over that firm.

Summarizing, the above analysis of the largest business groups in Colombia showed the existence of a mixture of ownership structures, high rates of direct stakes concentration, and full specialization in each group core business. There are no intra-group investments. If there is some, it is as a minority stockholder such as the case of *Coltejer* where some companies affiliated to the *Sindicato* have around 10% stake in the company. In addition, entrepreneurial history in Colombia has shown no successful undertakings when one conglomerate seeks entry and competes for a rival's core-markets. Perhaps the most representative and recent example was when the Ardila group built a new brewery in 1994. Six years later the company was acquired by Bavaria, because of its cash flow deficits and low plant low capacity utilization rate.

6.   The separation of ownership and control

The agency theory suggested for Berle and Means (1932)'s American-type Corporation between insiders and shareholders posed the question of firm control as a central issue to study firm performance and corporate valuation. La Porta et al (1999)'s study of corporate ownership around the world and following papers highlight as a consistent fact that ownership structures are complex where ultimate controllers leverage their voting through cross shareholding and pyramidal relations. When conglomerates become highly concentrated reduces the agency problem but creates new ones. The Colombian main holdings resemble European holding structures as was shown by contrasting the ownership statistics of the larger voting blocks within listed corporations. Ownership matters in both ways that is, being an anonymous shareholder of a big corporation facing strong management structures or being a

strong owner that manages the firm. The latter poses new questions such as the incentives to expropriate minorities, or the rules of the game among the largest voting blocks when none of them has an absolute control. Clearly rent-seeking behavior is part of the theory but there is a need for further modeling of the agency problem across largest ownership blocks within conglomerates with complex two-way ownership relations. The measurement of voting rights in this study relies on the concept of a shareholder's *integrated ownership* (direct + indirect), while cash flow is associated with *direct ownership*. In terms of control the first one provides the *indirect votes* and the latter gives *direct votes*. Thus, the separation between ownership and control is given by the *direct* to *integrated* ownership ratio and must be less than one by construction.

Table 6 displays the results regarding the measurements of the separation ratio for the larger shareholder, who is in most cases an ultimate controller under the 20 percent cutoff level. We considered two time spans, before and after 2000. Several facts are visible from that table. First, de-listed corporations are more concentrated than listed ones. The mean (median) of the largest controller shareholder is 0.42 (0.37) for the de-listed ones, while the largest controller in the listed ones is around 10 basis points lower at 0.30 (0.25). Second, the largest voting block increased over time for both listed and de-listed firms. The median of the largest voting block for the listed (de-listed) firms moved from 0.32 (0.45) to 0.38 (0.50) after 2000. Third, concentration of voting is greater in manufacturing, and health and personal services companies but with opposite trends. In manufacturing the median of the voting concentration rises by ten points passing from 0.36 to 0.46, while in health companies the median decreases from 0.53 to 0.50. Regarding the financial and insurance companies, they are composed by holding investment or trust funds and play a role as ultimate controllers within the business groups. The voting concentration has remained constant, so these ultimate owners are still strategically the same. Fifth, separation ratios are high and above 0.9 in most cases. This reflects that firm control is exerted through direct ownership. Thus, corporate structure follows a strong owner management bias. In other words, owners command, control boards and appoint CEOs.

The overall ratios tend to be slightly higher in Colombia (0.94, 0.96) than those found in other studies. For instance Chapelle (2001) reports a 0.80 separation ratio for the large voting block for 135 listed Belgium firms in 1995. Claessens et al (2000) report an overall ultimate

Table 6

Separation of Cash Flow to Voting Rights in Colombian Corporations (Largest Voting Block: by listing status and industry group (average per period)

