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Abstract

In large U.S. corporations, founding families are the only blockholders whose control rights on average exceed their cash flow rights. We analyze how families achieve this separation between cash-flow and control rights, and at what cost. We find that indirect ownership through trusts, foundations, limited partnerships, and other corporations is prevalent but rarely creates a wedge between cash-flow and control rights. The primary sources of the wedge are dual-class stock and voting agreements. Additional control is frequently obtained through board representation in excess of voting control, and through the presence of a family member as CEO or Chairman of the Board. We also find that the impact of control-enhancing mechanisms on firm value depends on the specific mechanism used: the effect is negative for dual-class stock and disproportional board representation, but positive for pyramids and voting agreements.

Keywords: Family firms, ownership, control, dual-class stock, corporate governance

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Abstract

In large U.S. corporations, founding families are the only blockholders whose control rights on average exceed their cash flow rights. We analyze how they achieve this wedge, and at what cost. Indirect ownership through trusts, foundations, limited partnerships, and other corporations is prevalent but rarely creates a wedge (a pyramid). The primary sources of the wedge are dual-class stock, disproportionate board representation, and voting agreements. Each control-enhancing mechanism has a different impact on value. Our findings suggest that the potential agency conflict between large shareholders and public shareholders in the United States is as relevant as elsewhere in the world.

Corporate governance scholars and regulators in the United States have traditionally been concerned about protecting investors from managerial entrenchment and expropriation—the classic agency problem described by Berle and Means (1932) and Jensen and Meckling (1976). Yet, a growing body of literature has shifted attention toward a different agency problem that seems to be of greater concern in most of the world: the expropriation of small investors by large controlling shareholders [Shleifer and Vishny (1997)]. We suggest that this second type of agency problem is also significant in the U.S.

Several important findings have emerged from the international corporate ownership literature. First, most firms around the world are controlled by a large shareholder, typically founders or their families [La Porta, López de Silanes, and Shleifer (1999); Claessens, Djankov, and Lang (2000); and Faccio and Lang (2002)]. Even in the U.S., where ownership dispersion is at its highest, founding families exercise a significant degree of control over a third of the 500 largest corporations [Anderson and Reeb (2003); and Villalonga and Amit (2006)], and over more than half of all public corporations [Villalonga and Amit (2008)].

Second, founding families are often able to leverage their control over and above their sheer equity stake through mechanisms such as dual-class stock, pyramidal ownership, and cross-holdings [La Porta, López de Silanes, and Shleifer (1999); Claessens, Djankov, and Lang (2000); and Faccio and Lang (2002)]. Here again, the U.S. is no exception. La Porta, López de Silanes, and Shleifer (1999) show that, in 17 of the 27 countries in their sample, the deviations from the one-share one-vote norm are lower than they are in the U.S.; in fact, among the 12 countries they classify as having high investor protection, only Norway exhibits greater deviations.

It is important to note that the most widely researched of these mechanisms, dual-class stock, has traditionally been studied in the context of insider holdings, and interpreted as a manifestation of the agency problem between owners and managers [e.g., Partch (1987); and Jarrell and Poulsen (1988)]. However, DeAngelo and DeAngelo (1985) and Nenova (2001), who look at the identity of those insiders, show that the primary beneficiaries among them are also founding families: Nenova (2001) reports that this is the case for 79% of dual-class firms in her comprehensive international sample, and for 95% of U.S. dual-class firms. Relatedly, Gompers, Ishii, and Metrick (2008) find that the single most important determinant of dual-class status is having a person's name in the firm's name (e.g., Wrigley, or Ford), an obvious proxy for family control. These results suggest that the separation of ownership and control enabled by dual-class stock is in fact a manifestation of the second agency problem, the one between large (family) shareholders and small (non-family) shareholders.

Third, when founders or their families use control-enhancing mechanisms to create a wedge between their cash flow and control rights, firm value is reduced [La Porta, López de Silanes, Shleifer, and Vishny (2002); Claessens, Djankov, Fan, and Lang (2002); Barontini and Caprio (2006); and Villalonga and Amit (2006)].

This paper builds on these findings to develop and empirically test a unifying framework that shows how different mechanisms contribute to the wedge between the cash-flow and control rights of founding families or other controlling shareholders. The framework reconciles the discrepancies in the way the wedge has been measured in earlier studies.

In addition to dual-class stock and pyramidal ownership (the two primary mechanisms considered in earlier studies), we analyze the wedge between cash flow and control rights created by voting agreements, whereby voting power is transferred from one shareholder to another, and

disproportionate board representation—control of the board of directors in excess of voting control.

Further, we argue that, because some mechanisms can serve purposes other than pure control enhancement, different mechanisms should have a different impact on value. In fact, the value effect of some mechanisms may be non-negative, even when those mechanisms enhance control rights over and above cash flow rights.

We apply our wedge decomposition framework and test our hypotheses using a uniquely detailed dataset about the ultimate ownership and control of large U.S. corporations. The sample comprises 3,006 firm-year observations from 515 firms between 1994 and 2000. Our data enable us to observe six different forms of share ownership—by one sole person (or family group) or shared with another investor; and with investment and voting power, or with only one of the two powers. Through voting agreements among shareholders, this multiplicity of share ownership forms creates a divergence between cash-flow and control rights, independent of that created via dual-class stock and pyramids, which has not been captured by earlier studies.

We begin by identifying which types of blockholders have control rights in excess of their cash flow rights in U.S. corporations, and find that this is only the case for founding families. These families are present as blockholders, officers, and/or directors in about 40% of our sample firms, and own an average of 15.3% of the shares and 18.8% of the votes in those firms. For all other types of blockholders—institutions and individuals other than founders—the wedge is negative even in non-family firms.

In light of this finding, we focus the empirical application of our wedge decomposition framework on founder- or family-controlled firms only. We note, however, that the framework applies more generally to any ultimate owners whose control rights exceed their cash-flow rights.

We find that direct ownership is the most common form of founding family ownership in the U.S. and accounts for 62% of total family holdings of both shares and votes. Nevertheless, 80% of the firms also use some form of indirect ownership, through trusts, foundations, corporations, and limited partnerships.

We also find that the primary source of the wedge between founding family ownership and control in the U.S. is disproportionate board representation, followed in importance by dual-class stock, voting agreements, and pyramids. We explain how each of these mechanisms contributes to enhance corporate control by decomposing our wedge measures into three components: the difference (or ratio) between share ownership and vote ownership, the difference between vote ownership and voting control, and the difference between voting control and board control.

Finally, and consistent with our predictions, we find that the impact of control-enhancing mechanisms on firm value depends on the mechanism used: dual-class stock and disproportionate board representation have a negative impact, while pyramids and voting agreements have the opposite effect.

The paper is structured as follows. In the following section, we develop our framework for understanding how different mechanisms contribute to the separation between cash-flow and control rights. Section 2 describes the data. In Section 3 we document who owns large U.S. corporations and how they are owned—what investment vehicles are used by controlling shareholders, in particular by founders and their descendants. In Section 4 we document founding families' usage of different control-enhancing mechanisms. We also show how much control founders and their families gain through the use of each mechanism, by apportioning the wedge between their cash flow and control rights among its different sources. Section 5 presents

the results about how the different control-enhancing mechanisms affect value. Section 6 concludes.

1. Decomposing the Wedge between Cash-Flow and Control Rights: A Unifying Framework

Prior studies about the mechanisms used by controlling families to leverage their control rights over their cash-flow rights suggest that all of these mechanisms reduce firm value. However, because some mechanisms can serve purposes other than pure control enhancement, their net effect on value may not always be negative.

Pyramidal ownership is one such mechanism. Almeida and Wolfenzon (2006) provide a rationale for the use of pyramids that differs from the agency argument in Bebchuk, Kraakman, and Triantis (2000) and others. In their model, pyramidal structures emerge as families use a firm they already control to set up a new firm, which allows them to access the entire stock of retained earnings of the firm they control and to share the security benefits of the new firm with other existing shareholders of the original firm—a valuable feature when internal funds are important and when the security benefits of the new firm are low, as is often the case in settings with poor investor protection. Consistent with their theory, Khanna and Palepu (2000) provide evidence of internal capital market advantages to pyramidal business groups in emerging markets.

In high investor protection economies like the U.S., pyramids can also appear as a result of leftover blockholdings from unsuccessful takeover bids, equity carve-outs where the spun-off firm is not yet fully divested from its parent, and equity cross-holdings between joint venture partners [Morck (2005)]. Allen and Phillips (2000) show that such inter-corporate equity

holdings are often long-lasting and value-adding, particularly when they support strategic alliances and other product-market relationships among partner firms.

Moreover, in high investor protection economies, privately-held intermediate entities in pyramids may also serve as investment vehicles for sophisticated investors like private equity funds, pension funds, and other institutional investors. Such investors may play a monitoring role with respect to the founding family and, unlike retail investors in publicly traded corporations, are vigilant in preventing tunneling.

Another mechanism that can serve purposes other than pure control enhancement are voting agreements whereby blockholders pool their voting rights. Several papers have pointed out the benefits of shared control among large shareholders for firm value as a whole. Bennedsen and Wolfenzon (2000) show that founders can optimally choose an ownership structure with multiple large shareholders to force them to form coalitions to obtain control. In their model, by grouping member cash-flows, coalitions internalize to a larger extent the value consequences of their actions and hence take more efficient actions than would any of their individual members. Thus, coalitions serve as a commitment device. In Gomes and Novaes (2005), the governance role of shared control stems not only from reduced ex-ante incentives to appropriate private benefits at a high efficiency cost, but also from ex-post bargaining problems among controlling shareholders that raise the cost of such behaviors.[1]

Dual-class stock and disproportionate board representation, on the other hand, serve as pure control-enhancing mechanisms. Therefore, and to the extent that markets understand the rationale behind some of these mechanisms, stock prices should reflect a different effect on firm value for different mechanisms. We specifically expect dual-class stock and disproportionate

board representation to have a negative impact on firm value, whereas pyramids and voting agreements can have a neutral or even positive impact.

Because of this differential impact, it is important to understand how the various mechanisms contribute to the separation between corporate ownership and control. Two strands of research have empirically measured the wedge between a controlling shareholder's cash-flow and control rights: dual-class stock studies [e.g., DeAngelo and DeAngelo (1985); Partch (1987); Doidge (2004); and Gompers, Ishii, and Metrick (2008)] and ultimate ownership studies [La Porta, López de Silanes, and Shleifer (1999); Claessens, Djankov, and Lang (2000); and Faccio and Lang (2002)].

Both sets of studies use fractional equity ownership (the percentage of all shares outstanding of all classes held by the shareholder) as a measure of cash-flow rights, and voting rights as a measure of control rights. However, voting rights are computed differently in the two sets of studies. Dual-class stock studies measure voting rights as the ratio of the number of votes associated to the shares held by the shareholder to the total number of votes outstanding in the company. In companies with multiple classes of shares, different classes may entitle their holders to a different number of votes per share, and holding relatively more shares of the superior voting class is what creates the wedge between controlling owners' cash flow and control rights.

In the literature about ultimate ownership of corporations that starts with La Porta, López de Silanes, and Shleifer (1999), a controlling shareholder's cash flow and control rights may differ not just because of dual-class stock, but also due to indirect ownership through one or more intermediate corporations that the shareholder also controls (a control chain). In that case, cash flow rights are measured as the product of the ownership stakes along the control chain, and voting rights are measured as the "weakest link" (the lowest percentage) in the control chain.

A simple example can help illustrate the different measures. Figure 1 depicts a company, Firm B, which is controlled by a family through the family's ownership stake in Firm A. Firm A has one class of shares, but Firm B has two classes of shares with different voting rights. The family owns 80% of all shares and votes outstanding in Firm A, which, in turn, owns 40% of all shares outstanding in Firm B. Because Firm B has dual-class stock, Firm A is actually entitled to 60% of all votes outstanding in Firm B. The family's cash flow rights would be measured (in both sets of studies) as the product of the family's share ownership in Firm A (80%), and Firm A's share ownership in Firm B (40%), or 32%. The family's control (or voting) rights in the dual-class stock literature would be measured as the product of the family's share (and vote) ownership in Firm A (80%), and Firm A's vote ownership in Firm B (60%), or 48%. In the ultimate ownership literature, however, the family's control rights would be measured by the "weakest link" in the control chain, i.e., the minimum of the two voting stakes, which is 60%.

We note that the two measures of control rights only differ in the presence of indirect ownership, and provided that all the links are lower than 100%. Moreover, the rationale for using the weakest link to measure control rights requires the adoption of some minimum threshold for a shareholder to be considered in control, which in prior studies is arbitrarily set at either 10% or 20%. That is, under the approach followed in the ultimate ownership literature, we can only say that the family controls 80% of Firm A because 80% is greater than any of those thresholds. If the family owned only 5% of all shares outstanding in Firm A, and we were using a control threshold of 10% (or 20%), we would not classify the family as an ultimate owner. Instead, we would say that Firm B is controlled directly by its owner, Firm A.

These thresholds, combined with data limitations, such as the difficulty of tracing indirect ownership when intermediate corporations are privately held, drive the definition of pyramid

used in the various studies of ultimate ownership. La Porta, López de Silanes, and Shleifer (1999), for instance, define a pyramid as an ownership structure where the firm has an ultimate owner (at either the 10% or 20% level) and there is at least one publicly traded company between the firm and the ultimate owner in the chain of voting rights. Faccio and Lang (2002, p. 372) posit that "firm Y is said to be controlled through pyramiding if it has an ultimate owner, who controls Y indirectly through another corporation that it does not wholly control" and note that "pyramiding implies a discrepancy between the ultimate owner's ownership and control rights."

There are two other potential sources of divergence between cash-flow and control rights that have not been considered by prior studies. The first is the variety of ways in which a share can be held. In the U.S. in particular, shares can be held in one of six ways. First, shares can be held with investment and voting power, or with only one of the two powers. Investment power, also called dispositive power, refers to the right to buy and sell the shares. Holders of shares with investment power are also typically entitled to the cash-flow rights associated to those shares, unless they disclaim beneficial ownership of the shares (and hence any pecuniary interest in them). Voting power refers to the right to exercise the voting rights associated to the shares. Shareowners have the right to cede this power to others via voting agreements. In addition, a share's investment and voting power can be held solely by a single person or shared among two or more individuals or institutions. As a result, controlling shareholders' cash flow and control rights may differ, even in the absence of dual-class stock and pyramidal ownership, simply because the number of shares over which they hold investment power differs from the number of shares over which they hold or share voting power.

The second source of divergence between cash-flow and control rights that is not fully captured by prior studies is the fact that founding families' rights to the election of directors

often entitle them to a fraction of the board that exceeds their fractional share ownership, and even their voting control—what we refer to as disproportionate board representation. This can be an important form of corporate control because, by having the right to elect a large fraction of the board, families can control the firm's management, strategic direction, and the voting agenda. Indeed, earlier studies of dual-class stock like DeAngelo and DeAngelo (1985), Zingales (1995), and Gompers, Ishii, and Metrick (2008) recognize the existence of dual-class stock where the only difference in rights between classes pertains to the election of directors. We explicitly incorporate this form of control into our wedge decomposition framework by measuring the percentage of all board seats controlled by the founding family, independently of whether firms have dual-class stock or not.

