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Dominant Shareholders, Corporate Boards and Corporate Value:

A Cross-Country Analysis

Abstract

We investigate the relation between corporate value and the fraction of independent directors in 799 firms with a dominant shareholder across 22 countries. We find a positive relation, especially in countries with weak legal protection for shareholders. The findings suggest that a dominant shareholder, were he so inclined, could offset, at least in part, the documented value discount associated with weak country-level shareholder protection by appointing an 'independent' board. The cost to the dominant shareholder of doing so is the loss in perquisites associated with being a dominant shareholder. Thus, not all dominant shareholders will choose independent boards.

Dominant Shareholders, Corporate Boards and Corporate Value:

A Cross-Country Analysis

This paper is an empirical investigation of the relationship between corporate value and board composition in firms with a dominant shareholder. The question addressed is whether a 'strong' board can offset the market value discount in firms domiciled in countries with weak legal protection for shareholders. Such a discount has been documented by Claessens, Djankov, Fan and Lang (CDFL) (2002), Durnev and Kim (DK) (2005), and La Porta, Lopez-de-Salanes, Shleifer, and Vishny (LLSV) (2002). This discount is often attributed to the ability of a dominant shareholder to divert corporate resources from other shareholders to himself for personal consumption, especially in countries with weak legal shareholder protection. In essence, the question that we address is whether a dominant shareholder could, were he so inclined, increase firm value by appointing a 'strong' board with a mandate of assuring minority investors that he will refrain from diversion of the firm's resources and whether the effect of board composition on firm value, if there is any, is different between countries with weak and those with strong legal shareholder protection.

The studies most closely related to ours are Durnev and Kim (DK) (2005) and Klapper and Love (KL) (2004). Among other things, these studies empirically investigate the relationship between firm value and the 'quality' of a firm's corporate governance where the proxies for the quality of governance are two firm-specific indices: the Credit Lyonnais Securities Asia (CLSA) corporate governance scores and the Standard & Poor's (S&P) transparency rankings. As do the other studies cited above,

these two report that proxies for Tobin's Q (i.e., firm market-to-book value ratios) are lower in countries with weak legal shareholder protection. They further report, however, that the value discount is less in firms with higher corporate governance scores. We complement these studies by exploring what role, if any, the composition of the board of directors has in reducing the value discount in firms with a dominant shareholder across countries with strong and weak legal shareholder protection.

The premise underlying our analysis goes as follows. Dominant shareholders have an incentive and, in the absence of a countervailing force, the ability to divert corporate resources from other shareholders to themselves for personal consumption. Such diversion reduces the observed market value of the firm. In some instances, however, a dominant shareholder may be willing to reduce his diversion of corporate resources in exchange for an increase in firm value. The most likely instance in which this will occur is when the dominant shareholder wishes to sell equity either on personal account (for diversification or consumption purposes) or through the firm (to undertake positive NPV projects).

The problem for the dominant shareholder is convincing minority shareholders that he will refrain from diverting resources. We propose that one way in which he can do so is by appointing a 'strong' board of directors charged with a mandate of curbing the dominant shareholder's diversion of corporate resources. This proposition raises, at least, three related questions.

First, can the appointment of a 'strong' board be an effective deterrent to resource diversion given that the dominant shareholder can just as easily remove directors as appoint them? In such circumstances, appointment of a strong board would be unlikely

to increase firm value. A counter argument is that, at the margin, if replacement of strong directors is costly to the dominant shareholder for any reason, appointment of a strong board could at least ameliorate the loss in value associated with a firm having a dominant shareholder.

And that leads to the second question - - what incentive does a director have to monitor a dominant shareholder who can replace him? That is, even if there are marginal costs to the dominant shareholder of replacing directors who monitor him too closely, what incentives do such directors have to monitor?

The answer to this question lies in the market for directors. As Fama and Jensen (1983) argue "[e]ffective separation of top-level decision management and control means that outside directors have incentives to carry out their tasks and not collude with managers to expropriate residual claimants … ."[1] The incentive arises because "…there is substantial devaluation of human capital when internal control breaks down..."[2] Given a market for outside directors occurs, the failure to monitor implies a loss in human capital for ineffective directors. This argument holds together only so long as a market for outside directors occurs.