		1996 - 1999					2000-2002			
	N	mean	Median	P75	P25	N	mean	Median	P75	P25
A. Cash Flow Rights (Direct Ownership)										
LISTED CORPORATIONS	79	0.3003	0.2549	0.4133	0.1432	92	0.3699	0.3215	0.4954	0.1808
DE-LISTED CORPORATIONS	69	0.4258	0.3693	0.6012	0.2242	41	0.4906	0.4745	0.6623	0.2974
Agriculture, Hunting, Forestry and Fishing	6	0.165	0.130	0.263	0.102	5	0.1934	0.1629	0.2846	0.0942
Mining and Quarrying	3	0.316	0.333	0.436	0.197	2	0.3642	0.3642	0.5417	0.1866
Manufacturing	74	0.374	0.333	0.514	0.184	72	0.4581	0.4317	0.6088	0.2555
Construction	6	0.228	0.219	0.272	0.175	4	0.2221	0.2342	0.2825	0.1616
Wholesale, Retail Trade, Lodging Services	18	0.386	0.327	0.533	0.235	11	0.3935	0.3465	0.5984	0.2048
Transport, Storage and Communication	12	0.308	0.278	0.426	0.192	11	0.3714	0.3485	0.5043	0.2088
Financing, Insurance, Real State	20	0.314	0.258	0.370	0.169	19	0.2989	0.2244	0.3604	0.1184
Community, Social and Personal Sevices	7	0.586	0.546	0.765	0.425	8	0.5479	0.5013	0.7249	0.3846
Other non-classified business activities	3	0.258	0.212	0.396	0.165	1	0.2191	0.2191	0.2191	0.2191
Total sample	148	0.3552	0.1856	0.3041	0.4934	133	0.4087	0.2070	0.3575	0.5470
B. Voting Rights(Integrated Ownership)										
LISTED CORPORATIONS	79	0.3188	0.2761	0.4598	0.1638	92	0.3881	0.3538	0.5316	0.2012
DE-LISTED CORPORATIONS	69	0.4459	0.3887	0.6623	0.2533	41	0.5058	0.4746	0.7451	0.3060
Agriculture, Hunting, Forestry and Fishing	6	0.177	0.136	0.279	0.105	5	0.204	0.180	0.300	0.098
Mining and Quarrying	3	0.394	0.432	0.571	0.217	2	0.393	0.393	0.600	0.187
Manufacturing	74	0.400	0.369	0.564	0.205	72	0.476	0.460	0.669	0.281
Construction	6	0.228	0.219	0.272	0.175	4	0.222	0.234	0.283	0.162
Wholesale, Retail Trade, Lodging Services	18	0.399	0.333	0.569	0.241	11	0.413	0.363	0.635	0.205
Transport, Storage and Communication	12	0.329	0.308	0.428	0.223	11	0.397	0.360	0.504	0.267
Financing, Insurance, Real State	20	0.336	0.284	0.383	0.195	19	0.319	0.269	0.392	0.139
Community, Social and Personal Sevices	7	0.586	0.546	0.765	0.425	8	0.548	0.501	0.725	0.385
Other non-classified business activities	3	0.258	0.212	0.396	0.165	1	0.219	0.219	0.219	0.219
Total Sample	148	0.3747	0.1996	0.3217	0.5156	133	0.4257	0.2235	0.3792	0.5845
C. Cash Flow to Voting Rights Ratio										
LISTED CORPORATIONS	79	0.9409	0.9187	0.8977	0.8735	92	0.9527	0.9090	0.9333	0.8963
DE-LISTED CORPORATIONS	69	0.9553	0.9490	0.9088	0.8889	41	0.9700	0.9998	0.8942	0.9710
Agriculture, Hunting, Forestry and Fishing	6	0.929	0.955	0.924	0.976	5	0.945	0.914	0.930	0.965
Mining and Quarrying	3	0.780	0.762	0.744	0.891	2	0.927	0.927	0.904	1.000
Manufacturing	74	0.934	0.903	0.913	0.897	72	0.963	0.939	0.908	0.910
Construction	6	1.000	1.000	1.000	1.000	4	1.000	1.000	1.000	1.000
Wholesale, Retail Trade, Lodging Services	18	0.968	0.981	0.949	0.974	11	0.951	0.955	0.940	1.000
Transport, Storage and Communication	12	0.932	0.895	0.994	0.868	11	0.931	0.961	1.000	0.780
Financing, Insurance, Real State	20	0.930	0.899	0.962	0.867	19	0.934	0.835	0.908	0.871
Community, Social and Personal Sevices	7	1.000	1.000	1.000	1.000	8	1.000	1.000	1.000	1.000
Other non-classified business activities	3	1.000	1.000	1.000	1.000	1	1.000	1.000	1.000	1.000
Total Sample	148	0.9480	0.9296	0.9451	0.9570	133	0.9601	0.9262	0.9428	0.9358

Source: Own estimations based on new assembled dataset from Superintendence of Securities' National Equity Registry Forms (RNVIs).