To help understand the relation between the different measures of voting control used in earlier studies and incorporate the additional sources of separation between cash-flow and control rights, we provide a unifying framework where we label and define the different concepts as follows:

O = Shares Owned: Shares held by the family or blockholder with investment power (with or without voting power), in sole form, as a percentage of total shares outstanding.[2, 3]

V= Votes Owned: Votes associated to the shares held by the family or blockholder *with voting power* (with or without investment power), in sole form, as a percentage of total votes outstanding.

C = Votes Controlled: Votes associated to the shares held by the family or blockholder with voting power, in sole or shared form, as a percentage of total votes outstanding,

plus any additional voting control resulting from pyramidal ownership (measured by the weakest link in the chain of control).

B = Board Seats Controlled: Percentage of all board seats controlled by the family or blockholder.

Using this notation, we can define the wedge between cash-flow and voting control rights more precisely as the difference (or ratio) between *C* and *O*, which is the wedge measure used in the ultimate ownership literature, and decompose it into two additive parts: the difference (or ratio) between *V* and *O* (which is the wedge measure used in the dual-class stock literature), and the difference (or ratio) between *C* and *V*:

$$\textit{Wedge measured as difference: } (C - O) = (V - O) + (C - V). \quad (1)$$

$$\textit{Wedge measured as ratio: } C/O = V/O \times C/V. \quad (2)$$

Furthermore, we include director election rights as an additional form of corporate control over and above voting control, by measuring the wedge between *B* and *C*. Thus, the total wedge can be defined as the gap between *B* and *O*, and decomposed as follows:

$$\textit{Wedge measured as difference: } (B - O) = (V - O) + (C - V) + (B - C). \quad (3)$$

$$\textit{Wedge measured as ratio: } B/O = V/O \times C/V \times B/C. \quad (4)$$

In this framework, different control-enhancing mechanisms contribute to different components of the total wedge: dual-class stock is responsible for the $(V - O)$ wedge, pyramids and voting agreements are responsible for the $(C - V)$ wedge, and disproportionate board representation is responsible for the $(B - C)$ wedge. In the example of Figure 1, the total wedge (measured as a difference) is $(C - O) = 60\% - 32\% = 28\%$, which is the sum of $(V - O) = 48\% - 32\% = 16\%$ wedge attributable to dual-class stock, and $(C - V) = 60\% - 48\% = 12\%$ wedge attributable to the pyramid.

Figure 2 shows how a similar effect can be attained by combining dual-class stock with a voting agreement. As in the previous example, O = 32%, V = 48%, C = 60%, and the wedges are the same as before, but in this case there is no pyramid. Instead, the 12% ($C - V$) wedge is now attributable to the fact that a non-family shareholder has ceded to the founding family the voting power over the 12% of Firm C's shares that he or she owns.

In either case, the founding family's overall control of Firm B (in the first example) or Firm C (in the second example) will be further enhanced if the family is allowed to elect, for instance, 75% of the board, instead of the 32% that its share ownership would entitle it to, or the 60% that its voting control would entitle it to. In that case, the total wedge would be ($B - O$) = 75% – 32% = 43%, and the additional wedge created by the family's disproportionate board representation would be ($B - C$) = 75% – 60% = 15%.

We note that the wedge decomposition framework we propose is additive by construction. An alternative would be to measure the effect of each mechanism in isolation from all others and allow for interaction effects among the different mechanisms, which could then be apportioned between the interacting mechanisms in proportion to their independent contributions. We call this alternative the multiplicative approach. For instance, going back to Figure 1, one could compute the pure effect of the pyramid had there not been any dual-class shares, which would be the difference between: (a) the weakest link between 80% and 40%, or 40%, and (b) the cash-flow rights of 32%, which is 8%, half the size of the ($V - O$) wedge attributable to dual-class stock (16%). The 12% difference between C and V could be considered as an interaction effect, or apportioned between the isolated effects of dual-class stock and pyramids on a pro-rata basis (2/3 and 1/3, respectively), which would increase the portion of the

wedge attributable to dual-class stock to 24% (= 16% + 8%), and decrease the portion of the wedge attributable to dual-class stock to 4%.

As this example illustrates, relative to the multiplicative approach, the additive approach underestimates the contribution of those mechanisms that appear earlier in our framework (dual-class stock is the first to appear), and overestimates the contribution of mechanisms that appear later (disproportionate board representation is the last). The advantage of the additive approach is that it is more intuitive to comprehend and apply. Therefore, in the empirical analysis that follows, we use the additive version of our framework to measure the separation between cash-flow and control (and director election) rights in U.S. founder- or family-controlled firms, apportion it among its components, and examine the impact of each mechanism on firm value. However, the results are not sensitive to the use of one approach or another.

2. Data

2.1 Database construction

Our data set is a panel of 62,431 shareholder-firm-year observations, aggregated into 3,006 firm-year observations of 515 Fortune 500 firms during the period 1994 to 2000. The sample includes all the firms that were in the Fortune 500 in any of these years, have Compustat data on sales, assets, and market value during that period, and whose primary industry is not financial services, utilities, or government. The sample firms' primary industries span 61 two-digit SIC codes. For those firms that meet these criteria, we include all years with data available between 1994 and 2000, even if the firm is not in the Fortune 500 list in a particular year.

Our data collection process involves three distinct phases. In the first phase, we build a database at the individual shareholder level that covers, for each firm-year in the sample, all of

its insiders (officers and/or directors), all of its blockholders (owners of 5% or more of the firm's equity), and the five largest institutional shareholders. We compile our Phase I data set from four sources: (1) proxy statements for detailed information about blockholder and insider ownership and about the firm's voting and board structures, which we obtain from either the U.S. Securities and Exchange Commission's (SEC) Edgar database, or from Thomson Research; (2) Spectrum data on institutional holdings; (3) Hoover's, corporate websites, and web searches about company histories and family relationships; and (4) various SEC filings, to clarify the identity of ultimate owners whenever their shares in the firm are held indirectly. This data set comprises 62,431 shareholder-firm-year observations.

The second phase of our data collection process consists of aggregating our shareholder-level database from Phase I into firm-years. As part of this phase, we aggregate individual family members' shareholdings at the family level. This step requires manual coding of all the information on family shareholdings that appears in the footnotes to the blockholder and insider ownership tables of proxy statements, since the information in those tables (and in any U.S. corporate ownership database that is available electronically) entails a large amount of duplication across members of the same family. We then merge our firm-level ownership data with data on various firm characteristics that we assemble from four other sources: Compustat; the Center for Research on Securities Prices (CRSP); the Investor Responsibility Research Center (IRRC), which provides data on governance provisions in charters, bylaws, and SEC filings; and 10-Ks, from which we manually collect data on dividends paid to shares of various classes, including non-publicly traded classes. This phase results in a database with 3,006 firm-year observations from 515 different firms.

In the third phase, we produce a graphical representation and a detailed quantitative analysis of each founder- or family-controlled firm's ownership and control structure. This analysis enables us to allocate founding families' holdings of shares and votes to the different investment vehicles (trusts, foundations, limited partnerships or corporations) and control-enhancing mechanisms (dual-class shares, voting agreements, and pyramids) used by founders and/or their families to control firms in the U.S.

2.2 What are founder- or family-controlled firms?

We define founder- or family-controlled firms as those in which the founder or a member of his or her family by either blood or marriage is an officer, director, or blockholder, either individually or as a group. The definition follows Anderson and Reeb (2003), and is the broadest one we can use with our data, as it does not require a minimum threshold for family ownership or control above those imposed by SEC reporting requirements. We purposely chose this definition so as to include as many founder- or family-controlled firms as possible in our analysis of ownership and control mechanisms. As shown in Villalonga and Amit (2006), however, definition matters, particularly the distinction between first-generation (founder-controlled) firms, and second or later generation firms (family firms proper). Therefore, in this paper, we restrict the term "family firm" to second or later generation firms only, and show how the results differ between them and founder-controlled firms.

We consider as founders those individuals who are identified as such in at least two public sources and no other data source that we are aware of mentions a different person as the founder.[4] The person who is publicly recognized as the founder is typically the one responsible for the early growth and development of the company or a predecessor firm into the business that

it later became known for. This need not be the same individual who started and incorporated the company, nor the one who took it public. The extension of our definition of founders to predecessor firms implies that we also classify as founder- or family-controlled firms those companies in our sample that are the result of an earlier acquisition or merger with such a firm.

On the other hand, we exclude the following individuals and groups from our definition of founding families: (1) individuals or families behind investment management companies, such as Fidelity (controlled by Edward Johnson and his daughter, Abigail), or Franklin Resources (controlled by brothers Charles and Rupert Johnson), whose funds are large institutional investors in our sample firms; (2) general partners in venture capital funds or leveraged buyout funds, such as KKR (controlled by Henry Kravis and George Roberts, who are first cousins). We exclude (1) and (2) because the ultimate shareholders in these funds are a widely dispersed base of diversified investors. We also exclude (3) executives who became the largest non-institutional shareholder in their company through the accumulation of stock-based compensation, through a spin-off, or through a management or leveraged buyout.[5] While these individuals may also set up control-enhancing mechanisms and have conflicting objectives from those of other shareholders, we believe their incentives for corporate control differ intrinsically from those of founding families, who are typically concerned about preserving wealth and their business for successive generations, and tend to have a much longer-term orientation.

2.3 Examples of control-enhancing mechanisms

In this section we provide detailed examples from our database of the main mechanisms used by founders or their families to enhance their control of U.S. firms.

2.3.1. Dual-class stock. As described in the previous section, dual-class stock enhances founding family control by creating a wedge between the percentage of votes owned by the founding family (*V*) and the percentage of shares it owns (*O*). The wedge is due to the superior voting rights associated to the shares held by the family with voting power, and will exist even when all shares are held with both investment and voting power. Examples of dual-class companies in our sample where the founding families' voting rights greatly exceed their cash-flow rights include Comcast Corporation, where, in 2000, founder Ralph Roberts and his son Brian owned 3.14% of the shares but 85.64% of the votes; Viacom Inc., where, in 2000, Sumner Redstone and his children owned 13.3% of the shares but 67.55% of the votes; Tyson Foods, Inc., where, in 1998, the Tyson family owned 45.41% of the shares but 89.05% of the votes; and Ford Motor Company, where, in 1998, the Ford family owned 6% of the shares but 40% of the votes.

2.3.2. Voting agreements. Voting agreements enhance family control by creating a wedge between the percentage of votes owned (*V*) and the percentage of votes controlled (*C*). Voting agreements whereby one shareholder cedes the voting power over his or her shares to another are common among members of the same family. Proxy statements sometimes describe or at least mention these shareholder agreements, but more often, we just observe the outcome of the agreements in the form of a discrepancy between the number of shares held with investment power and the number of shares held with voting power by any officer, director, or blockholder listed in the proxy. Because, in our database construction, we aggregate the holdings of all founding family members into one shareholder group, most differences between families' investment and voting power are washed out, and we only record as voting agreements those that take place between the founding family and other large shareholders.

One such agreement takes place in The Washington Post Co. (WP), during all the years in our sample. In 2000, for instance, Katharine Graham and her four adult children held investment and voting power over 44.9% of all shares outstanding in WP. Berkshire Hathaway Inc., of which Warren Buffett and his wife owned approximately 33.6%, held investment power over 18.3% shares of WP. (Buffett served on WP's board of directors between 1974 and 1986, and then again since 1996.) Pursuant to an agreement dated 1977 and amended and extended in 1996, Warren Buffett, Berkshire, and its subsidiaries had granted Katharine Graham's son Donald Graham a proxy to vote such shares at his discretion. As a result, the Graham family actually had voting power over 63.2% of WP's shares, but investment power over 44.9% (all of which are included in the 63.2%).

2.3.3. Pyramids. Like voting agreements, pyramids enhance founding family control by creating a wedge between the percentage of votes owned (*V*) and the percentage of votes controlled (*C*). Following La Porta, López de Silanes, and Shleifer (1999), we define a firm's ownership structure as a pyramid if the founding family holds its shares of the firm indirectly, through one or more investment vehicles in which the family owns less than 100%.[6]

Unlike prior studies in this literature, we do not require the family's investment vehicles to be publicly traded for an indirect ownership structure to be considered as a pyramid, because we are not constrained by our data to do this, and founders and their families can and do enhance their control of firms via privately held investment vehicles. Moreover, the dynamics of pyramiding via unlisted entities may be entirely different from pyramiding via public corporations. Unlike the public shareholders who provide passive investment capital to families when the intermediate entity is listed, investors in privately held entities are ordinarily

institutions who are willing and able to play a more active monitoring role, thereby reducing the risk of tunneling.[7]

An example of a pyramid in our sample is CBS Corporation, depicted in Figure 3. In 1995, CBS was controlled by the Tisch brothers, Laurence ("Larry") and Preston Robert ("Bob"), through their 32% ownership stake in Loews Corp. Loews owned 100% in LT Holding, which in turn owned 17.63% of all shares and votes in CBS. Therefore, the Tisch brothers' indirect ownership of shares and votes in CBS was $O = V = 32\% \times 17.63\% = 5.64\%$, and their indirect voting control was $C = min(32\%, 17.63\%) = 17.63\%$. Adding to these figures Laurence Tisch's direct ownership stake in CBS of 0.32%, we obtain the brothers' total ownership and control stakes in CBS, which were: $O = V = 5.96\%$, and $C = 17.95\%$. This gave the Tisch family a wedge of $(C - O) = 17.95\% - 5.96\% = 11.99\%$, which was entirely attributable to the pyramid created by Loews (LT Holding by itself did not create any pyramidal effect since it was 100% owned by Loews).

2.3.4. Disproportionate board representation. Disproportionate board representation enhances family control by allowing the family to elect a fraction of the board of directors (B) that exceeds not just its share and vote ownership (O and V) but even its voting control (C). Disproportionate board representation is sometimes warranted by shareholder agreements, and sometimes associated to dual-class stock, whereby the class held uniquely by the family grants it superior rights in the election of directors, even when it does not entitle it to superior voting rights. In most cases, however, the election of family members or representatives to the board in excess of the family's voting control takes place *de facto* rather than contractually.

An example of disproportionate board representation and the way we measure it in this paper is the case of The New York Times Co. In 1998, for instance, there were two classes of common stock, A and B, which represented 99.56% and 0.44% of the total shares outstanding, respectively. Each share was entitled to one vote, but class A shareholders could only elect five of the 15 directors, while Class B stockholders were entitled to elect the other 10, or two-thirds of the entire board. The Ochs-Sulzberger family owned 17.9% of the company's total shares outstanding, but 88.7% of all Class B shares, which effectively enabled it to elect the two-thirds of the board reserved for Class B stockholders. Therefore, the wedge between the family's director election rights (66.7%) and its voting rights (17.9%) was 48.8%.