The third question is - - what power does an outside director have to control the dominant shareholder even if he does choose to be an effective monitor? Outside directors may derive their power legally, contractually or implicitly. As we will document, in many of the countries in our sample, directors have a legal responsibility to monitor on behalf of minority shareholders, but that may not be the primary source of their power. Rather, assuming that directors suffer losses in human capital when they fail

[1] Fama and Jensen (1983), p. 315.
[2] Ibid, p. 315.

to monitor, ex ante, directors will seek assurances, either contractually or implicitly, from the dominant shareholder that they will have the freedom to monitor effectively.

Our foregoing discussion frames the issues that we address empirically. We conduct our analysis with data on boards of directors for 799 firms with dominant shareholders from 22 countries. We classify directors as 'affiliated' with the dominant shareholder or 'independent.' We use an expansive definition of affiliated such that affiliated directors encompass more than just the executives of the firm and our definition of an independent director is narrower than 'outside' directors where any non-executive is typically considered an outside director. We find that there does appear to be a robust market for independent directors - - of the XX independent directors in our sample, XX% of them serve on multiple boards.

We also find that firms with independent boards are significantly more likely to issue equity than are other firms in our sample. Thus, the demand to sell shares appears to be a determinant of board composition. These two sets of results provide a foundation for our primary analysis.

In our primary analysis, we estimate regressions in which the dependent variable is firms' market-to-book value ratios (as a proxy for Tobin's Qs) and the independent variables are country levels of shareholder protection, the fraction of the board made up of independent directors, and various control variables.

Consistent with prior studies, we find that Q ratios are positively correlated with the country level of legal shareholder protection: on average, lower country levels of legal shareholder protection are associated with lower market-to-book ratios. We also find that, after controlling for country-level of legal shareholder protection (and other

factors), Qs are positively correlated with the fraction of the board composed of independent directors: a higher fraction of independent directors is associated with a higher Q ratio. Further, we find that the relationship between market-to-book ratios and the fraction of independent directors is stronger in countries with weaker legal protection for shareholders.

As a final step in our analysis, we seek to identify evidence of ways in which independent directors constrain resource diversion by dominant shareholders. Perhaps the most frequently cited mechanism through which dominant shareholders are alleged to divert resources is by arranging disadvantageous transactions between the publicly traded firms that they control and other firms also controlled by the dominant shareholder in which the dominant shareholder has a larger ownership position. Such deals are referred to as related party transactions and the diversion of resources in this way is often labeled tunneling.

We examine the occurrence of related party transactions by the firms in our sample with a regression analysis. After controlling for other factors, the occurrence of related party transactions is negatively correlated with the fraction of the board comprising independent directors: a higher proportion of independent directors is associated with a lower likelihood of a related party transaction.

Thus, the evidence indicates that a dominant shareholder is more likely to appoint independent directors when his firm intends to issue equity, that a higher proportion of independent directors is associated with a lower incidence of related party transactions, that firms without related party transactions have higher values than firms with related party transactions and that firm values are positively correlated with the proportion of

independent directors comprising the board. Finally, each of these relationships is more significant in countries with weak legal protection for outside shareholders.

Fundamental to the interpretation of our results is the assumption that 'independent' directors lead to a 'stronger' board. Accepting that assumption as true, our results imply that stronger boards are associated with higher equity values in firms with a dominant shareholder and this relationship is more consequential in countries with weak shareholder legal protection. Numerical analysis indicates that this relationship is not only statistically but also economically significant especially in countries with weak legal protection for shareholders.

Our study contributes to the literature on the effect of country-level legal systems on corporate activities and corporate value (e.g., Beck, Levine & Loayza (2000), Friedman, Johnson, and Mitton (2003), Johnson, Boone, Breach, and Friedman (JBBF) (2000), Faccio and Lang (2002), LLSV (1997, 1999, 2002), and Rajan and Zingales (1998) among others), to the literature on the effect of board composition on corporate value and performance (e.g., Agrawal and Knoeber (AK) (1996, 2001), Bhagat and Black (BB) (2002), Coles, Daniel and Naveen (2005), Dahya, McConnell, and Travlos (2002), and Hermalin and Weisbach (HW) (1991, 2003), among others), and, peripherally, to the literature on the value of shareholder voting rights (e.g., Bergstrom and Rydqvist (1992), DeAngelo and DeAngelo (1985), Grossman and Hart (1988), Lease, McConnell, and Mikkelson (1983, 1984), and Zingales (1994) among others).