Notes: separation ratio = direct ownership /integrated ownership.

controller separation ratio average of 0.74 for 2,611 publicly traded East Asian corporations for 1997. Among them Hong Kong reports a ratio of 0.88, Philipines of 0.90, and Thailand of 0.94. In addition, La Porta et al. (1999) find that for the cases of Argentina and Mexico ultimate controllers need around 19.6% and 16.5% of cash flow to get 20% voting rights. It is important to point out that deviations from the one-share-one-vote rule are low, meaning separation ratios close to one, in two opposite cases. The first is associated with widely held corporations with lower voting power for the largest stockholders such as the case of the top 20 corporations in the US as presented in La Porta et. al (1999). The second case arises in highly concentrated ownership structures where the largest voting block has companies' absolute control with overall direct votes greater than 50%. This case will induce a strong control bias toward owners. Thus, there is no need of further voting leverage through indirect ownership investments.

Despite the above, the separation ratios for Colombian corporations decrease around 15 percentage points if one computes that measure relative to the top-four largest stockholders according to the findings reported in **Table 7**. The mean (median) of the separation ratio for the total sample decreases to a 0.75 (0.82) level. Here it is clear that there is voting leverage through investments in pyramidal or cross shareholding structures. In addition, the separation ratio measures for the largest and ultimate controller within the *Sindicato Antioqueño* group is lower than the total sample. The mean (median) was 0.85 (0.87) for the 1996-1999 period, and slightly arose to 0.89 (0.89) after 2000. Hence, the presence of cross ownership across firms increases total voting leverages of ultimate owners.

Toward a coalition hypothesis of corporate control?

The separation ratio measures suggest that there is an owner-control bias in contrast to the strong management and passive investor role observed in US corporations. To illustrate the control direction bias we used the cumulative distribution functions (c.d.f) for the largest *direct voting block* and the top-two *direct voting blocks* as used in the studies collected by Barca and Becht (2001). The intuition behind these graphs is to find how asymmetric a cumulative distribution function is. Concentration ratios by definition are within the zero-one interval. Thus, the maximum value for an ownership stake is 100% of a company's net worth.

Table 7
Separation of Cash Flow to Voting Rights in Colombian Corporations
Total sample top-four voting blocks and the ultimate shareholder of *Sindicato Antioqueño* Group

| | 1996 - 1999 | | | | | 2000-2002 | | | |
N	mean	Median	P75	P25	N	mean	Median	P75	P25
			Total Sample Top-four largest shareholders: CR4						
A. Cash Flow Rights (Direct Ownership)									
148	0.794	0.676	0.862	0.970	133	0.807	0.694	0.895	0.982
B. Voting Rights (Integrated Ownership)									
148	1.032	0.804	0.965	1.158	133	1.091	0.853	0.991	1.297
C. Cash Flow to Voting Rights Ratio									
148	0.7697	0.8409	0.8939	0.8378	133	0.7398	0.8134	0.9032	0.7573
		Sindicato Antioqueño Group - ultimate shareholder							
A. Cash Flow Rights (Direct Ownership)									
30	0.2790	0.2398	0.3759	0.1290	29	0.3553	0.3028	0.4917	0.1879
B. Voting Rights (Integrated Ownership)									
30	0.3280	0.2731	0.4760	0.1618	29	0.3995	0.3384	0.5611	0.2216
C. Cash Flow to Voting Rights Ratio									
30	0.8507	0.8780	0.7897	0.7970	29	0.8893	0.8950	0.8763	0.8481

Source: Own estimations based on new assembled dataset from Superintendence of Securities'
National Equity Registry Forms (RNVIs).
Notes: separation ratio = direct ownership /integrated ownership.

If the distribution is uniform with equally proportioned stakes across firms, its cumulative distribution function would be the 45 degree line. That is, there is no dispersion with respect to the distribution median. If the cumulative function for the largest direct voting block (CR1) lies below the 45% degree line, this means that there is low ownership concentration along with low levels of block-holder power. In the opposite case, if the c.d.f of the largest voting block is above the 45 degree line, it represents the existence high ownership concentration and block-holder power.