2.3.5. Combinations of mechanisms. When founders or their families use more than one mechanism, the benefits they reap in terms of increased control are compounded. Figure 4 shows the example of Cox Communications Inc. In 2000, the Cox family owned 65.69% of all shares in the company (O). Through dual-class shares, it owned 75.17% of all votes (V). Through its pyramidal ownership via Cox Enterprises, of which it owned 98.4% (263 other people owned the remaining 1.6%), the family controlled an additional 1.19% of votes in Cox Communications, for a total control stake (C) of 76.36%. The total wedge between the Cox family's cash-flow and control rights was therefore $(C - O) = 10.67\%$, which can be decomposed into the dual-class stock contribution of $(V - O) = 9.48\%$, and the pyramid contribution of $(C - V) = 1.19\%$.

2.4 Descriptive statistics

Table 1 provides descriptive statistics for the full sample, broken down into founder-controlled firms, family firms, and non-family firms. Founder- or family-controlled firms represent about

40% of our sample: 1,183 firm-years from 210 different firms. Of these, 540 firm-years (from 101 firms) are founder-controlled, and 643 firm-years (from 117 firms) are family-controlled. The remaining 1,823 firm-years come from 333 non-family firms. As implied by these numbers, there are 8 firms (101 + 117 – 210) that experience a succession from first to second generation during our sample period, and 28 firms (210 + 333 – 515) that experience a transition from the founder- or family-controlled to the non-family category (or vice versa).

On average, founder- or family-controlled firms have a significantly higher Tobin's *q* (with or without industry adjustments) and are smaller than non-family firms, but not significantly so.[8] They are also significantly younger (62 vs. 76-years-old) and exhibit higher growth and market risk than non-family firms. Relative to non-family firms, founder- or family-controlled firms make significantly higher capital expenditures and have lower leverage. However, there are no significant differences in ROA between the two groups.

While some of these differences may seem counter-intuitive, the last three columns in Table 1 show that they are largely driven by the founder-controlled firms in the sample. In fact, family firms proper, while still smaller than non-family firms, are older and have a lower average *q* than them (and than founder-controlled firms), lower risk and capital expenditures, and identical sales growth to non-family firms.

One must be cautious about interpreting the difference in *q* between founder-controlled firms and family firms as indicative of genuine value enhancement associated with generic founder control since there is an obvious selection bias due to the fact that only star performers would reach the Fortune 500 while still being under founder control.

Table 2 provides further descriptive statistics about the dual-share class structures used by our sample firms, including non-traded as well as publicly traded stock. Panel A reports the

frequency of use of these structures by family and non-family firms. About 12% of the sample firms (304 firm-years from 64 firms) have two or more classes of common stock. In two-thirds of these (214 of 304 firm-years), at least one class of common stock is not publicly traded, typically the one with superior voting rights (in 120 firm-years).

Dual-class stock is more common among founder-controlled firms and, especially, family firms, than among non-family firms: 188 or 62% of all dual-class firm-years are from founder- or family-controlled firms, despite the fact that these firms are only about 40% of the entire sample. Founding families are also more likely to keep private at least one of the classes (148 or 70% of the 214 firm-years), especially the superior voting class (96 or 80% of the 120 firm-years).

The finding that most dual-class firms are founder- or family-controlled is consistent with earlier evidence in DeAngelo and DeAngelo (1985) and Nenova (2001). What is perhaps more surprising, in light of Nenova's finding that 95% of all U.S. dual-class firms in her sample are family-controlled, is that 38% of the dual-class firms in our sample are not founder- or family-controlled. Our samples differ in that Nenova's sample includes all U.S. firms with at least two classes of publicly traded stock; ours includes only Fortune 500 firms, but we also consider dual-class firms where only one of the classes trades publicly.

To understand why this is the case, we look into the early histories of the dual-class firms in our sample to determine when the dual-class structures we observe were put in place, and by whom. We find that, in 13 or about half of the 25 non-family firms, the dual-class structures were in fact put in place by the founding families, who later sold out to other owners or died heirless and left the firm in control of a charitable foundation, like Milton Hershey did with the Hershey Trust and the Milton Hershey School. This finding suggests that the reason why

relatively less of the dual-class firms in our sample are founder- or family-controlled is because they are generally older, which reduces the chances of survival of family control.

Panel B of Table 2 reports the differences in voting rights across share classes, which are also larger in founder-controlled and family firms, especially in the latter. The ratio of votes per share between the inferior and superior voting classes averages 0.31 for family firms, but 0.58 for non-family firms. (The closer the ratio is to zero, the wider the deviation from the one-share one-vote norm; a ratio of one would be indicative of no deviation at all.) The difference in medians is even more pronounced: 0.10 for founder- or family-controlled firms versus 0.60 for non-family firms.

Panel B of Table 2 also provides further detail on the distribution of voting arrangements among the dual-class firms in our sample. Consistent with the evidence in Zingales (1995) and Gompers, Ishii, and Metrick (2008), the most common voting ratio among these firms is 1:10.[9] In our sample, 68 out of 304 dual-class firm-years have a 1:10 voting ratio, and another 63 firm-years have ratios higher (i.e., more equitable) than that, but still lower than 1:1. On the other hand, 55 firm-years have at least one class of nonvoting common stock (which effectively creates a ratio of zero), and an additional 21 firms have voting ratios greater that zero but lower than 1:10. Also, 97 dual-class firm-years have a voting ratio of 1:1, but in half of them (49) one class holds superior voting rights with respect to the election of directors. (Some of the less equitable voting arrangements that we have included in other categories also include different rights with respect to the election of directors.)

The distribution of voting arrangements across firms also provides more detail into the finding that less equitable voting arrangements are more prevalent among founder- or family-controlled firms than among non-family firms. Of the 68 firm-years with a 1:10 voting ratio, 67

are from founder- or family-controlled firms, as are 18 of the 21 firm-years with lower ratios, and 35 of the 49 firm-years where the only difference in voting rights across share classes relates to the election of directors. In contrast, non-family firms represent 45 of the 63 firm-years with voting ratios more equitable than 1:10, and 37 of the 48 firm-years where there is no difference in voting rights across classes. The legal minimum voting ratio of 1:10 thus appears to be a binding constraint for founder- or family-controlled firms, but not for non-family firms.

Panel C of Table 2 reports on the dividend characteristics of dual-class stock firms. We collect dividend data for all common stock classes, including non-traded classes, from 10-K reports. Similar to the voting ratio, we measure dividend inequality across classes through a ratio of the lowest-to-highest dividend per share. The average dividend ratio is 0.89, while the median is one.

Panel C of Table 2 also shows that, while founding family shareholders benefit from superior voting rights to a greater extent than controlling shareholders in non-family firms, these gains typically come at the expense of receiving lower dividends. Founder- or family-controlled firms have a more equitable dividend ratio than non-family firms (0.91 vs. 0.85), and when they hold stock of a superior voting class, such class tends to have lower dividends than others (25 out of the 28 firm-years where this happens are from founder- or family-controlled firms). In contrast, in 26 firm-years, the holders of the superior voting class also enjoy superior dividend rights relative to other classes. This form of "double-dipping" is relatively more prevalent among non-family firms: 10 of the 26 firm-years are from founder- or family-controlled firms and 16 from non-family firms, which represent, respectively, 5% of all family firm-years and 14% of all non-family firm-years among dual-class firms. These findings suggest that, when it comes to private benefits appropriation, founders and their families have different preferences from those

of insiders in non-family firms: founders and their families are not as interested in cash benefits as they are in the preservation of family control.

3. Ultimate Ownership of U.S. Corporations

3.1 Who owns U.S. corporations?

Table 3 reports the percentage ownership of shares and votes by founding families and non-family blockholders. On average, founders and their families own 15.3% of their firms' equity, and 18.8% of the votes. These percentages are in fact larger for family firms (16.1% and 20.3%) than they are for founder-controlled firms (14.4% and 17.1%). Non-family blockholders on average own a slightly higher percentage of family firms' equity than founding families themselves (16.2%), yet the voting rights associated to those shares are substantially lower (13.2%). Share ownership by large blockholders is larger in non-family firms (22.1%), as one might expect. Perhaps more unexpectedly, the voting rights of those blocks are also lower (18.8%) than their cash-flow rights. The result is entirely attributable to institutional shareholders; for individual (non-founder) owners of non-family firms, share and vote ownership are identical, yet small (0.8%). This bears the question of who benefits from the separation between cash-flow and voting rights in non-family firms. Since it is not really the blockholders, it has to be the insiders, who either set up those mechanisms or inherit them from an earlier owner. In either case, the implication for non-family firms is that dual-class stock reduces the ability of outside blockholders to effectively monitor insiders.

These differences between share and vote ownership and between family and non-family blockholders motivate our study of control-enhancing mechanisms and justify our focus on founder- or family-controlled firms. All subsequent analyses are therefore conducted on the sub-sample of founder- or family-controlled firms.

3.2 How are U.S. founder- or family-controlled firms owned?

To understand how founders and their families control U.S. corporations, we begin by analyzing how these corporations are owned, i.e., directly or indirectly, and in the latter case, through which investment vehicles: trusts, foundations, corporations, or limited partnerships. Besides corporate control, these investment vehicles can be set up for a variety of reasons, such as tax and estate planning, philanthropy, or liability protection, a detailed study of which is beyond the scope of this paper. We therefore limit ourselves to documenting their usage by U.S. founder- or family-controlled firms, and separate the analysis of investment vehicles, which are ownership mechanisms, from that of control-enhancing mechanisms which, by definition, serve a clear control purpose (even when they may also serve other purposes).

Table 4 summarizes the results of our analysis of how U.S. founder- or family-controlled firms are owned. The most prevalent form is direct ownership: 96% of all founder- or family-controlled firms in the sample (1,137 out of 1,183 firm-years, or 201 out of 210 firms) have at least some direct ownership by their controlling families. Yet the average percentage of total founding family holdings that is held directly is considerably lower (62%). Fully or almost fully direct ownership seldom occurs, but it does in a few of the younger firms in our sample, like Oracle Corporation, Reebok International Limited, Seagate Technology, Southwest Airlines Co., or Sysco Corporation. At the other extreme are companies where the only shares held directly by the founder or his/her family are those that arise from management compensation—either shares that have been awarded in the year and not yet been contributed to the family trust or other investment vehicle, or stock options that are exercisable but not yet exercised, which are typically included in the share ownership count in proxy statements.

As Table 4 shows, indirect ownership is also very prevalent. In 80% of the sample firms (168 firms), founders or their families use one or more investment vehicles, such as trusts, foundations, limited partnerships, or corporations, to hold their shares. Indirect ownership accounts for the remaining 38% of founding families' total average holdings of shares and votes. Following La Porta, López de Silanes, and Shleifer (1999), when there is indirect ownership we compute the founding family's share ownership or cash-flow rights as the product of its ownership stakes along the chain of control, but the votes controlled are measured by the weakest link in the control chain. Of the total average holdings, 3.4% cannot be apportioned among different investment vehicles, for instance because the shares are held in a limited partnership whose general partner is a trust. Such investment vehicle chains, which we refer to in Table 4 as hybrids, are rare, however. For the most part, founding family holdings in U.S. corporations take the form of radial ownership structures, where total ownership of shares and votes can be cleanly separated into investment vehicles, even when the founder or family uses a combination of different vehicles. An example of a radial ownership structure is Murphy Oil Corporation, shown in Figure 5. In contrast, Estée Lauder Companies Inc., depicted in Figure 6, has two hybrid components: a trust-plus-limited partnership and a corporation-plus-limited partnership.

The most commonly used vehicles are trusts of various natures: charitable and non-charitable, revocable and irrevocable, voting trusts, and others; 66% of firms (139 firms) use trusts, which average 17% of total family holdings only in pure form, or almost 20% including hybrid forms.[10] Trusts are typically formed for family estate planning reasons, since they afford enormous flexibility to the grantor in structuring wealth transfers in a tax-efficient manner. Among other purposes, trusts can be used to secure professional investment advice to heirs, to

avoid the delays and expenses associated to the probate process of a will, or to enable donors to receive a marital deduction (and, thereby, make a nontaxable transfer) without having to grant their spouse full control over the gifted property [see Reiling (2007) for a longer list of motives].

Nevertheless, because trusts enable the separation between voting and cash-flow rights among different rightholders, they often have a clear control purpose within our sample, serving either as a vehicle for a coalition of shareholders or as a separate entity that holds the founding family's superior voting shares.[11] For instance, in Carnival Corporation, the Arison family (of four) uses 13 trusts of different types to hold its 66% ownership and 81% voting stake in the company, including a "B" trust where all outstanding B-class (super-voting) shares are held. In the following section we examine the empirical relation between specific investment vehicles and specific control-enhancing mechanisms.

The second most commonly used investment vehicles are foundations, which are used by 37% of all sample firms. We include in this category charitable funds and endowments, as well as actual foundations, but the latter constitute the majority.[12] Foundations are tax-exempt vehicles for philanthropic giving whose operations are regulated by the Internal Revenue Code. Of particular relevance to this study are private foundations, which are those founded by an individual, a family, or a corporation, and governed by the donor or an independent board.[13] By law, private foundations must make annual charitable expenditures of 5% of the market value of their assets, and pay an annual excise tax of 1% or 2% of their net investment income.

Altogether, the foundations category in pure form represents 4.6% of total founding family shareholdings and 4.3% of total voteholdings, or 5.3% and 5.0% including hybrid forms. They are the only investment vehicle where families' share ownership exceeds their voting

control, which suggests that tax and philanthropic motives are more important reasons for the creation of family foundations than corporate control.

Corporations are the third most commonly used investment vehicle, yet they are the second in size. We include in this category C-Corporations, S-Corporations, and Limited Liability Corporations (LLCs), ranging from pure holdings to companies with business activities. The three forms of corporations, along with general and limited partnerships, differ in the liability protection, tax treatment, and financing flexibility that they afford their owners.[14] Thus, the choice of legal form of organization for an investment vehicle in a publicly listed firm is largely a function of who the investors in these entities are; if it is just the founders or a small family, sole proprietorships, general partnerships, S-corporations and LLCs are possible, whereas for larger families and professional investors co-investing with the founding family, corporations and limited partnerships may be more suitable [Roberts (2004)].

Corporations in pure form hold 8.2% of families' total shareholdings and 8.5% of the total votes they control. Including hybrid forms, these figures amount to 10.3% and 10.6%, respectively. This wedge between ownership and control suggests that corporate control plays a larger role in the creation of these corporations than in the creation of other investment vehicles.

Limited partnerships in which the founding family or another family-controlled entity is the general partner hold another 4.7% (6% including hybrids) of founding families' average holdings of shares and votes. As with trusts and foundations, the equality between shareholdings and voteholdings indicates that the control motive in the creation of these partnerships is outweighed by other factors like taxes or liability protection.