Section I presents the background and motivation for this study along with a review of related literature. Section II describes the data collection procedures and gives certain descriptive statistics for the sample. Section III presents univariate tests of the

relationship between Q and the percentage of the board composed of independent directors. Section IV presents multivariate tests of this relationship. Section V presents the results of various tests of robustness including instrumental variable regressions that control for the possible endogeneity between board composition and firm value and variations in empirical procedures and variable specifications. Section VI provides a commentary on the results and concludes.

I. Background and Related Literature

It is well documented that, in most countries, large publicly traded firms are not widely held. Rather, ownership and control of such firms typically vest with a dominant shareholder.[3] Bebchuk, Kraakman, and Triantis (1999), Davies (2000), Shleifer and Vishny (1997) and others argue that, in such firms, the primary agency conflict is not between owners and managers, but between the dominant shareholder, who has the power to divert corporate resources to himself, and other shareholders. DK (2005), Doidge, Karolyi and Stulz (DKS) (2004a) and LLSV (2002) further observe that this agency conflict is likely to be most acute in countries that afford weak legal protection to minority shareholders. This occurs because, in such countries, it is argued, the dominant shareholder has greater ability to extract resources that otherwise would have been shared with minority investors.

LLSV (2002) go on to develop a model in which firm value depends upon the profits generated by the firm, the amount of profits diverted from productive use by the dominant shareholder, and the cost of diverting profits. They assume that the cost of diversion is greater in countries with stronger shareholder protection. As a consequence,

[3] For example, in La Porta, Lopez-de-Salanes, and Shleifer (LLS) (1999), Claessens, Djankov, and Lang (CDL) (2000) and Faccio and Lang (2002).

less diversion occurs and firm value is higher. DK (2005), LLSV (2002), and Lins (2003) conduct empirical investigations and report that Tobin's Q are higher in countries with stronger country-level legal shareholder protection. These results support the LLSV analysis.

In the LLSV (2002) model, the dominant shareholder is largely at the mercy of the legal environment in which his firm resides. That is, given his level of ownership, the model does not afford the dominant shareholder the ability to provide extra-legal assurances to outside investors that he will not divert resources. The result is that the level of diversion and, therefore, the loss in value due to diversion is beyond the control of the dominant shareholder.

DK (2005) and DKS (2004a,b) present models in which the dominant shareholder can take steps to overcome the loss in value associated with weak country-level legal shareholder protection. These steps involve a commitment on the part of the dominant shareholder to curtail his future diversion of corporate resources for personal consumption. In the DKS (2004b) model, the dominant shareholder can choose to list the shares of his firm on the stock exchange of a country with stronger legal shareholder protection. Doing so reduces the dominant shareholder's ability to divert corporate resources (i.e., raises the costs of diversion) and, thereby, raises the firm's equity value. Benos and Weisbach (BW) (2004), Siegel (2005), Stulz (1999), and Reese and Weisbach (RW) (2002) present similar arguments. DKS (2004b), Miller (1999), and RW (2002) report empirical evidence consistent with this argument.

In the DK (2005) and DKS (2004a) models, the dominant shareholder can choose a higher 'quality' of internal corporate governance for his firm. As with a cross-border

listing to a country with stronger legal protection, the higher quality of governance increases the cost of diversion to the dominant shareholder with the consequence that less diversion occurs and firm value is higher. DK (2005) and KL (2004) estimate cross-firm cross-country regressions in which proxies for firms' Tobin's Qs are the dependent variable and the independent variables include an index of country-level legal shareholder protection along with measures of the firm-specific 'quality' of corporate governance. As proxies for the quality of corporate governance they use the CLSA corporate governance scores and the S&P transparency rankings. The results of their analyses support the DK (2005) and DKS (2004a) models in that market-to-book asset ratios are positively correlated with the country-level of legal shareholder protection and with the firm-specific measures of the quality of corporate governance. The implication is that a dominant shareholder can increase the value of his firm by improving the quality of his firm's internal governance mechanisms even in countries with weak legal shareholder protection.

Our study complements the DK (2005) and KL (2004) analyses by focusing on the firm's board of directors. Arguably the board of directors is a central building block of a firm's corporate governance structure. Indeed, both the CLSA and the S&P scores give weight to qualitative and quantitative board characteristics.[4]

It is not unreasonable to expect that a 'stronger' board could offset, at least in part, the loss in value associated with weak country-level legal shareholder protection. A 'strong' board endowed with a mandate to monitor the dominant shareholder on behalf of

[4] For example, the CLSA index is based on the answers by financial analysts to 70 questions. The survey includes such questions as "Is it true that there has been no controversy or question raised over whether the board or senior management have made decisions in the past 5 years that benefit them, at the expense of shareholders?" And "Does the company have an audit committee … chaired by a perceived genuine independent director?"

minority shareholders could raise the cost of diversion to the dominant shareholder and, thereby, reduce diversion and increase value. There is, however, a reasonable argument that appointment of a 'strong' board will have little or no effect on corporate value.