Corporate control bias direction will be towards having a strong-management bias for the first case and owner-private bias in the second case. **Figure 8** depicts the c.d.f for the largest direct voting block (CR1) for 134 listed firms in Colombia for year 2002. The c.d.f lies on the 45% degree line at a fraction of data smaller than 20% where it crosses the 45% line. Stakes at this point are evenly distributed for the sample 20 percent. At the 50% fraction of the data direct ownership stakes are around 40%. These numbers are lower than the figures reported for the cases of Belgium, France and Italy [Barca and Becht (2001)], and are consistent with the numbers of **table 5** because the largest shareholder on average has 20% less voting power in Colombia with respect to the European average (excluding the UK).

Renneboog (2001) and Becht (2001) show that such distributions follow an inverse-L shape for the United Kingdom and United States cases. In particular their findings show that at a 50% fraction of data, direct ownership stakes are less than 10% in the UK, and less than 5% in the US. The opposite case is Germany, where the c.d.f of the largest direct voting block lies above the 45% line. At the 50% fraction of data direct ownership is around 60%, meaning an absolute control of the largest shareholder across German companies under the one share one vote regime.

The picture changes drastically if one plots the c.d.f for the top-two largest voting blocks. **Figure 9** summarizes the results where the c.d.f is above the 45% degree line. Thus, there is absolute control if the two largest shareholders collude in order to take over companies' board and management. In affiliated companies usually the two largest shareholders belong to the holding. However, this might not the case for the non-affiliated ones or for holdings with substantial cross shares where the second and third largest voting blocks play an important strategic role in keeping the group control across the holding's firms. Next section explores what is the composition of ultimate owners.

7.   Ultimate shareholders

A central question regarding corporate ownership is who the ultimate shareholders are. If a firm has an ultimate controller means that she has enough voting rights to exert a firm's control. Concentration of voting rights is crucial for the designing of a firm's management,

Figure 8
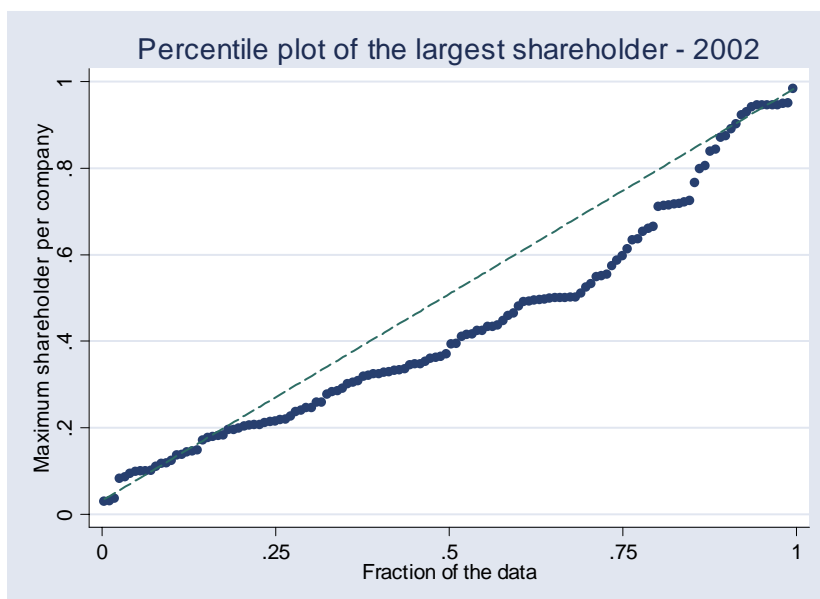
Percentile plot of the largest shareholder - 2002

Source: Own estimations based on new assembled dataset from Superintendence of Equities' *National Equity Registry Forms* (RNVIs).