The numbers discussed above inform us about the distribution of founding family holdings across different investment vehicles, but are silent about the size of these holdings. To

fill this gap, the last two columns of Table 4 report, for the different ownership categories, the annual dollar value of founding family holdings for the entire sample, averaged over the sample period. The total value of founding family holdings is $240 billion, which is split almost evenly between the direct and indirect ownership categories. Within the latter, limited partnerships, despite being the least frequently used investment vehicle, are where the most family money is invested ($51.8 billion, or $56.5 billion including hybrid forms). At the other extreme are family foundations, which house $4.6 billion ($5.6 including hybrids) of founding families' total investment in their firms. The magnitude of these investments helps us understand why the wealth management industry and family offices in particular are flourishing. It also highlights the importance of studying founder- or family-controlled firms, especially among large public firms like the Fortune 500, where founding family ownership is less prevalent than among smaller firms and foreign firms, yet is highly relevant on a value-weighted basis.

4. How Do Founders and Their Families Control Their Firms in the U.S.?

In this section we analyze the primary mechanisms used by founders and their families to enhance their control of U.S. firms, including dual-class shares, pyramids, voting agreements, and disproportionate board representation. We find no instances of cross-holdings in our sample, at least as they are defined by La Porta, López de Silanes, and Shleifer (1999, p. 480): "there is cross-shareholding by sample firm A in its control chain if A owns any shares in its controlling shareholder or in the companies along that chain of control." As suggested by our discussion of hybrid investment vehicles and the Estée Lauder example, however, we do find multiple chains of control as defined by Faccio and Lang (2002, p. 366) ("each of which includes at least 5% of the voting rights at each link"), which Claessens, Djankov, and Lang (2000) include among

cross-holdings. We classify those multiple chains of control or hybrid investment vehicles as pyramids whenever they create a wedge between ownership and control rights; otherwise we do not consider them as control-enhancing mechanisms.

Table 5 reports on the frequency with which the four mechanisms are used, either alone or in combination with one another. As the table shows, the most commonly used mechanism, by far, is disproportionate board representation, which occurs in 705 firm-years from 139 firms, or 60% of the sample. Dual-class shares with differential voting rights are next: 21% of all sample firms (44 firms) have dual-class stock at some point during the sample period. Fifteen firms have voting agreements, and 11 firms exhibit pyramidal ownership.

The most frequent combination of mechanisms is disproportionate board representation with dual-class stock; roughly a third of dual-class firms (15 out of 44) also entitle their controlling families to superior board control. Yet most instances of disproportionate board representation (129 out of 139 firms) occur in the absence of any other mechanism. Three-mechanism combinations are very rare, and there is no single firm that uses all four mechanisms.

The results in Table 5 show that pyramids are rare no matter how common indirect ownership is among U.S. founder- or family-controlled firms. This finding is consistent with those of La Porta, López de Silanes, and Shleifer (1999), who report a complete absence of pyramids and cross-shareholdings among the 20 largest U.S. firms, but an average ownership stake required to control 20% of the votes of only 19.65%, the second lowest among the 12 countries they classify as having high shareholder protection. The 21% incidence of dual-class firms that we find in our sample is considerably higher than the average of 17.61% reported by Faccio and Lang (2002) for founder- or family-controlled firms in Western Europe. It is also higher than the U.K. mean of 18.84%, which is also the median across all 13 countries in their

sample. Yet European founder- or family-controlled firms have a much higher incidence of pyramids (13.81%, plus 3.22% of firms with holdings though multiple chains). The scarcity of pyramids we find in the U.S. is also consistent with Morck's (2005) arguments and historical evidence that pyramidal business groups largely disappeared from the U.S. in the 1930s as a result of inter-corporate dividend taxation and other tax reforms that rendered them prohibitively costly.[15]

4.1 Contribution of dual-class stock, voting agreements, and pyramids to the separation of ownership and voting control

We now proceed to analyze the wedge created by the different mechanisms. We first focus on the wedge between cash-flow and voting control rights ($C - O$), and leave the wedge between director election rights and voting control rights ($B - C$) for the next subsection, where we analyze board control in the context of other related governance mechanisms.

Table 6 reports empirical estimates of the wedge between ownership and voting control ($C - O$) and the contribution of dual-class stock, voting agreements, and pyramids to that wedge. Panel A reports sample-wide average wedges, broken down into founder-controlled firms and family firms. On average, founding families' control rights exceed their cash-flow rights by a difference of 3.9% or a ratio of 1.28 times. By way of comparison, Claessens, Djankov, and Lang (2000) report, for their sample of East Asian corporations, the equivalent to a ratio of control rights to cash-flow rights of 1.34. Faccio and Lang's (2002) same ratio for their sample of Western European companies is 1.15. This international comparison suggests that the potential agency conflict between large shareholders and public shareholders in the U.S. is at least as relevant as in the rest of the world.

Table 6 also shows that most of the separation between cash-flow and control rights in the U.S. comes from the excess of voting rights over cash-flow rights, which suggests that dual-class stock, but not pyramids or voting agreements, is the dominant control-enhancing mechanism: the difference is 3.6%, which comes from the 18.8% votes owned minus the 15.3% shares owned reported in Table 3 (with some rounding error); the ratio is 1.27.

The breakdown by generation shows that the overall separation between ownership and control is higher in family firms than in founder-controlled firms. This is also the case for the separation between vote and share ownership, but not for the separation between vote ownership and control, which is substantially higher for founder-controlled firms (0.6% as compared to 0.1% for second or later generation firms). As explained earlier in the paper, the wedge between share and vote ownership is attributable to dual-class stock, while the wedge between vote ownership and control is attributable to pyramids and voting agreements. The difference between founder-controlled firms and family firms in the relative prevalence of each mechanism among them suggests a possible causal relationship between the choice of mechanism at the founder stage and the likelihood of survival of family control. Namely, it is plausible that founders who wish to perpetuate family control over subsequent generations choose dual-class stock, whereas those who do not opt for pyramids and voting agreements. Unfortunately, data limitations prevent us from empirically testing this explanation.[16]

The results in Panel A of Table 6 also raise the question of whether founders use pyramids and voting agreements with relatively greater frequency, and/or with a relatively greater impact on control enhancement than their descendants. Likewise, there is a question as to whether family firms use dual-class stock with higher frequency or with a higher impact than founder-controlled firms.

The answer is given in Panel B of Table 5, which reports the average wedges attained by companies that use one or more control-enhancing mechanisms; 62 firms (30% of the sample) use one or more control-enhancing mechanisms at some point during our sample period. Founding families' control rights in these firms are twice as large as their cash-flow rights; the difference is 13.7%. The 62 firms include 21 founder-controlled firms, or 21% of all such firms, and 42 family firms, or 36% of all such firms (one firm is included in both groups). Therefore, family firms use control-enhancing mechanisms with relatively higher frequency. However, the wedge between ownership and control, and both of its components, is larger in founder-controlled firms. Conditional on using some form of control-enhancing mechanism, founders' voting control exceeds their equity stake by an average of 16.2%, or 2.37 times. Descendants' voting control exceeds their equity stake by 12.4%, or 1.82 times. The contrast is particularly striking for the separation between vote ownership and control that is achieved through the use of pyramids. Here the wedge attained by founders (9.8% measured as a difference) is one order of magnitude larger than what is attained by descendants (0.9%).

Panel C of Table 6 reports the average wedge created by each of the three mechanisms in the companies that use them. Dual-class shares with differential voting rights are the dominant way of increasing founding families' voting control, not just in their incidence but also in their impact on control: the average wedge between cash-flow and voting rights for the 184 dual-class firm-years where the wedge is positive is 20.5%, or 2.55 times. Voting agreements and pyramids are significantly less powerful contributors to the wedge between cash-flow and control rights: the average wedges they create for the families that use them are, respectively 6.5% and 6.2% when measured as differences, or 1.5 and 1.31 when measured as ratios.

The finding that family firms are more frequent users of control-enhancing mechanisms, particularly of dual-class stock, is consistent with the notion that later-generation families implement these mechanisms to reduce the adverse effect on family control that naturally arises from firm growth and family succession. The fact that founder-controlled firms with control-enhancing mechanisms are able to extract a greater wedge suggests an alternative explanation, however: Founders may be the ones who set up these mechanisms, and doing so helps perpetuate family control over subsequent generations.

To see which of these two explanations seems more plausible, we look again into the histories of the dual-class structures in our sample. Of the 52 companies where the dual-class structure was set up by the founding family, in 32 it was set up by the founders, in 14 it was set up by the second generation, and in 6 it was set up by the third or later generation. Among those, 21, 11, and 6, respectively, or 38 firms in total, remained under family control in 2000. In the absence of sufficient information to perform more formal tests, we interpret these figures as being more supportive of the second explanation.

4.2 Governance mechanisms that enhance family control

In addition to the use of dual-class stock, voting agreements, and pyramids, founders and their families can enhance control of their companies through their presence in the board and top management positions, and through governance provisions that limit the rights of public shareholders. Table 7 reports on the usage of these governance mechanisms in founder- or family-controlled firms.

Panel A of Table 7 shows that the fraction of founding family members or family representatives on the board averages 17.3% for the full sample of founder- or family-controlled

firms; 16% for founder-controlled firms and 18.3% for family firms. Family representation among outside directors (i.e., directors who are not also managers) is lower (10%), yet is much higher among inside directors (41%), particularly in founder-controlled firms (44.9%). When there is a nominating committee, founding family representation in it averages 19.1%, and is particularly high for family firms. The governance index, which is a count of the number of governance provisions in the firm's charter, bylaws, or SEC filings that reduce shareholder rights [Gompers, Ishii, and Metrick (2003)], averages 9.38% and is higher in family firms than in founder-controlled firms. A higher index implies weaker corporate governance, at least in an antitakeover and insider entrenchment sense, which is what most of the provisions in the index are about. The difference across founder-controlled and family firms in their corporate governance practices therefore contrasts with our finding that founder-controlled firms have a greater wedge between ownership and control created by dual-class stock, voting agreements, and pyramids, despite their relatively less frequent use of these mechanisms.

Table 7 also shows that the founder or a family member serves as the CEO in 600 out of 1,183 founder or family firm-years (51% of the sample), and as chairman of the board and/or CEO in 703 (59%). Both counts are higher in founder-controlled firms than in family firms, in absolute and in relative terms: Of the 540 founder-controlled firm-years, 323 (60%) have a founder-CEO and 381 (71%) have a founder-chairman or CEO; of the 643 family firm-years, 277 (43%) have a family-CEO and 322 (50%) have a family-chairman or CEO. We note that a founder- or family-controlled firm's generation refers to the latest one found among its officers or directors. Hence, some of the family-CEOs or chairmen in those firms may be the firm's founder, if a descendant serves as an officer or director.

Of special relevance for the purpose of our study is the fact, already observed in Table 5, that the fraction of founding family members or family representatives on the board is often greater than the percentage of shares owned by the family, and can be even greater than the percentage of votes controlled by the family, thus enhancing family control over and above its voting control. Panel A of Table 7 shows that, on average across the entire sample of founder- or family-controlled firms, the fraction of board seats controlled by the founder or family exceeds the percentage of shares it owns by 2%, yet is smaller than the percentage of votes controlled by –1.9%. Panel B of the same table shows, however, that in most cases where the fraction of board seats controlled by the founding family exceeds the percentage of shares they own, that fraction also exceeds the percentage of votes controlled (705 out of 755 cases), what we refer to as disproportionate board representation. The average wedge of director election rights over voting control rights for those firms ($B - C$) is 10%.

5. Impact of Control-enhancing Mechanisms on Firm Value

In this section we explore whether and how the impact of control-enhancing mechanisms on firm value differs across mechanisms. The negative value impact of family control in excess of share ownership was first documented by Claessens, Djankov, Fan, and Lang (2002) for East Asia, by Villalonga and Amit (2006) for the U.S., and by Barontini and Caprio (2006) for Continental Europe, and can be interpreted as evidence that stock markets place a discount on large shareholders' potential appropriation of private benefits of control.

There is little evidence, however, about which of these mechanisms may be driving the results. Claessens. Djankov, Fan, and Lang (2002) test for the differential impact of dual-class shares, pyramids, and cross-holdings by regressing q on dummy indicators for each mechanism,

but find no significant impact on value of any of the three dummies. Bennedsen and Nielsen (2008), using Faccio and Lang's (2002) European sample, test for the impact on *q* of interactions between dummies for each mechanism and the total control-ownership wedge achieved by controlling owners of firms. They find the effect to be more negative and significant for dual-class shares than for pyramids and cross-ownership. Both of these approaches are problematic, though, as our earlier example of Cox Communications illustrates. In Cox, a large fraction of the total (*C* – *O*) wedge of 10.67% is due to the use of dual-class shares, which are responsible for the 9.48% (*V* – *O*) wedge. Only the remaining 1.19% (*C* – *V*) wedge is due to pyramids. Using either dummies or interactions of dummies with the total wedge would give equal weight to both mechanisms; the interaction approach would attribute the total wedge of 10.67% to dual-class shares and the same amount to pyramids, thus overstating the benefits (in terms of enhanced control) that families achieve through these mechanisms (particularly pyramids, in the case of Cox), and distorting the estimates of the mean effect of each mechanism on firm value.

We solve this problem by using our wedge decomposition framework to estimate the effect of each mechanism on firm value. In this way, we are able to isolate the contribution of each mechanism to *q* while controlling for the possible presence of other mechanisms in the same firm. Following earlier studies of ownership and performance since Morck et al. (1988), we use Tobin's *q*, proxied by the firm's market-to-book ratio, as our dependent variable in multivariate OLS regressions, and interpret it as a measure of corporate value. We use the market value of common equity plus the book value of preferred stock and debt as a proxy for the firm's market value. For firms with multiple share classes, including at least one class that is not publicly traded, we compute the market value of common equity as the product of the total number of shares outstanding of all classes, by the share price of the traded shares. The approach

amounts to valuing a firm's nontradable stock at the same price per share as its tradable stock; equivalently, it assumes that the control premium and illiquidity discount that nontradable shares with superior voting rights deserve cancel each other.

To control for industry and time effects, we adjust our dependent variable by constructing it as the difference between the firm's q and the asset-weighted average of the imputed qs of its segments, where a segment's imputed q is the industry average q, and q is measured as before. We compute industry averages at the most precise SIC level for which there is a minimum of five single-segment firms in the industry-year. Similar results are obtained if we control for industry in a more crude way, such as using 2-digit industry or sector (1-digit) dummies.

Our key independent variables are the measures of additional control obtained through dual-class stock, voting agreements, pyramids, and disproportionate board representation. Because these variables exhibit very little time-series variation, we abstain from using firm fixed effects. However, we use clustered standard errors to control for intra-firm correlation.

We also include, as measures of additional founding family control, dummies indicating the presence of a family-CEO or chairman, the governance index of Gompers, Ishii, and Metrick (2003), the percentage of shares owned by non-family blockholders, and the excess (or deficit) of vote ownership by non-family blockholders relative to their share ownership. In addition, our regression controls include measures of the firm's stock market risk (systematic and idiosyncratic), which we estimate using CRSP data, corporate diversification (a dummy indicating if the firm has more than one segment), capital expenditures relative to fixed assets, dividends as a fraction of book equity, debt relative to the market value of equity, and the logarithm of assets as a measure of firm size (all from Compustat).