Specifically, Bebchuk (1999) argues that certain actions by the dominant shareholder that are apparently designed to curb his diversion of private benefits are unlikely to provide concrete assurances to outside shareholders. Appointment of a 'strong' board, for example, may be ineffective because a dominant shareholder can easily replace strong directors with weak ones, and this is may be especially so in countries with weak legal shareholder protection.[5] The result is that appointment of a strong board in such circumstances will not increase firm value. The opposing argument is that, at the margin, if replacement of strong directors is costly at all, appointment of a strong board could at least reduce the loss in value associated with a firm having a dominant shareholder.

As we noted at the outset a positive marginal cost for removing strong directors is not in itself sufficient to increase firm value. Directors must also have an incentive and the power to influence the actions of the dominant shareholder. As regards the incentive, if there is a market for directors and if poor performance by a director reduces the value of his human capital, then directors will have an incentive to monitor the dominant shareholder. The evidence on this issue is mixed. On the one hand, studies by Coles and Hoi (2003), Gilson (1990), Harford (2003), and Kaplan and Reishaus (1990) indicate that the number of boards on which a director sits is positively related to the performance of the firms on which an incumbent director sits. On the other hand, studies by Core,

[5] Similar arguments apply to cross-listings. According to Nasdaq data, several hundred foreign firms delisted over the period 2000-2004.

Holthausen and Larcker (1999) and Fich and Shivdasani (2006) suggest that firm performance suffers when outside director sit on "too many" boards. The former studies appear to imply that strong board oversight is rewarded with more board appointments, while the latter studies appear to suggest the opposite.

As for the power to curb the dominant shareholder's diversion, such power can arise from legal, contractual or implicit constructs. As we will document, in many of the countries in our sample directors have a legal responsibility to monitor on behalf of minority shareholders. But the primary source of their power may come from their explicit and implicit negotiations with the dominant shareholder prior to their appointment. Assuming that directors suffer losses in their reputational capital when they fail to curb the dominant shareholder's actions, outside directors will demand upfront assurances that they will have the power to monitor effectively. And although we do not have large sample evidence to support that presumption, we have come across at least some anecdotal evidence: In 2003, the board of Hollinger International (HI) ousted its chairman, Conrad Black, and sued him for $200 million for misuse of funds. At the time, Black owned 17% of the shares of Hollinger Inc.[6] which owned 30% of the cash flow rights and 78% of the voting rights of HI.

Of course, the actions of the board need not be as dramatic as in HI to have an effect. The appropriate benchmark for judging whether a board has the power to reduce diversion of resources is not whether a 'strong' board can monitor the dominant shareholder perfectly, the benchmark is whether the board can reduce diversion of resources relative to a 'weak' board in the otherwise identical circumstances.

[6] And 84% of the voting rights through Ravleston corporation.

As regards the demand by dominant shareholders for a strong board, we have argued that such a demand is most likely to arise when the dominant shareholder wishes to sell shares either on personal account or through his firm. That is, only when the dominant shareholder wishes to sell shares will he be concerned abut the market value of his firm. Consistent with the idea that better governance at the firm level is associated with the demand for capital, DK (2005) find a positive correlation between the "need for funds" and CLSA scores. Similarly, RW (2002) find that firms that cross-list their stock on U.S. exchanges increase their equity issues following listing and that this increase is greatest for cross-listings from countries with weak legal shareholder protection.

How strong boards curtail a dominant shareholder's ability to divert is difficult to identify precisely. Presumably, if they do so, it is through an ongoing process of monitoring and control. However, one way in which dominant shareholders are alleged to divert is through related party transactions. In such transactions, the dominant shareholder arranges a deal between two companies in which he holds a controlling interest. He arranges the deal so as to provide favorable terms to the firm in which he has a larger percentage equity ownership and disadvantageous terms to the firm in which he holds a smaller ownership position.