Figure 9

Percentile plot of the top-two shareholders - 2002
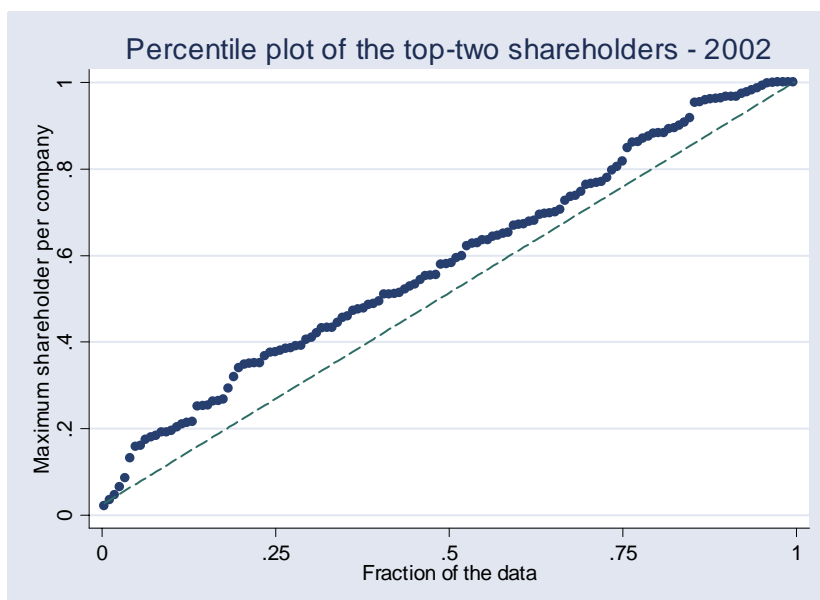
Source: Own estimations based on new assembled dataset from Superintendence of Equities' *National Equity Registry Forms* (RNVIs).

dividend, and investment policies. This section reports the differences of concentration of control as well as changes across time for 173 listed firms in 1996 and 126 corporations for 2002 that were overseen by the Superintendence of Securities. **Tables 8** and **9** summarize the results of controlling shareholders' composition and their separation ratio by type of firm's legal form under the cutoff of the 20 percent voting rights. There are several important results.

The first finding concerns to ultimate shareholders composition. Family controlled firms have low weight within the study sample for both years. They represent at most 6.5% (1996) within the total sample and they reduce to 3.3% (2002) if one restricts the sample to affiliated firms to business groups. This outcome at first glance is opposite to what have been found in international studies of corporate control for emerging markets. For instance, La Porta et al. (1999) reports that family controlled firms represent 65% in Argentinean corporations and 100% for the case of Mexico for large and medium-size publicly traded firms. The results of Claessenss et al. (2000) go in the same direction. In particular, under the 20% cutoff, family controlled firms represent on average 58% of their study sample for East Asian Corporations. Indonesia has the highest rate with 71.5% and Philippines the lowest with 45%. The exception of this study is Japan, an OECD country, where family controlled firms are around 10%. Thus, the above numbers would indicate that ultimate controllers in Colombia have similar characteristics than those in corporations trading in developed capital markets.

However, this is not the case if one takes a closer look of the data and figure out who are behind of some type of legal societies. The business groups analyzed in section 5 showed that holding funds or investment firms play a key role as controlling shareholders of affiliated corporations but also as the entire holding ultimate shareholders. Family owners are hidden within those investment firms and trust fund contracts. This also applies for an important number of unlisted corporations and limited liability partnership firms. For instance, consider the holding fund *Union de Valores* at the top of the Santo Domingo group pyramid. A main shareholder of Bavaria company, is the *Santo Domingo company CSA* who by turn is the largest shareholder of *Union the Valores* and that fund has the largest stake (30%) in *Valores Bavaria* the other investment fund that controls all the group non-core (bear) businesses. Hence, the Santo Domingo family is the ultimate owner of the 17 listed firms included in our study sample as well as around 100 unlisted companies and commercial societies.

If one replicates the analysis for other business groups in the country, excepting the *Sindicato Antioqueño*, one finds families hidden in investment firms, trust funds, and in several types of unlisted firms[22]. Therefore, if one gathers all investment firms, trust fund contracts, limited partnership and around 50% of the unlisted corporations as controlling family firms we have that they represented for the total sample 38% in 1996 and 43% in year 2002. For affiliated firms these numbers are 51% and 56%. Those numbers doubles what is common observed for continental Europe (18%) but still significant lower than the Argentinean and Mexican cases as well as in East Asian countries.