Tables 8 and 9 report the regression results for the full sample and for founder- or family-controlled firms only, as well as for the founder-controlled and family-controlled sub-samples. The only difference between the analyses reported in both tables is in the measurement of the wedge obtained through the four control-enhancing mechanisms. In Table 8, the wedge measures are computed as differences, while in Table 9 they are computed as ratios. The disproportionate board representation ratio has some extreme values at the top of its distribution, arising from the greater indivisibility of board seats relative to equity. For instance, the first year that Steve Jobs returned to Apple as CEO (1998), he had only one share of common stock out of a total of 132,761,530 shares outstanding, and was one of the six directors on the board, which translates into a disproportionate board representation ratio of 22,126,922. To normalize the variable, we winsorize the ratio at the top 5% by making all values that are greater than 10 equal to 10.

The results in both tables support our hypotheses about the differential impact of the various control-enhancing mechanisms on firm value. As predicted, dual-class stock has a negative impact on value, whereas voting agreements and pyramids have a positive effect. Disproportionate board representation has a negative impact on value, but it is not statistically significant. The sign of the coefficients is robust to the measure of the wedge used, but the significance changes for some variables, including the control-enhancing mechanisms. In particular, dual-class stock is only statistically significant when the wedge it creates is measured as a difference, while voting agreements is only significant when the wedge they create is measured as a ratio. The effect of pyramids is significant regardless of the measure used.

The negative impact of dual-class shares on value sheds further light on Villalonga and Amit's (2006) finding of a negative impact on value of the wedge between cash-flow and voting rights. As can be expected from the prevalence of dual-class stock over other mechanisms

reported in Table 6, the results in Table 8 confirm that dual-class stock is the main driver of the negative impact documented by Villalonga and Amit (2006). The result is also consistent with Gompers, Ishii, and Metrick (2008), who find a positive value impact of insider share ownership in U.S. dual-class firms, but a negative impact of their fractional vote ownership, and with earlier evidence by Lease, McConnell, and Mikkelson (1983), Zingales (1995), and Nenova (2003) of a premium to supervoting shares in the U.S., which is usually interpreted as a proxy for the private benefits of control that large shareholders or insiders can extract from the firm. We find that the negative effect of dual-class stock on value is not significant among family firms, however. One possible explanation for this finding is that, in these firms, the presence of control-enhancing mechanisms may not convey such a strong signal of the founder or family's desire to expropriate public shareholders as it does of family resistance to the dilution of their controlling stake when the firm grows.

More unique to this paper is the finding that two control-enhancing mechanisms have a positive effect on value despite the wedge they introduce between the family's cash-flow and control rights. One of them is pyramidal ownership, which is generally pooled with dual-class shares among the mechanisms that can enable the appropriation of private benefits of control. As argued above, however, while pyramids can and sometimes do lend themselves to the expropriation of public shareholders through tunneling practices [Johnson, La Porta, López de Silanes, and Shleifer (2000); and Bertrand, Mehta, and Mullainathan (2002)] they can also exist for more legitimate purposes, such as those suggested by Morck (2005) and Almeida and Wolfenzon (2006), and can even have a positive effect on firm value when the intermediate entity is privately held.

We note, however, that the fact that only 11 firms have pyramidal ownership in our sample makes it difficult to generalize our finding of a positive value effect beyond our sample, and also to ascertain the specific causes of it. Two of the 11 firms have a clear business explanation different from the enhancement of founder or family control. In MascoTech (later renamed Metaldyne), Richard Manoogian controlled between 9% and 15% over our sample period, through a combination of dual-class shares and a pyramid with one intermediate public corporation, Masco Corporation, which Manoogian's father founded in 1929. MascoTech Inc. was spun-off from Masco in 1984. Cox Communications, whose structure is depicted in Figure 4, is the cable business of the Cox family's private media conglomerate, Cox Enterprises. Cox Communications became public in 1995 as part of a takeover of The Times Mirror Company, but was taken private again by the Cox family in 2004 (after our sample period ends).

In the example of CBS discussed earlier, family control appears to be the primary explanation. Larry and Bob Tisch used their family conglomerate Loews to acquire a controlling stake in CBS in 1986, ending a takeover battle for the company's control. Larry assumed the CEO role (and later, those of president and chairman as well), until the brothers exited their investment when CBS was acquired by Westinghouse Electric Corporation in 1995. In the remaining firms with pyramidal ownership structures, the pyramid is facilitated by either a holding corporation, which does not seem to fit with any of the more legitimate business explanations, or by a corporation whose name and nature cannot be identified from the proxy.

Voting agreements also have a positive effect on value, although this is likely due to very different reasons. As noted earlier, the literature on blockholders has often highlighted the dark side of coalitions—the potential appropriation of partial benefits of control [Zwiebel (1995)] —, but some models suggest that these coalitions may be beneficial for firm value due to positive

ex-ante incentives [Bennedsen and Wolfenzon (2000)] and to ex-post bargaining problems among controlling shareholders that make the appropriation or private benefits of control costly [Gomes and Novaes (2005)]. The evidence on which of these two effects prevails remains mixed. For instance, Faccio, Lang, and Young (2001) find that the presence of multiple large shareholders dampens expropriation in Europe, but exacerbates it in Asia.

We are able to throw light onto this question by distinguishing between actual coalitions (the voting agreements in our sample) and potential but unrealized coalitions with other large blockholders. We find that, while the effect of voting agreements on firm value is positive, the percentage of shares owned (and independently controlled) by non-family blockholders has a negative effect, which is significant for all firms except for those that are family-controlled. Moreover, the wedge between votes and shares owned by these blockholders also has a negative effect on value, particularly significant for founder- or family-controlled firms (in Table 8) and for founder-controlled firms (in Table 9). Our results therefore support the theoretical arguments in favor of coalitions. In our sample, the coalition members are the founding families and the shareholders that cede them or share with them voting power over their shares. Even when the voting power is ceded completely, as is Warren Buffett's case in the The Washington Post Co., the non-family shareholder retains full dispositive power over his or her shares, so the family remains committed to not undertake unilateral actions.

As a caveat to the interpretation of our results, we acknowledge that the choice of one mechanism or another by founding families is endogenous, which raises the possibility of reverse causation. For example, establishing a pyramid or a voting agreement requires a non-family investor to explicitly opt in, unlike dual-class stock and disproportionate board representation, which can be unilaterally adopted by a founding family subject only to legal constraints. Thus,

an alternative explanation for our results could be that informed investors will only choose to co-invest or pool their votes with a founding family when faced with good investment opportunities (high-performing firms).

Unfortunately, we are unable to formally rule out this or any other reverse causation explanations since, with only one exception, the control-enhancing mechanisms we observe are already in place at the beginning of our sample period.[17] For instance, many dual-class structures date back to the 1980s dual-class recapitalization wave, and some, like Navistar International Corporation or General Motors Corporation, go as far back as 1907 or 1908.

6. Conclusion

This paper contributes to the corporate governance literature in three main ways. First, we bridge the two strands of research that have analyzed control-enhancing mechanisms before us—studies of dual-class stock and studies of ultimate ownership—by providing a framework that unifies and reconciles the different measures used in the two strands. Our wedge decomposition framework accommodates dual-class stock and pyramids, as well as two other mechanisms that have been largely overlooked in prior literature, yet which we find to be of comparable or even greater relevance to the others, at least in the U.S.: voting agreements and disproportionate board representation.

Second, we uncover significant new evidence about ownership and control of U.S. corporations. We find that founding families are the only blockholders whose control rights on average exceed their cash flow rights, and use our wedge decomposition framework to analyze how this separation is achieved. We document the prevalence of indirect ownership through trusts, foundations, limited partnerships, and other corporations. Yet, unlike in other countries

where pyramidal control is common, we find that indirect ownership in the U.S. seldom creates a wedge between the founder or family's cash-flow and control rights (i.e., a pyramid). Rather, dual-class shares and voting agreements among shareholders are the primary sources of this wedge. Family control is also frequently enhanced through board representation in excess of voting control, and through the presence of a family member as CEO or chairman of the board.

Third, we show that not all mechanisms have a similarly negative impact on value, as earlier research assumes. Our results indicate that only the excess control that founders or their families are able to obtain over and above their equity stake through dual-class stock and disproportionate board representation comes at the cost of reduced firm value.

There are, however, several compensating advantages that we cannot measure with our data. One is the non-pecuniary benefits that often come with control, such as power, political influence, or social status. Another are the personal diversification benefits that founders or their families gain by not being invested in their companies' equity to the full extent of their controlling stake. Because of the difficulty of measuring this advantage (which would require knowledge of the family's investments outside the firm), as well as private benefits of control, the net effect for founding families of using these mechanisms remains unknown.

On the other hand, there seems to be no cost for founders and their families, but rather, an additional benefit in terms of increased firm value, from using voting agreements or pyramids to enhance their control. Our findings therefore suggest that controlling families in U.S. firms can reduce the costs of control-enhancing mechanisms for both themselves and public shareholders through their choice of mechanisms.

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FOOTNOTES

[1] A different viewpoint is articulated by Zwiebel (1995), who argues that blockholders in a coalition can extract partial benefits of control from smaller shareholders. Such behavior would imply an adverse effect on firm value.

[2] If family shareholders are aggregated into one unit, as we do in this study, "sole form" also includes those shares or votes that are shared within the family or with family representatives, such as co-trustees.

[3] We exclude shared investment power from the definition of share ownership because there are only two companies where we find shared investment power between family and non-family shareholders: Ralston Purina Company and Anixter International. In both cases we attribute 50% of the investment power to the family shareholder(s). In Ralston Purina, brothers Donald Jr. and William Danforth share investment and voting power over a fraction of their shares with an institution that changes over the years (first Boatmen's Bancshares, then Nation's Bank, and later Bank of America). In Anixter, a large fraction of the shares attributed to founder Samuel Zell in the proxy are held by three limited partnerships. The general partners are the Samuel Zell Revocable Trust and the Robert H. and B. Ann Lurie Trust, of which Ann Lurie, the widow of cofounder Robert Lurie, is a trustee. A change in the company's ownership structure in 1998 reveals that Zell and Lurie were indeed 50/50 partners.

[4] When there is more than one founder, either because there were two or more cofounders of the firm or because our sample firm is the outcome of a merger of family firms, we consider as the founding family the one with the largest voting stake.

[5] The one exception is Cardinal Health, whose predecessor firm Cardinal Foods was acquired through an LBO by Robert Walter, yet he is generally perceived as Cardinal's founder after he shifted the company's core business to health services.

[6] Recall that less than 100% ownership is required for indirect ownership to create a wedge between votes owned and controlled. For instance, Sumner Redstone owns almost all of his stock in Viacom Inc. through National Amusements, Inc., a company founded by his father that owns between 61% and 85% of the votes in Viacom during our sample period. While Sumner Redstone controls only two-thirds of National Amusements, his two children each control a sixth. Thus the Redstone family controls 100% of National Amusements, and there is no additional wedge created by the indirect ownership structure over and above the wedge created by dual-class shares. Hence we do not classify Viacom as a pyramid.

[7] We thank an anonymous referee for suggesting this point.

[8] Industry-adjusted q is negative for the entire sample because it has been computed using all firms in Compustat and our sample firms are the largest among them.

[9] Zingales (1995) attributes this clustering to the American Stock Exchange listing requirement, dating back to the admission of Wang Labs in 1976, that dual-class stock firms have voting ratios greater or equal to 1:10.

[10] The 139 family firms controlled at least partially via trusts represent 27% of the entire sample of 515 firms. Gadhoum, Lang, and Young (2005), who examine family trusts as a separate category of ultimate owners, report that 13.55% of U.S. corporations are controlled through family trusts at the 10% threshold, or 7.01% at the 20% threshold. They note that their estimate "must be regarded as conservative [since] we counted shares as belonging to one family block only if the registered owners carried the family name."

[11] With respect to the transfer of company stock, a trust enables its creator or grantor to distribute the various rights associated to the stock among three different groups of people or institutions: trustees, income beneficiaries, and remainderpersons. Trustees typically have management rights (i.e., they are the listed owners of the stock (as trustees) and have the rights to vote the stock make any decisions to sell it, and redeploy the proceeds of sale to other investments). Income beneficiaries are entitled to receive some or all of the income generated by the principal or corpus (the stock), as stipulated by the grantor in the trust indenture. Remainderpersons are entitled to the property remaining in the trust at the time the trust ends.

[12] The only funds in the sample are the Alden and Vada Dow Fund in Dow Chemical Company, the Conrad N. Hilton Fund in Hilton Hotels and Park Place Entertainment (a spinoff of Hilton Hotels), the Ingram Charitable Fund in Ingram Micro, and the Golden Family Charitable Fund in *The New York Times* (Michael Golden is a member of the founding family Ochs-Sulzberger). The only endowments are the Howard Heinz Endowment in H.J. Heinz Co. and the Lilly Endowment at Eli Lilly & Co. Most of these companies also have family foundations.

[13] See Reiling and Conneely (2006). The other type of foundation regulated by the Internal Revenue Code are *public charities*—community foundations and those nonprofit charitable organizations that raise public funds to conduct their programs and operations.

[14] In all three types of corporation, and unlike in partnerships and sole proprietorships, the owners are personally protected from liability, and can be outlived by the corporation itself. The key difference between the different forms of corporation is in their tax treatment, since C-corporations are tax-paying entities, whereas S-corporations and LLCs are flow-through entities like partnerships and sole proprietorships. In general partnerships, each of the partners is jointly and severally liable (i.e., a damaged party may pursue any or all of the partners for any amount, not necessarily in proportion to invested capital or the distribution of earnings). In limited partnerships, general partners assume the management responsibility and unlimited liability, whereas limited partners have no voice in management and are only liable for the amount of their capital contribution plus any other debt specifically accepted. [See Roberts (2004) for greater detail.]

[15] In contrast, Gadhoum, Lang, and Young (2005) report that 8.46% of U.S. corporations in 1996 were controlled through pyramids by their controlling shareholders at the 10% control threshold, which not only include families. (A 10% control threshold would eliminate 13 of the 56 firm-years controlled via pyramids in our sample, including all seven years for one firm, so the fraction of our sample that is comparable to Gadhoum et al.'s is 1.4% of all firm-years or 1.9% or all firms.) While their sample includes smaller firms than ours and their definition of family firms is broader (e.g., it includes non-founding families, as well as unlisted companies whose ultimate owners they cannot identify), their reported percentage of family firms is similar to ours (36.6% at the 10% threshold), which rules out sample differences as a major explanation for this discrepancy. Two other explanations are plausible, First, the bulk of the pyramids in their sample are perhaps attributable to the 23% of controlling shareholders in their sample that they do not classify as families. Second, our careful database construction enables us to (a) eliminate any double- and multiple-counting of family shareholdings, which can only be done by coding manually the information in proxy footnotes; and (b) distinguish "true" pyramids from instances of indirect ownership that do not create any leverage in control, which is difficult to do without drawing the picture of every indirect ownership structure in the sample. To our knowledge, the data collection process in Gadhoum et al.'s study involves neither of these two steps.