Bertrand, Mehta and Mullainathn (2002) report evidence of evidence of transfers among Indian pyramidal firms consistent with wealth transfers from firms lower down the pyramid to firms higher up the ownership chain in which the dominant shareholder has alarger ownership position. Bae, Kang and Kim (2002) find that dominant shareholders in Korean chaebol firms gain when a chaebol-affiliated firm undertakes an acquisition while minority shareholders in the chaebol lose. Cheung, Jing, Rau and

Stouraitis (2006) find that in China local governments extract resources from publicly traded firms in which they have significant ownership positions by entering into contracts on terms disadvantageous to the publicly traded enterprise.[7] Perhaps a board composed of directors independent of the government can reduce such disadvantageous transactions.

Given the potentially pivotal role of the board in assuring higher quality governance and given competing arguments regarding the valuation effects of an apparently 'strong' board, we set out to examine whether firm value is higher in firms with a dominant shareholder that have 'stronger' boards and whether the relation between firm value and board structure is different in countries with low versus high levels of legal shareholder protection. That is, we are asking whether a dominant shareholder who desires to increase the market value of his firm could do so by appointing more 'independent' directors and whether such a decision has more effect in a country that provides weak as opposed to strong legal protection for shareholders.

As corollary issues, we also investigate whether the directors in our sample appear to have reputational capital at risk, whether there is a correlation between the fraction of the board made up of independent directors and the propensity of the firm to issue equity, whether the market value of firms with related party transactions is different from the market value of other firms, and whether the occurrence of related party transactions is correlated with the proportion of the board composed of independent directors.

II. Sampling Procedure and Data

[7] Other studies of related party transactions include Atanasov (2005), Cheung, Rau and Stouratis (2005), and Johnson, Boone, Breach and Friedman (2000) among others.

II.A Firms and dominant shareholders

To conduct our empirical analysis, we assemble data on share ownership and boards of directors for firms from the 22 countries listed in table I.[8] These are the countries for which we have been able to locate data on both variables.[9]

Our first task is to identify firms with a dominant shareholder where a dominant shareholder is one who can significantly influence selection of the firm's board. While it is possible, and perhaps likely, that in some cases, more than one large shareholder can influence the composition of the board, we assume that the firm has a single influential or dominant shareholder. Thus, we search for the largest single owner of voting rights in each firm provided that the shareholder controls at least 10% of the firm's votes.

Further, we are interested in the firm's 'ultimate' shareholder so as to be able to identify directors affiliated with this ultimate owner. As has been widely documented, many publicly-traded firms are controlled through pyramidal ownership structures (e.g., CDL (2000) and LLS (1999) and others). For that reason, we trace the ownership of voting rights through an ownership "tree" to identify an ultimate owner. We consider a shareholder of Company A to be an ultimate owner when the shareholder is an individual or a family, a privately-held operating company, a privately-held financial firm, or a government. Additionally, when the shares of Company A are owned by a publicly-traded corporation, Company B, that has a shareholder with 10% or more of voting rights in one of these categories, that shareholder is considered to be the dominant shareholder

[8] The countries are mostly economically developed. To the extent that shareholder protection fosters economic development, the countries in our sample will have less dispersion on this dimension than a broader sample and, as such, the tests may be biased against the finding of any effect of board composition on corporate value.

[9] The key factor limiting our analysis to companies from 22 countries listed in table I is data on board members. In 14 additional countries, we are able to locate ownership data for the 70 largest companies but are unable to find information on board membership.

of Companies A and B. If the shares in Company A are held by Company B and Company B has no dominant shareholder, then Company A is also considered to have no dominant shareholder. Once an ultimate dominant shareholder has been identified, we search to identify affiliations between that shareholder and members of the firm's board.

To assemble our sample, for each country listed in table I, we identify the largest publicly-traded industrial companies in terms of equity market capitalization as of December 2002 included in *Worldscope* with up to a maximum of 70 companies in any one country.[10] *Worldscope* does not list 70 such companies for Korea, Mexico and South Africa. For these countries, we have 29, 40 and 56 firms, respectively, resulting in an initial sample of 1,455 firms.

For each firm, for which data are available as of year-end 2002, we extract the identity and percentage voting rights of each shareholder who holds more than 10% of the voting rights outstanding from the sources listed in Appendix A. Certain of the data sources are country specific. The sources are listed in the order in which they have been used to collate ownership information. That is, if data for a firm are available in the first source listed in Appendix A, we use that source. If not, we move to the next source, and so on, until we gather data for each sample firm. If data are not available for year-end 2002, we move to year-end 2001. We are able to find ownership data for all but 23 firms.