The second finding is that widely held firms represent around 28% of ultimate shareholders in 1996 despite ownership concentration within corporations. Here, the same caveat for investment firms applies. In several cases these widely held partnerships were unlisted firms, investment and trust funds showed up as ultimate controllers. These cases is common to suspect that if you have 10 family members or relatives with uniform shares none of them will have more than 10% voting rights and show up statistically as a widely held firm. Around 40% of the widely held firms matched with investment firms, individual fiduciary contracts and unlisted firms where families are the final owners. The remainder 60% were truly widely held firms in the sense that the sum of minority shareholders had the largest stake in those companies. Widely held firms decreased their participation to 10% by 2002.

The third result is that financial institutions play a limited role as controlling shareholders in contrast the *truly* equity power of families as mentioned, and the significant of ownership domestic corporations. Banks are forbidden by regulation to have direct stakes in real sector companies. However, they make presence through subsidiary firms such as trust funds, investment banks, and insurance companies. For both years financial institutions are less than 10% of the controlling owners. This finding is consistent with those numbers reported in La Porta (199) and Classensen (2000) studies. Domestic corporations are the second source for controlling shareholders, representing around 25% for both years, and foreign firms increased their participation as ultimate owners from 1996 to 2002. This is

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[22] Information regarding individual shareholders and names of investment funds is recorded in some cases at the Superintendence of Societies data base, which as mentioned is *confidential* for third parties. In addition, is common to find investment firms that are not registered at any Colombia's chambers of Commerce and located in Panama City, Caiman Islands and other fiscal paradises which impede the tracing of further shareholders.

Table 8
Ultimate shareholders and the separation of ownership and control in 1996 - 20% cutoff

type	Number Corporations	Part %	Cash-Flow Rights	Voting Rights	Separation Ratio mean	Min	Max
TOTAL SAMPLE 1996							
Family	11	6.4	0.322	0.322	1	1	1
Investment firms	23	13.3	0.280	0.334	0.860	0	1
Trust funds	3	1.7	0.453	0.453	1.000	0.999	1
Financial Institutions	12	6.9	0.327	0.351	0.918	0.601	1
Domestic Corporations	40	23.1	0.424	0.456	0.929	0.402	1
Limited Liability	8	4.6	0.289	0.366	0.811	0	1
Widely Held	49	28.3	0.278	0.282	0.959	0	1
Foreign Firm	12	6.9	0.484	0.484	1	1	1
State	7	4.0	0.522	0.522	1	1	1
Missellaneous	8	4.6	0.369	0.369	1	0	1
Total Sample	**173**	**100**	0.3503	0.3712	0.9388	0	1
HOLDING FIRMS 1996							
Family	2	2.2	0.467	0.467	1	1	1
Investment firms	18	20.0	0.288	0.357	0.821	0	1
Trust funds	2	2.2	0.244	0.244	0.999	0.999	1
Financial Instititutions	8	8.9	0.191	0.227	0.876	0.601	1
Domestic Corporations	27	30.0	0.396	0.443	0.895	0.402	1
Limited Liability	3	3.3	0.120	0.326	0.496	0	1
Widely Held	21	23.3	0.116	0.125	0.904	0	1
Foreign Firm	4	4.4	0.261	0.261	1	1	1
State	1	1.1	0.267	0.267	1	1	1
Missellaneous	4	4.4	0.293	0.293	1	1	1
Total Affiliatted Firms	**90**	**100**	0.2676	0.3078	0.8824	0	1

Source: Own estimations based on new assembled dataset from Superintendence of Securities' *National Equity Registry Forms* (RNVIs) and shareholders information of Superintendence for Commercial Societies.

Table 9

Ultimate shareholders and the separation of ownership and control in 2002 - 20% cutoff