[16] We are grateful to an anonymous referee for suggesting this explanation.

[17] The exception is Micron Technology Inc., which issued a new class of non-voting common stock in 1999 that disappeared in 2000. There are also three instances of control-enhancing mechanisms that existed at the beginning of our sample period and were later eliminated: CHS Electronics Inc. and Cardinal Health had voting agreements that disappeared in 1997 and 1999, respectively; In Carnival, super-voting share class B, which was 100% held by Micky Arison, disappeared in 1997 through the conversion of his entire B-shares holding into A-shares.

Table 1
Summary statistics for founder- or family-controlled firms and non-family firms

	[a] All Firms	[b] Founder- or family-Controlled Firms	[c] Non-Family Firms	Diff. in Means [b] - [c]	[d] Founder-Controlled Firms	[e] Family Firms	Diff. in Means [d] - [e]
Tobin's *q*	2.00	2.13	1.91	0.22 *	2.47	1.84	0.63 ***
	1.55	*1.75*	*1.41*	(1.69)	*2.38*	*0.82*	(2.88)
Industry-Adjusted *q*	-0.33	-0.12	-0.46	0.34 ***	0.19	-0.38	0.57 ***
	1.39	*1.53*	*1.26*	(3.11)	*1.98*	*0.95*	(3.08)
Assets ($ millions)	9,313	7,615	10,415	-2,800	6,287	8,731	-2,444
	21,206	*21,563*	*20,903*	(-1.40)	*10,400*	*27,613*	(-0.82)
Sales ($ millions)	9,108	7,816	9,946	-2,130	6,428	8,981	-2,553
	16,296	*16,333*	*16,221*	(-1.40)	*7,510*	*20,996*	(-1.14)
Firm Age since Founding	70.4	61.7	76.1	-14.4 ***	35.4	83.9	-48.5 ***
	41.7	*39.1*	*42.3*	(-3.89)	*26.1*	*34.1*	(-11.5)
Sales growth	0.16	0.21	0.13	0.08 ***	0.30	0.13	0.18 ***
	0.61	*0.76*	*0.48*	(2.77)	*0.80*	*0.72*	(3.46)
ROA	0.11	0.11	0.11	0.01	0.12	0.11	0.01
	0.07	*0.07*	*0.07*	(1.45)	*0.08*	*0.05*	(1.10)
Debt/Mkt Value of Equity	0.46	0.37	0.52	-0.15 ***	0.36	0.38	-0.02
	0.97	*0.76*	*1.08*	(-2.75)	*0.92*	*0.59*	(-0.26)
Market Risk (Beta)	1.05	1.08	1.02	0.06 **	1.19	1.00	0.19 ***
	0.43	*0.43*	*0.43*	(1.98)	*0.48*	*0.35*	(3.73)
CAPX/PPE	0.23	0.26	0.22	0.04 ***	0.31	0.21	0.10 ***
	0.22	*0.30*	*0.14*	(3.14)	*0.41*	*0.13*	(4.06)
Number of Firm-Years	3006	1,183	1,823		540	643	
Number of Firms	515	210	333		101	117	

Means, standard deviations (in italics), and tests of differences in means between the two groups of firms' characteristics. Founder- or family-controlled firms are defined as those where one or more founding family members are officers or directors or own 5% or more of the firm's equity either individually or as a group. Tobin's *q* is measured as the ratio of the firm's market value to total assets. For firms with non-tradable share classes, the non-tradable shares are valued at the same price as the publicly traded shares. Generation refers to the latest generation of founding family members that are officers, directors, or blockholders; equals one for the founder's generation, two for the founder's children, etc. ROA is measured as the ratio of operating income after depreciation to total assets. The governance index is the number of governance provisions in the firm's charter, bylaws, or SEC filings that reduce shareholder rights [Gompers, Ishii, and Metrick (2003) measure]. Beta is the estimate from a market model in which the firm's monthly returns over the past five years are regressed on the S&P 500 monthly returns. Idiosyncratic risk is the standard error of the estimate from the market model. Diversification equals one if the firm has two or more segments in Compustat, zero otherwise. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000. *t*-statistics are based on clustered (by firm) standard errors from OLS regressions of each variable on a founding family firm dummy, and appear in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Table 2
Dual-class stock statistics for founder- or family-controlled firms and non-family firms

	All Firms	Founder- or family-Controlled Firms	Non-Family Firms	Founder-Controlled Firms	Family Firms
Panel A: Frequency of Use					
Number of Firm-Years (Firms) with Two or More	304	188	116	62	126
Common Share Classes—Dual-Class Firms	(64)	(41)	(25)	(16)	(25)
Of Which:					
- At Least One Common Class is Not Publicly Traded	214	148	66	49	99
	(49)	(31)	(20)	(11)	(20)
- Superior Voting Class is Not Publicly Traded	120	96	24	20	76
	(26)	(20)	(8)	(5)	(15)
Panel B: Voting Arrangements					
1. Mean (*Median*) Voting Ratio—Inferior-to-Superior	0.41	0.31	0.58	0.41	0.26
In Firms with Two or More Common Share Classes	*0.15*	*0.10*	*0.60*	*0.10*	*0.10*
2. Number of Dual-Class Firm-Years in Which:					
- One Common Class is Non-Voting	55	39	16	17	22
- Voting Ratio = 1:10	68	67	1	13	54
- Voting Ratio > 1:10	63	18	45	3	15
- Voting Ratio < 1:10	21	18	3	6	12
- Voting Rights Only Differ for Election of Directors	49	35	14	21	14
- No Difference in Voting Rights across Classes	48	11	37	2	9
3. Mean of Min. % Shares Needed to Own 20% of Votes	15.7	13.12	17.53	13.72	12.90
Panel C: Dividend Characteristics					
1. Mean (*Median*) Common Dividend Ratio	0.89	0.91	0.85	0.95	0.90
—Inferior-to-Superior—in Dual-Class Firms	*1*	*1*	*1*	*1*	*1*
2. Number of Dual-Class Firm-Years in Which:					
- Superior Voting Class Dividend is Lower	28	25	3	7	18
- Superior Voting Class Dividend is Higher	26	10	16	0	10
- No Difference in Dividends across Classes	250	153	97	55	98

Voting and dividend characteristics of dual share class structures used by founder- or family-controlled firms and by non-family firms. Voting ratio is the ratio of votes per share between a firm's inferior and superior voting classes. Lower ratios are indicative of higher deviations from the one-share, one-vote norm. Nonvoting preferred share classes are excluded from the computation of mean and median voting ratios in the first row of Panel B. All preferred share classes are excluded from the computation of voting ratios in the rest of first row of Panel B, and from the computation of dividend ratios in Panel C. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000.

Table 3
Ownership of shares and votes by founding families, other individuals, and institutions

	Founder- or family-Controlled Firms				Non-Family Firms			
	% Shares Owned *(O)*		% Votes Owned *(V)*		% Shares Owned *(O)*		% Votes Owned *(V)*	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Founding Family	15.3%	17.1%	18.8%	22.7%	—	—	—	—
- Founder-Controlled Firms	14.4%	15.3%	17.1%	20.1%	—	—	—	—
- Family Firms	16.1%	18.5%	20.3%	24.6%	—	—	—	—
Non-Family Blockholders	16.2%	22.4%	13.2%	16.5%	22.1%	24.9%	18.8%	24.5%
a) Individual Blockholders	2.5%	13.4%	2.1%	7.3%	0.8%	4.2%	0.8%	4.2%
- Cofounders	0.2%	1.4%	0.2%	1.4%	—	—	—	—
- Other Individual Blockholders	2.4%	13.3%	1.9%	7.1%	0.8%	4.2%	0.8%	4.2%
b) Institutional Blockholders	13.7%	14.8%	11.2%	14.7%	21.3%	25.7%	18.0%	24.2%
- Mutual and Pension Funds	6.1%	8.7%	4.1%	8.3%	8.5%	12.5%	5.5%	9.5%
- Other Institutional Blockholders	7.6%	12.3%	7.1%	12.4%	12.8%	23.4%	12.5%	23.1%

Shares owned refers to shares held with investment power by the founder, family, or blockholder, in sole form, as a percentage of total shares outstanding. Votes owned refers to the votes associated to the shares held with voting power by the founder, family or blockholder, in sole form, as a percentage of total votes outstanding. Founder- or family-controlled firms are defined as those where one or more founding family members are officers or directors or own 5% or more of the firm's equity either individually or as a group. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000.

Table 4
Investment vehicles in U.S. founder- or family-controlled firms

	No. of Firms Using Vehicle		Mean % of All Shares Owned by Founding Family *(O)*		Mean % of Votes Controlled by Founding Family *(C)*		Total Value of Founding Family Holdings ($B)	
	Firms	Firm-Years	Pure Form	Pure or Hybrid Form	Pure Form	Pure or Hybrid Form	Pure Form	Pure or Hybrid Form
Direct Ownership	201	1137	62.1%	—	61.8%	—	119	—
Indirect Ownership via:	168	875	37.9%	—	38.2%	—	121	—
- Trust	139	682	17.0%	19.7%	17.1%	19.8%	34.4	39.7
- Foundation	77	340	4.6%	5.3%	4.3%	5.0%	4.56	5.58
- Corporation	55	271	8.2%	10.3%	8.5%	10.6%	23.5	27.8
- Limited Partnership	39	148	4.7%	6.0%	4.7%	6.0%	51.8	56.5
- Hybrid	—	—	3.4%	—	3.6%	—	6.74	—
Total Direct and Indirect	210	1183	100%	—	100%	—	240	—

Shares owned refers to shares held with investment power by the founder, family, or blockholder, in sole form, as a percentage of total shares outstanding. Votes owned refers to the votes associated to the shares held with voting power by the founder, family, or blockholder, in sole form, as a percentage of total votes outstanding. Votes controlled refers to the votes associated to the shares held by the founder, family, or blockholder with voting power, in sole or shared form, as a percentage of total votes outstanding, plus any additional voting control resulting from pyramidal ownership (measured by the weakest link in the chain of control). Trusts include voting trusts, charitable and non-charitable trusts, and any other forms of trust. Foundations include charitable funds and endowments, as well as foundations. Corporations include both limited liability corporations and C-corporations, and range from pure holdings to corporations with business activities. Hybrids are ownership structures that include multiple, non-separable, investment vehicles. Total value of family holdings is summed across all companies and averaged over the full sample period. Founder- or family-controlled firms are defined as those where one or more founding family members are officers or directors or own 5% or more of the firm's equity either individually or as a group. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000. The founding family firms sub-sample comprises 1,183 firm-year observations of 210 firms.

Table 5
Frequency of control-enhancing mechanisms in U.S. founder- or family-controlled firms

	All Founder- or family-Controlled Firms		Founder-Controlled Firms		Family Firms	
	Alone or Combined	Alone	Alone or Combined	Alone	Alone or Combined	Alone
Single Mechanisms						
Dual-Class Stock	184	91	56	26	128	65
	(44)	(23)	(15)	(7)	(29)	(16)
Voting Agreements	62	19	21	8	41	11
	(15)	(7)	(8)	(3)	(7)	(4)
Pyramids	56	12	26	2	30	10
	(11)	(4)	(5)	(1)	(6)	(3)
Disproportionate Board Representation	705	615	299	275	406	340
	(139)	(129)	(64)	(62)	(78)	(70)
Two-Mechanism Combinations						
Dual-Class Stock + Voting Agreements	5	4	5	4	0	0
	(3)	(2)	(3)	(2)	(0)	(0)
Dual-Class Stock + Pyramids	12	8	6	2	6	6
	(3)	(2)	(2)	(1)	(1)	(1)
Dual-Class Stock + Disproportionate Board Rep.	43	38	11	6	32	32
	(15)	(13)	(5)	(3)	(10)	(10)
Voting Agreements + Pyramids	8	2	2	2	6	0
	(2)	(1)	(1)	(1)	(1)	(0)
Voting Agreements + Disproportionate Board Rep.	33	26	6	5	27	21
	(7)	(6)	(2)	(2)	(5)	(4)
Pyramids + Disproportionate Board Rep.	25	15	12	8	13	7
	(4)	(4)	(2)	(2)	(2)	(2)
Three-Mechanism Combinations						
Dual-Class + Voting Agreements + Pyramids	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)
Dual-Class + Voting Agreements + Disp. Board Rep.	1	1	1	1	0	0
	(1)	(1)	(1)	(1)	(0)	(0)
Dual-Class + Pyramids + Disp. Board Rep.	4	4	4	4	0	0
	(1)	(1)	(1)	(1)	(0)	(0)
Voting Agreements + Pyramids + Disp. Board Rep.	6	6	0	0	6	6
	(1)	(1)	(0)	(0)	(1)	(1)

This table shows the number of firm-years (firms) in which different control-enhancing mechanisms are used. Dual-class stock refers to voting structures in which the firm has issued two or more classes of stock with differential voting rights, excluding nonvoting preferred stock. Voting agreements refer to pacts among shareholders that result in the founder or family holding voting power over a larger number of shares than what they own with investment power. Pyramids refer to control structures where the founder or family hold their shares of the firm indirectly, through one or more investment vehicles in which the founder or family own less than 100% but more than 20%. Disproportionate board representation refers to the fact that the fraction of the board elected by the founding family exceeds the family's voting control. Founder- or family-controlled firms are defined as those where one or more founding family members are officers or directors or own 5% or more of the firm's equity either individually or as a group. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000. The founding family firms sub-sample comprises 1,183 firm-year observations of 210 firms.

Table 6
Wedge created by different control-enhancing mechanisms in U.S. founder- or family-controlled firms

	Firms	Firm-Years	% Votes Owned Minus % Shares Owned *(V – O)*	% Votes Controlled Minus % Votes Owned *(C – V)*	% Votes Controlled Minus % Shares Owned *(C – O)*	% Votes Owned to % Shares Owned Ratio *(V/O)*	% Votes Controlled to % Votes Owned Ratio *(C/V)*	% Votes Controlled to % Shares Owned Ratio *(C/O)*
Panel A: All Founder- or family-Controlled Firms								
Founder-Controlled	101	540	2.7%	0.6%	3.2%	1.24	1.03	1.27
Family-Controlled	117	643	4.3%	0.1%	4.4%	1.29	1.00	1.29
Total	210	1183	3.6%	0.3%	3.9%	1.27	1.01	1.28
Panel B: Founder- or family-Controlled Firms Using One or More Control-Enhancing Mechanisms								
Founder-Controlled	21	87	16.6%	9.8%	16.2%	2.51	1.49	2.37
Family-Controlled	42	190	13.0%	0.9%	12.4%	1.86	1.02	1.82
Total	62	277	14.0%	4.7%	13.7%	2.05	1.22	2.00
Panel C: Usage of Control-Enhancing Mechanisms by Type								
Dual-Class Stock	44	184	20.5%	0.0%	20.5%	2.55	1.00	2.55
Voting Agreements	15	62	0.0%	6.5%	6.5%	1.00	1.50	1.50
Pyramids	11	56	0.0%	6.2%	6.2%	1.00	1.31	1.31

Dual-class stock refers to voting structures in which the firm has issued two or more classes of stock with differential voting rights, excluding nonvoting preferred stock. Voting agreements refer to pacts among shareholders that result in the founder or family holding voting power over a larger number of shares than what they own with investment power. Pyramids refer to control structures where the founder or family hold their shares of the firm indirectly, through one or more investment vehicles in which the founder or family own less than 100% but more than 20%. Founder- or family-controlled firms are defined as those where one or more founding family members are officers or directors or own 5% or more of the firm's equity either individually or as a group. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000. The founding family firms sub-sample comprises 1,183 firm-year observations of 210 firms.