As we noted, in the first step of our search algorithm, we identified all shareholders with ownership of at least 10% of the firm's voting rights. In firms with more than one such shareholder, we checked to determine whether two or more of these blocks were affiliated such that their combined ownership of voting rights exceeded that

[10] We exclude financial institutions and utilities, specifically SIC codes 49, 60, 61, 62, 63, 65, 67.

of the largest single shareholder. If so, these blocks were combined to comprise the single largest shareholder.[11]

Using our search procedure and traveling up the ownership tree, we determined that 1,055 of the firms in our initial sample have an ultimate dominant shareholder who controls at least 10% of the firm's voting rights. Of these ultimate owners, 216 are widely-held firms and, thus, the corresponding sample firms are also considered to be widely-held. These are removed from the sample such that our sample is narrowed to 839 firms with an ultimate dominant shareholder.

Of course, voting rights are not the same as ownership rights and, as documented by LLS (1999), CDL (2000), and Faccio and Lang (2002), the share of voting rights held by dominant shareholders often exceeds their proportionate claim on cash flows. CDFL (2002) report that the value discount in firms with a dominant shareholder is greater the larger is the difference between proportionate voting and cash flow rights of the dominant shareholder. Thus, for each of the 839 firms in our sample, we also determine the fraction of cash flow rights owned by the dominant shareholder by taking the fraction of cash flow rights held by the dominant shareholder and multiplying that fraction by the fraction of shares owned in each firm in the ownership tree. Thus, if the ultimate dominant shareholder is the Smythe family that owns 50% of the shares in Company C and Company C owns 12% of the shares in Company B who owns 18% of the cash flow rights and 30% of the voting rights of Company A, we designate the Smythe family as

[11] In addition, there are three instances in which we identify at least one dominant shareholder, but for the purposes of our analyses we deem these firms to be widely held. First, in the case of a tie between the ultimate voting rights of two different ultimate owners, we consider the firm to be widely held. Second, if, because of cross-holdings, a firm is its own largest holder, we consider the firm to be widely held. Third, we consider a firm to be widely held if a financial institution holds a significant percentage of the equity of the firm as a trustee for its employees' 401K plan. These three situations occur in six firms.

controlling 30% of the voting rights of Company A and owning (0.50 x 0.12 x 0.18) x (100) = 1.08% of the cash flow rights.

II.B Affiliated directors

Having identified firms with dominant shareholders, we use Bloomberg, Reuters, *EDGAR International*, corporate websites, and direct contact with the companies to identify directors as of year-end 2002. From this effort, we are able to find board data for all but 40 firms leaving a set of 799. We conduct our empirical analyses with these.

Determination of whether a director is affiliated with the dominant shareholder involves some subjectivity on our part and will necessarily embed errors. As a guide for this determination, we draw upon recent corporate governance mandates and/or *Codes of Best Governance Practice* from various of the countries in our sample. Such codes urge that publicly-traded firms have more independent directors and provide some general guidance as to scenarios under which a director's independence might be compromised.[12] Using the *Codes* as a guide, we consider a director to be affiliated with the dominant shareholder when (1) he/she is the dominant shareholder, (2) he/she is an employee of the firm,[13] (3) he/she is a director or employee in any company or subsidiary of any company that is positioned above the sample firm in the ownership tree (if there is one), (4) he/she has the same family name as the dominant shareholder, (5) he/she is of the same

[12] For example, the *Australian Bosch Report on Corporate Practices and Conduct (1995)* stipulates that director independence is more likely to be assured when the director is not a substantial shareholder of the firm. The *Belgian Commission of Corporate Governance* (1998) recommendations call for more directors that do not serve on boards of related firms and who have no family ties to executives. In Greece, the *Principles of Corporate Governance* (1999) prescribe more independent directors, defined as unrelated to the majority owner and having no conflicts of interest. The report prepared by the *OECD on Corporate Governance: Improving Competitiveness and Access to Capital in Global Markets (1998)*, advises "board independence usually requires that a sufficient number of board members not be employed by the company and not be related to the company or its management through significant economic, family or other ties."

[13] We should note that, by far, the vast majority of employee directors are managers. The exception is Germany wherein boards are required to include labor representatives.

nationality as the dominant shareholder when the dominant shareholder is a foreigner, or (6) he/she is a politician or employee of a government agency when the dominant shareholder is a government. Directors who are not identified as being affiliated with the dominant shareholder are designated as 'independent.'