	TOTAL SAMPLE 2002						
	Number	Part	Cash-Flow	Voting	Separation Ratio		
type	Corporations	%	Rights	Rights	mean	Min	Max
Family	7	5.6	0.3866	0.3866	1	0.9999	1
Investment firms	34	27.0	0.4449	0.4711	0.9119	0.1604	1
Trust funds	6	4.8	0.3528	0.3534	0.9959	0.9699	1
Financial Instititutions	7	5.6	0.4511	0.4511	1.0000	0.0889	1
Domestic Corporations	33	26.2	0.4378	0.4686	0.8968	0	1
Limited Liability	4	3.2	0.5232	0.5232	1.0000	0.9213	1
Widely Held	13	10.3	0.2490	0.2947	0.9333	0.1812	1
Foreign Firm	15	11.9	0.5737	0.5737	0.9999	0.9481	1
State	3	2.4	0.4926	0.4931	0.9985	0.5866	1
Missellaneous	4	3.2	0.2441	0.3071	1	1	1
Total Sample	**126**	**100**	0.4246	0.4465	0.9354	0	1
	HOLDING FIRMS 2002						
Family	2	2.2	0.4183	0.4183	1	0.9999	1
Investment firms	34	37.8	0.4449	0.4711	0.9119	0.1604	1
Trust funds	6	6.7	0.3528	0.3534	0.9959	0.9699	1
Financial Instititutions	3	3.3	0.2324	0.2324	1.0000	0.0889	1
Domestic Corporations	25	27.8	0.4058	0.4464	0.8638	0	1
Limited Liability	1	1.1	0.5000	0.5000	1.0000	1	1
Widely Held	6	6.7	0.1390	0.2382	0.8554	0.1812	1
Foreign Firm	8	8.9	0.3903	0.3904	0.9998	0.9481	1
State	2	2.2	0.3401	0.3410	0.9977	0.5866	1
Missellaneous	3	3.3	0.1346	0.2186	1	1	1
Total Affiliatted Firms	**90**	**100**	0.3829	0.4136	0.9096	0	1

Source: Own estimations based on new assembled dataset from Superintendence of Securities' *National Equity Registry Forms* (RNVIs) and shareholders information of Superintendence for Commercial Societies.

consequence of strategic alliances within groups and by the recent capital inflows experienced across Latin American markets. Last, the role and presence of the State as ultimate owner is limited, which is a consequence of the small size of Colombian public sector relative to their Latin American peers[23].

The fourth result regards with the voting power of controlling shareholders. On average ultimate owners had 37% voting rights for the total sample and 31% for affiliated firms in

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[23] The miscellaneous category reported in ultimate controlling shareholders' tables includes private foundations, cooperatives, universities, live stock funds among other legal forms of commercial societies.

1996. These numbers increased to 42% and 38% in 2002. Ultimate owners have more separation of cash flow to control voting within holding firms. On average the separation ratio is 94% for the total sample and 89% for holding firms where there exists more voting leverage through pyramids and cross share holdings. Investment and domestic corporations show lower separation ratios for both years within affiliated firms meaning that they have more ownership relations and links within business groups. One detail is that the average voting power of widely held firms might exceed the 20% cutoff. This is because for some companies the blocks of minority shareholders add up in some cases to 80%, and there is no information of how many individuals form those voting blocks in order to figure out minorities' average voting rights. Another finding is that separation ratios have a minimum value of zero in both years for several cases such as investment, limited liability and domestic corporations. This means that in some companies there are controlling shareholders with zero cash flow and have the greatest voting rights. This is a strong outcome that reinforces the previous results, and constitutes an evidence of the real voting power leverage that takes place within business group companies.

8. Conclusions

This paper has conduced a deep analysis about the separation of ownership and control for real sector listed companies that were security issuers and therefore listed corporations during the 1996-2002 period in Colombia. The study provides for first time evidence for this economy of direct measures of voting rights at the ultimate shareholder level following the modern approach of recent studies of corporate ownership and control done for East Asia, and European countries. It also constitute the first comprehensive case study for a Latin American country where measures of voting rights are restricted to few cases with limited property layers with out covering the entire business group structures.

Our findings suggest that direct ownership and direct voting blocks of the largest shareholder has on average 35% of a company's equity. This number is 20% below the average in continental Europe. The stake of the top-four largest shareholders is about 65% matching the power level of largest blocks observed in countries such as Austria, Belgium, Italy, and Spain according to the numbers reported in Becht's study of control in Corporate

Europe. We also found that ownership concentration has risen about 5% from 1996 to 2002 but none single voting block has the 51% absolute direct control under one share-one-vote regime. In particular, the top four shareholders increased their direct control form 60% to 65% from 1996 to 2002 and the fraction of firms increased from 20% to 30% where the top-four voting blocks have between 90% to 100% a company's stake. Equity concentration of the largest block is larger within non-affiliated firms than the ones affiliated to business groups. In this case the largest stake is around 45% of company's total equity. Here it seems that stock holders prefer to have direct and absolute control.