Table 7
Governance mechanisms in U.S. founder- or family-controlled firms

	Founder- or family-Controlled Firms	Founder-Controlled Firms	Family Firms
Panel A: All Founder- or family-Controlled Firms			
% of Family Members or Representatives among:			
- All Directors	17.3%	16.0%	18.3%
- Outside Directors	10.0%	5.8%	13.6%
- Inside Directors	41.0%	44.9%	37.7%
- Nominating Committee Members	19.1%	15.0%	21.5%
Governance Index	9.38	8.93	9.76
Firm-Years with a Family CEO	600	323	277
Firm-Years with a Family Chairman of the Board or CEO	703	381	322
% Board Seats Controlled Minus % Shares Owned	2.0%	1.6%	2.2%
% Board Seats Controlled Minus % Votes Controlled	-1.9%	-1.6%	-2.1%
Panel B: Founder- or family-Controlled Firms with Disproportionate Board Representation			
% Board Seats Controlled Minus % Shares Owned *(B – O)*	11.1%	10.6%	11.4%
Firm-Years in which % Board Seats > % Shares Owned	755	321	434
% Board Seats Controlled Minus % Votes Controlled *(B – C)*	10.0%	10.0%	10.0%
Firm-Years in which % Board Seats > % Votes Controlled	705	299	406

Founder- or family-controlled firms are defined as those where one or more founding family members are officers or directors or own 5% or more of the firm's equity either individually or as a group. The governance index is the number of governance provisions in the firm's charter, bylaws, or SEC filings that reduce shareholder rights [Gompers, Ishii, and Metrick (2003) measure]. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000. The founding family firms' sub-sample comprises 1,183 firm-year observations of 210 firms.

Table 8
Impact of control-enhancing mechanisms on firm value: wedge measured as a difference

	All Firms		Founder- or family-Controlled Firms		Founder-Controlled Firms		Family Firms	
% Shares Owned by the Founding Family	0.10		0.28		-0.18		0.46	
	(0.24)		(0.60)		(-0.22)		(0.99)	
Additional Founding Family Control via Dual-Class Stock	-1.30	**	-1.16	**	-1.93	**	-0.54	
	(-2.51)		(-2.09)		(-2.46)		(-0.70)	
Additional Founding Family Control via Voting Agreements	0.22		0.95		1.44		2.60	*
	(0.23)		(0.82)		(1.00)		(1.78)	
Additional Founding Family Control via Pyramids	1.52		2.64	**	3.92	*	2.67	*
	(1.58)		(2.16)		(1.82)		(1.88)	
Additional Founding Family Control via Disproportionate Board Representation	-1.39		-1.07		-1.26		-0.26	
	(-1.45)		(-0.94)		(-0.76)		(-0.29)	
Founding Family-CEO or Chairman	0.33	**	0.38	***	0.68	***	0.20	*
	(2.59)		(3.00)		(2.84)		(1.74)	
First Generation	0.31	**	0.35	**				
	(2.12)		(2.40)					
Governance Index	-0.03		0.02		0.07		-0.03	
	(-1.47)		(0.56)		(1.37)		(-1.17)	
% of Shares Owned by Non-Family Blockholders	-0.59	***	-0.83	*	-2.08	***	-0.00	
	(-2.61)		(-1.82)		(-2.69)		(-0.01)	
Additional Votes Owned by Non-Family Blockholders	-0.65		-1.87	**	-1.94		-0.70	
	(-1.11)		(-2.56)		(-1.19)		(-1.11)	
Market Risk (Beta)	0.10		0.20		0.34		0.02	
	(1.15)		(1.16)		(1.17)		(0.13)	
Idiosyncratic Risk	-0.18		-0.08		0.32		-0.37	
	(-1.04)		(-0.33)		(0.88)		(-1.09)	
Diversification	-0.32	***	-0.48	***	-0.51	**	-0.37	***
	(-3.51)		(-3.33)		(-2.19)		(-2.68)	
CAPX/PPE	0.53		0.37		0.41		0.27	
	(1.47)		(1.21)		(1.26)		(0.29)	
Dividends/Book Equity	0.28		0.94	***	-0.34		1.20	**
	(1.52)		(3.45)		(-0.31)		(2.44)	
Debt/Market Value of Equity	-0.23	***	-0.32		-0.21		-0.43	***
	(-3.50)		(-1.62)		(-0.90)		(-2.91)	
Log of Assets	0.08	*	0.12		0.15		0.08	
	(1.96)		(1.50)		(1.15)		(1.18)	
Intercept	-0.63		-1.53	*	-2.21		-0.62	
	(-1.37)		(-1.77)		(-1.58)		(-0.88)	
R-squared	0.12		0.14		0.12		0.22	
No. of Observations	3006		1183		540		643	

Coefficients from OLS regressions of industry-adjusted *q* on additional founding family control obtained through various mechanisms, and other firm characteristics. Additional control via dual-class stock is the difference between the percentage of votes owned by the founder or family and the percentage of shares they own. Additional control via voting agreements is the difference between the percentage of votes controlled by the founder or family and the percentage of votes they own. Additional control via pyramids is the difference between the percentage of votes controlled by the founder or family and the percentage of votes they control via voting agreements. Additional control via disproportionate board representation is the difference between the percentage of founding family members or representatives in the firm's board of directors and the percentage of votes controlled through the other three mechanisms. *q* is measured as the ratio of the firm's market value to total assets. Industry-adjusted *q* is the difference between the firm's *q* and the asset-weighted average of the imputed *q*s of its segments, where a segment's imputed *q* is the industry average *q*. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000. The founding family firms' sub-sample comprises 1,183 firm-year observations of 210 firms. *t*-statistics from clustered (by firm) standard errors appear in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

Table 9
Impact of control-enhancing mechanisms on firm value: wedge measured as a ratio

	All Firms	Founder- or family-Controlled Firms	Founder-Controlled Firms	Family Firms
% Shares Owned by the Founding Family	-0.05	0.24	-0.31	0.44
	(-0.12)	(0.48)	(-0.34)	(0.97)
Additional Founding Family Control via Dual-Class Stock	-0.04	-0.02	-0.04	0.00
	(-1.47)	(-0.61)	(-1.48)	(0.04)
Additional Founding Family Control via Voting Agreements	0.14 **	0.16 **	0.24 ***	0.76
	(2.23)	(2.19)	(3.58)	(1.52)
Additional Founding Family Control via Pyramids	0.37 *	0.49 **	0.89 *	0.34 **
	(1.71)	(2.00)	(1.91)	(2.03)
Additional Founding Family Control via Disproportionate Board Representation	-0.03	-0.02	-0.03	0.00
	(-1.11)	(-0.67)	(-0.45)	(-0.12)
Founding Family-CEO or Chairman	0.28 **	0.34 ***	0.62 ***	0.20 *
	(2.35)	(2.79)	(2.70)	(1.81)
First Generation	0.32 **	0.37 **		
	(2.17)	(2.48)		
Governance Index	-0.02	0.02	0.07	-0.03
	(-1.27)	(0.67)	(1.24)	(-1.08)
% of Shares Owned by Non-Family Blockholders	-0.46 *	-0.11	-1.86 ***	0.39
	(-1.72)	(-0.24)	(-2.74)	(1.64)
Additional Votes Owned by Non-Family Blockholders	0.00	-0.19	-0.42 **	0.12
	(0.04)	(-1.54)	(-2.07)	(1.10)
Market Risk (Beta)	0.12	0.20	0.32	0.02
	(1.31)	(1.13)	(1.08)	(0.15)
Idiosyncratic Risk	-0.18	-0.18	0.40	-0.38
	(-1.04)	(-0.83)	(1.29)	(-1.14)
Diversification	-0.33 ***	-0.50 ***	-0.55 **	-0.37 ***
	(-3.56)	(-3.46)	(-2.33)	(-2.75)
CAPX/PPE	0.52	0.36	0.31	0.36
	(1.39)	(1.11)	(1.01)	(0.39)
Dividends/Book Equity	0.28	1.01 ***	-0.21	1.20 **
	(1.52)	(3.52)	(-0.19)	(2.44)
Debt/Market Value of Equity	-0.24 ***	-0.35 *	-0.22	-0.46 ***
	(-3.51)	(-1.70)	(-0.92)	(-3.13)
Log of Assets	0.08 **	0.13	0.15	0.09
	(2.05)	(1.52)	(1.14)	(1.30)
Intercept	-1.16 **	-2.07 **	-2.85	-1.98 **
	(-2.36)	(-2.10)	(-1.57)	(-2.14)
R-squared	0.11	0.12	0.12	0.22
No. of Observations	3006	1183	540	643

Coefficients from OLS regressions of industry-adjusted *q* on additional founding family control obtained through various mechanisms, and other firm characteristics. Additional control via dual-class stock is the ratio of the percentage of votes owned by the founder or family to the percentage of shares they own. Additional control via voting agreements is the ratio of the percentage of votes controlled by the founder or family to the percentage of votes they own. Additional control via pyramids is the ratio of the percentage of votes controlled by the founder or family to the percentage of votes they control via voting agreements. Additional control via disproportionate board representation is the ratio of the percentage of founding family members or representatives in the firm's board of directors to the percentage of votes controlled through the other three mechanisms. *q* is measured as the ratio of the firm's market value to total assets. Industry-adjusted *q* is the difference between the firm's *q* and the asset-weighted average of the imputed *q*s of its segments, where a segment's imputed *q* is the industry average *q*. The sample comprises 3,006 firm-year observations of 515 Fortune 500 firms listed in U.S. stock markets during 1994-2000. The family firms' sub-sample comprises 1,183 firm-year observations of 210 firms. *t*-statistics from clustered (by firm) standard errors appear in parentheses. Asterisks denote statistical significance at the 1% (***), 5% (**), or 10% (*) level.

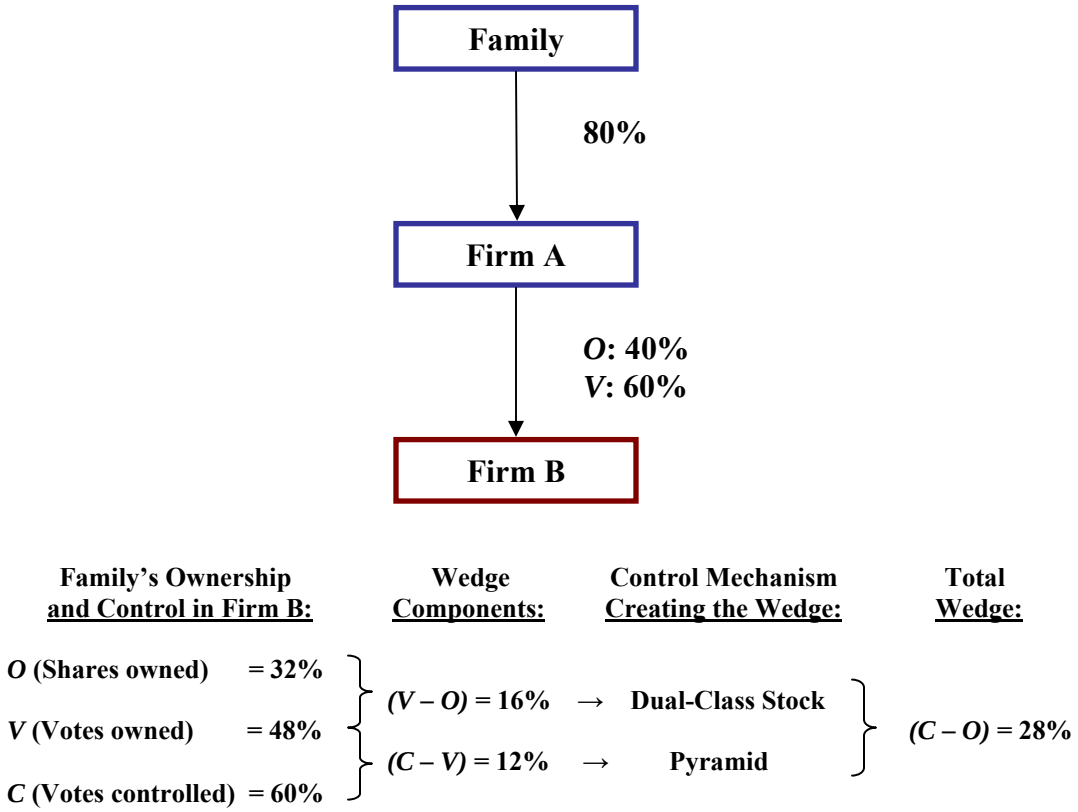
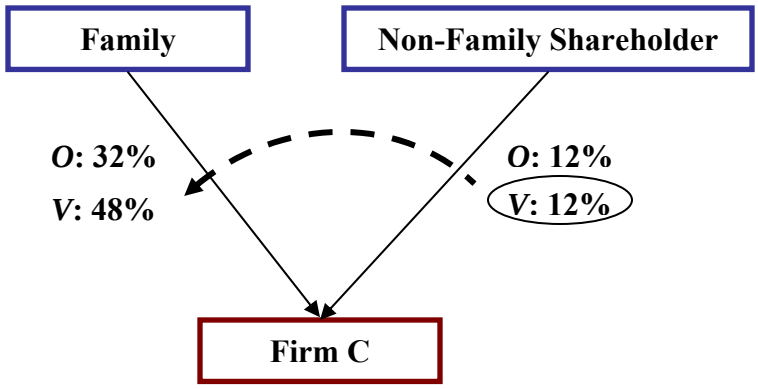


Figure 1
Example: Wedge between cash-flow and control rights due to dual-class stock and a pyramid
Firm A has one class of shares. Firm B has two classes of shares with different voting rights.