II.C Legal system

The quality of legal protection afforded to minority shareholders is often viewed as comprising two elements: (1) statutory provisions (often termed de jure protection) and (2) the degree to which the statutes are enforced (often called de facto protection). Following Almeida and Wolfenzon (2005), DKS (2004b), DK (2005), Wurgler (2000), and others, we use the product of two indices as our primary proxy for the quality of legal environment. The first is the Anti-director Rights index of LLSV (1998) that ranges from 0 to 6. The second is the Law and Order enforcement index taken from the *International Country Risk Guide* and rebalanced to range from 0 to 10.[14] We refer to this product as LEGAL in our regression analysis. The use of this measure has become somewhat customary in testing hypotheses involving standards of corporate governance. Nevertheless, we should note that this index is still only a proxy for the difficult-to-capture idea of 'quality' of legal shareholder protection.

II.D Tobin's Q and other financial data

Our primary dependent variable is the book value of assets minus the book value of equity plus the market value of equity divided by the book value of assets (often referred to as Tobin's Q). We calculate these ratios as of the end of years 2002, 2003, and 2004. For 712 firms, data for calculation of Q are from the *Edgar International Database*. For the remaining 87 firms, data are from *Worldscope*.

[14] Anti-director and Law and Order index values are for year-end 2003.

In conducting our primary analysis, we delete firms whose Qs are in the top and bottom 1% of the distribution. We use this sample of 782 firms with a dominant shareholder in our initial analysis. Of the dominant shareholders, 347 are individuals or families, 226 are privately-held operating or holding companies, 101 are privately-held financial institutions, such as investment funds, and 108 are governments.

Control variables used in the analysis include one-digit SIC codes, annual sales, sales growth from 2001-2003, intangible assets as a fraction of total assets, 'need for funds' calculated as the difference between historical growth of assets and sustainable growth of assets (i.e., ROE/(1-ROE)) measured over 2002-2003[15], and variance of stock returns calculated with monthly returns over the 24 months 2001-2002. Tobin's Q is often thought of as reflecting a firm's future investment or growth opportunities. The control variables are meant to control for differences in growth opportunities across firms. The balance sheet data are for year-end 2003 and are from *Worldscope* and *Edgar International*. The SIC code is the firm's primary industry from *Worldscope*. The final variable is a 1/0 indicator to identify firms whose shares are traded either as a direct listing on a US stock exchange or as an American Depository Receipt (ADR). This variable is from the Bank of New York and JP Morgan ADR/Cross-listing databases and is meant to capture the possibility that cross-listing on a US exchange improves governance and increases firm value ((BW (2004), DKS (2004b), Siegel (2005), RW (2002)). The sample contains 232 such firms. We refer to this variable as CROSS-LIST.

II.E Some descriptive statistics

Table I presents descriptive information for the 782 firms by country of incorporation. Column 1 gives the number of firms by country. Because of the method

[15] As developed by Demirguc-Kunt and Maksimovic (1998) and also used by Durnev and Kim (2005).

used to gather data, we have the largest firms (by equity market capitalization) in each country, but we do not have an equal number of firms from each country. For example, the US is vastly under-represented. This occurs because, among the 70 largest US firms, there are only 16 with a dominant shareholder. Similarly, Japan is under-represented because its largest corporations are owned in a Keiretsu structure whereby the dominant shareholder is widely-held. The number of firms by country ranges from 10 in Japan to 56 in Italy. Column 2 gives LEGAL, the product of the Anti-director Rights and Law and Order indices.[16] This index ranges from 3.3 in Mexico to 50 in the US and the UK.

As displayed in column 3, the mean percentage of independent directors by country ranges from 74.6% in the US to 36.5% in Hong Kong. As shown in columns 4 and 5, there is substantial variation in board composition across firms within countries. For example, the maximum and minimum percentages of independent directors are 45.5% and 93.3% in the US, while they are 0.0% and 100% in France and Germany. Columns 6 – 8 show that there is considerable variation in board size both across and within countries.

The table also gives the mean percentage voting rights (column 9) and cash flow rights (column 10) of the dominant shareholder. In each country, the mean percentage voting rights of the dominant shareholder exceeds his mean percentage cash flow rights with a spread between the two of 0.6% in Mexico up to a spread of 18.6% in Italy.