Voting leverage is implemented within affiliated firms to business groups. The separation ratio of cash flow to voting rights is on average 0.94, similar to the levels observed in emerging markets with high equity concentration such as Thailand. The separation increases if one restricts such measurement to affiliated firms, the top-four share holders or at controlling shareholders within business groups. In particular, we found that the separation ratio for the top-four block holders was around 0.77 for the 1996-1999 period, and it diminished to 0.74 for the 2000-2002 period, and the controlling owners of *Sindicato Antioqueño* is on average 0.87, which is the largest business group in the country and a cross share holding. Thus, strategic shareholders increase their voting power through the cross shares and pyramids.

The analysis of controlling shareholders shows that around three-fourths of the firms have ultimate controllers. Families are the most important source of equity power. We decomposed ultimate owners in ten types of legal societies. We found that investment firms, fiduciary fund contracts, and unlisted firms such as limited liability or non-traded corporations, families are behind those property layers and in fact they are the ultimate owners. Equity control by financial institutions is less common and this finding is consistent with what has been found in other developed and emerging capital markets. On the other hand, corporate control is privately biased in contrast the strong and independent management bias typically found within American corporations. Here, owners set firm control and policies. Concentration of cash flow rights and voting leverage constitute a natural barrier for deepen corporate structures, develop capital markets, incentive firms to adopt codes of best practices and the further develop of institutional channels for good corporate governance ruling. A

positive finding on that regard is that firm listing increased during the period and the de-listing pattern decreased at the same time.

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Appendix 1

The solution for $\mathbf{y}^2$ (Integrated ownership) of

$$\mathbf{y}^2 = \mathbf{A} + \mathbf{y}^2\mathbf{A} - \mathbf{D}(\mathbf{y}^2)\mathbf{A} \qquad\qquad (9)$$

Stars by matrix factorization:

$$\mathbf{y}^2 - \mathbf{y}^2\mathbf{A} = \mathbf{A} - \mathbf{D}(\mathbf{y}^2)\mathbf{A}$$

$$\mathbf{y}^2(\mathbf{I}-\mathbf{A}) = (\mathbf{I} - \mathbf{D}(\mathbf{y}^2))\mathbf{A}$$

$$(\mathbf{I} - \mathbf{D}(\mathbf{y}^2))^{-1}\mathbf{y}^2 = \mathbf{A}(\mathbf{I}-\mathbf{A})^{-1} \qquad\qquad (10)$$

Now we need an expression for $\mathbf{D}(\mathbf{y}^2)$, which can be obtained by matrix factorization of (10)

$$\mathbf{y}^2 = (\mathbf{I} + \mathbf{y}^2 - \mathbf{D}(\mathbf{y}^2))\mathbf{A}$$

$$\mathbf{D}(\mathbf{y}^2) = \mathbf{D}((\mathbf{I} + \mathbf{y}^2 - \mathbf{D}(\mathbf{y}^2))\mathbf{A})$$

$$\mathbf{D}(\mathbf{y}^2) = \mathbf{D}(\mathbf{I} + \mathbf{y}^2 - \mathbf{D}(\mathbf{y}^2))\mathbf{D}(\mathbf{A})$$

$$\mathbf{D}(\mathbf{y}^2) = \mathbf{D}(\mathbf{A}) \qquad\qquad (11)$$

Replacing (11) in (10), we have:

$$(\mathbf{I} - \mathbf{D}(\mathbf{A}))^{-1}\mathbf{y}^2 = \mathbf{A}(\mathbf{I}-\mathbf{A})^{-1}$$

$$\mathbf{D}(\mathbf{I}-\mathbf{A})^{-1}\mathbf{y}^2 = \mathbf{A}(\mathbf{I}-\mathbf{A})^{-1}$$

$$\mathbf{y}^2 = (\mathbf{D}(\mathbf{I}-\mathbf{A})^{-1})^{-1}\mathbf{A}(\mathbf{I}-\mathbf{A})^{-1} \qquad\qquad (12)$$