Family's Ownership and Control in Firm C:		Wedge Components:		Control Mechanism Creating the Wedge:	Total Wedge:
O (Shares owned)	= 32%	*(V – O)* = 16%	→	Dual-Class Stock	*(C – O)* = 28%
V (Votes owned)	= 48%	*(C – V)* = 12%	→	Voting Agreement	
C (Votes controlled)	= 60%				

Figure 2
Example: Wedge between cash-flow and control rights due to dual-class stock and a voting agreement

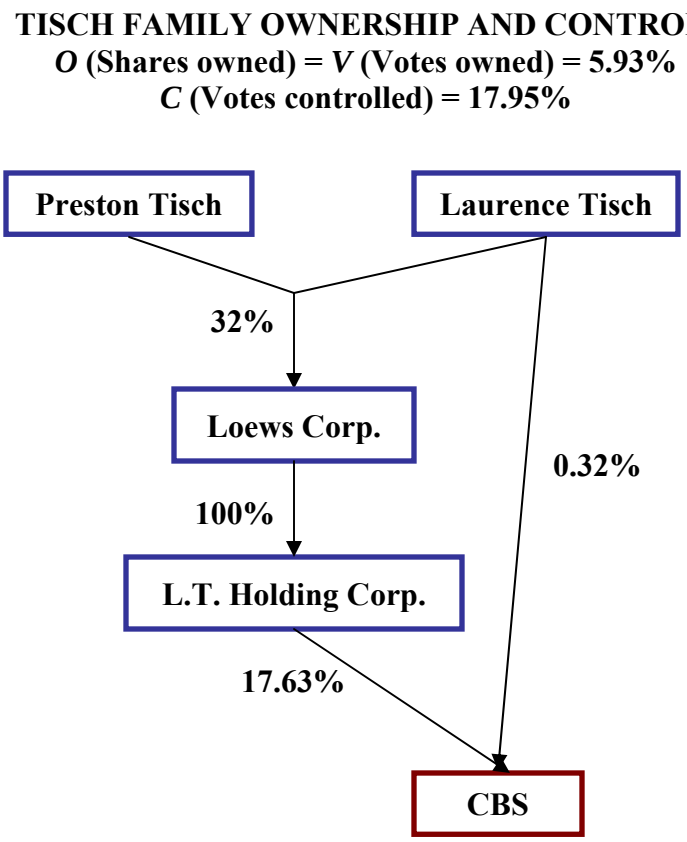


Figure 3
CBS's ownership structure in 1995
Owners are represented with continuous lines. Laurence Tisch and Preston Tisch are brothers.

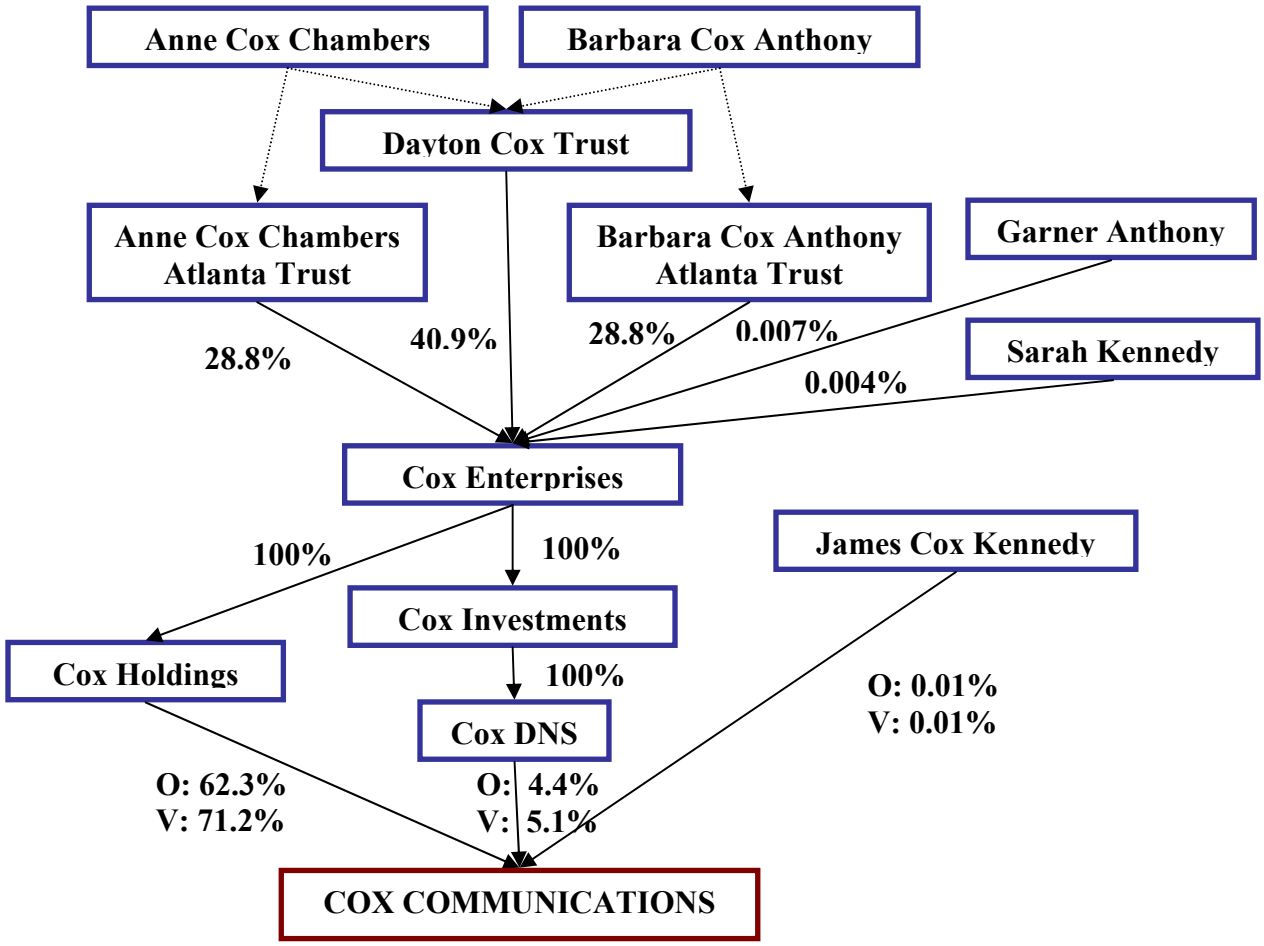


Figure 4
Cox Communications's ownership structure in 2000
"O" denotes ownership stakes; "V" denotes voting stakes. Owners are represented with continuous lines; trustees with dotted lines. Anne Cox Chambers and Barbara Cox Anthony are daughters of founder James Middleton Cox. James Cox Kennedy is son of Barbara Cox Anthony. Garner Anthony is husband of Barbara Cox Anthony, and James Cox Kennedy's stepfather. Sarah Kennedy is James Cox Kennedy's wife.

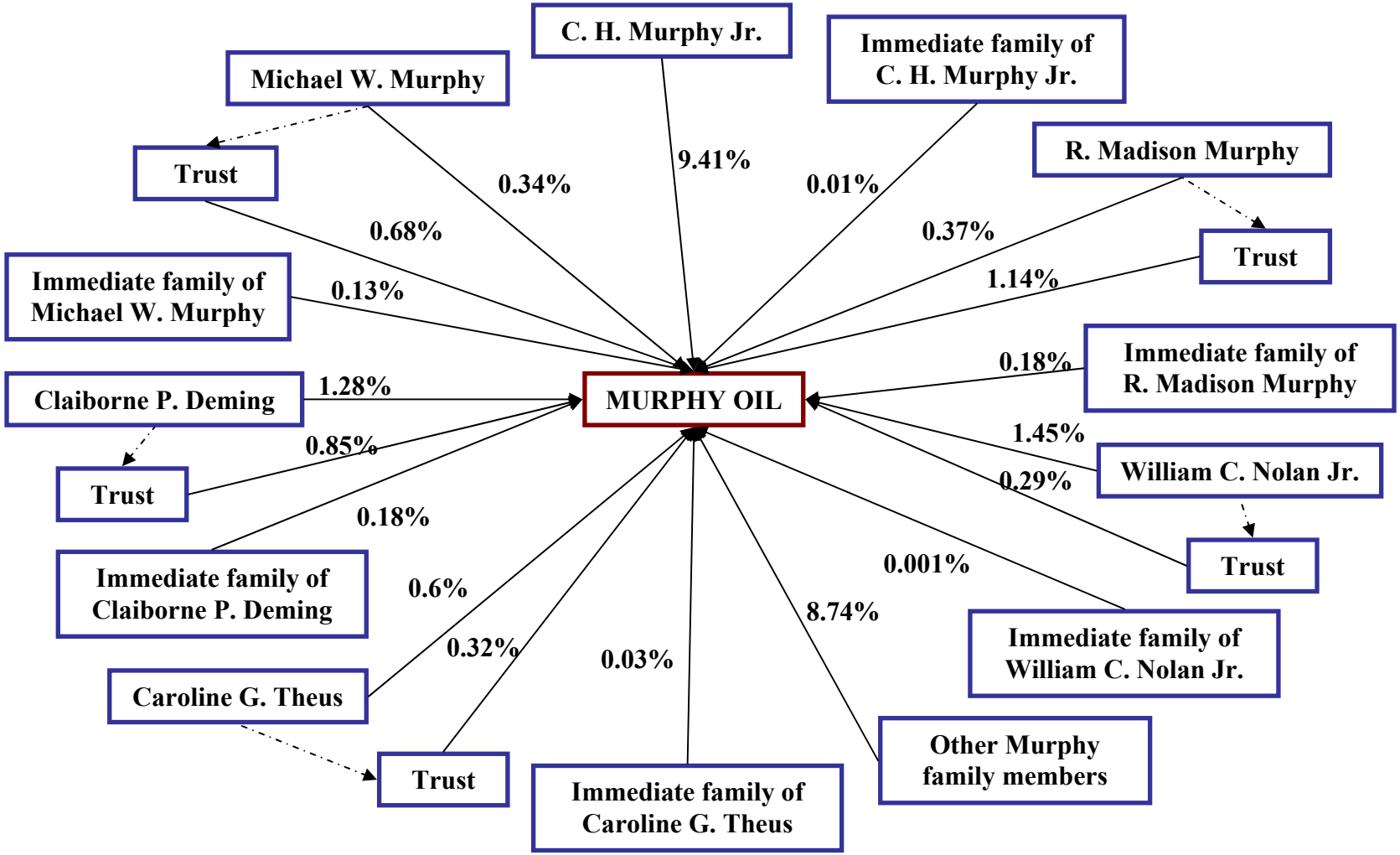


Figure 5
Murphy Oil's ownership structure in 1994
Owners are represented with continuous lines and trust beneficiaries with discontinues lines. Michael W. Murphy and R. Madison Murphy are sons of founder C. H. Murphy, Jr. Claiborne P. Deming and William C. Nolan, Jr. are nephews of C. H. Murphy, Jr., and Caroline G. Theus is a niece of C. H. Murphy, Jr.

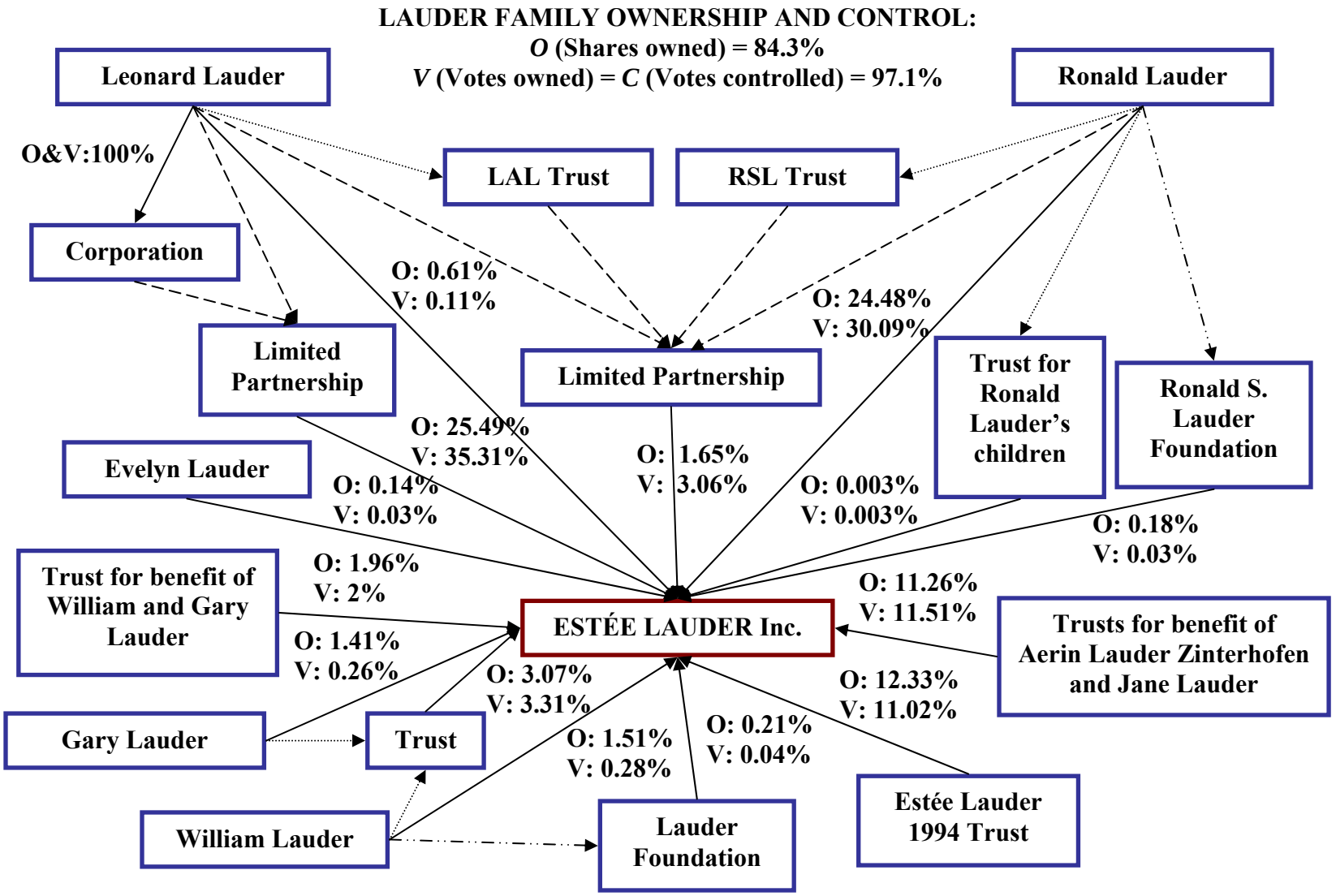


Figure 6
Estée Lauder's ownership structure in 1996
"O" denotes ownership stakes; "V" denotes voting stakes. Owners are represented with continuous lines; trustees with dotted lines; general partners with dashed lines; and foundation directors with dash-dotted lines. Leonard and Ronald Lauder are sons of founder Estée Lauder. Evelyn Lauder is Leonard Lauder's wife. William and Gary Lauder are Leonard's sons. Aerin and Jane Lauder are Ronald's daughters. Leonard and Ronald Lauder are also directors of the Lauder Foundation and trustees of the Estée Lauder trust.

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