The final set of data in table I are the mean, minimum and maximum Tobin's Q for firms in each country. Across countries, the mean Q ranges from 1.03 in Brazil to 2.07 in Australia. As with board composition and board size, Qs show considerable

[16] The individual components of the indices are available from the authors.

within country variation. For example, Qs range from 1.03 to 5.29 in Australia and from 0.74 to 6.67 in India.

We now investigate whether the variation in Q ratios across firms is systematically related to board composition.

III. Univariate Statistical Analysis

Table II presents the results of preliminary statistical analysis. Panel A gives mean and median Qs according to the level of legal shareholder protection, LEGAL. Countries are classified into three groups according to LEGAL with the eight countries having LEGAL ≥ 30 in group 1, the five countries with 30 > LEGAL ≥ 20 in group 2 and the nine countries with LEGAL < 20 in group 3. Qs vary systematically across levels of shareholder legal protection with higher protection associated with higher Qs: the mean Q of 1.58 for group 1 is significantly greater than the mean Q of 1.38 in group 3 (p-value = 0.01). The test of medians supports the test of means (p-value < 0.01). Stronger country-level legal shareholder protection is associated with higher firm values.

Panel B of table II, gives mean and median Qs when the sample of firms is split into three groups according to the percentage of independent directors. Firms with more than 66.7% independent directors comprise group 1, firms with 33.3% to 66.7% independent directors comprise group 2, and firms with less than 33.3% independent directors comprise group 3. Mean and median Qs increase monotonically with the increase in the fraction of independent directors and the differences in means and medians between groups 1 and 3 are statistically significant (p-values < 0.01). 'Stronger' boards are associated with higher market values.

Panel C of table II gives mean and median Qs for three groups of firms according to board size: those with boards having 7 or fewer directors (small boards), those with 8 to 11 directors, and those having 12 or more directors (big boards). The three groups contain approximately equal numbers of firms. Mean and median Qs tend to decline as board size increases, but the decline in medians is not monotonic across the three groups. Thus, larger boards tend to be associated with lower market values, but the relationship is not pervasive.

LLSV (2002) report that, in firms with a dominant shareholder, Q is positively related to the percentage of cash flow rights owned by the dominant shareholder. They interpret this to mean that higher cash flow ownership increases the incentive of the dominant shareholder to increase corporate value. In panel D of table II, firms are sorted into three groups according to the percentage cash flow rights of the dominant shareholder. In group 1, the dominant shareholder has cash flow rights > 45.6%, in group 2, 45.6% ≥ cash flow rights ≥ 20.6%, and in group 3, cash flow rights < 20.6%. The three groups have roughly equal numbers of firms. On a univariate basis, neither mean nor median Qs increase as cash flow rights of the dominant shareholder increase and the differences in mean and median Qs between the high cash flow and low cash flow ownership groups is not statistically significant. On a univariate basis, higher cash flow rights on the part of the dominant shareholder are not associated with high firm values (at least not in our sample of firms with a dominant shareholder).

IV. Multivariate Statistical Analysis

IV.A Base case regressions

The result of primary interest from our univariate analysis is that, in firms with a dominant shareholder, firm value varies positively with the fraction of directors who are 'independent' of the dominant shareholder. We now examine that relationship with a multivariate regression analysis. Consistent with CDFL (2002), DK (2005), LLSV (2002) and others, we use a country random effects specification. Henceforth, we use INDDIR% to represent the percentage of the board made up of independent directors.

Column 1 of table III presents the results of what can be thought of as our 'base case' regression. The dependent variable is the Q ratio where Q is calculated as the average of the year-end 2002 and 2003 market-to-book value ratios for each firm. The independent variables include LEGAL, the CROSS-LIST indicator set to one if the firm has a US-traded stock or ADR as of year-end 2002, the dominant shareholder's percentage cash flow rights, an interaction term of percentage cash flow rights multiplied by LEGAL, ln (sales) for the fiscal year 2003, the ratio of intangible assets to total assets, the geometric average sales growth rate over the interval 2001-2003, 'need for external financing' as defined above, and the variance of stock returns. The regression also includes the one-digit industry SIC code for each firm. Unless indicated otherwise, we include each of these independent variables in our subsequent regressions.

The regression in column 1 does not include our key independent variable, the percentage of the board made up of independent directors, nor does it include ln (board size). Rather, this regression asks whether the results of prior studies are robust in our data.

Consistent with LLSV (2002), DK (2005) and others, the coefficient of LEGAL is positive and significant (p-value = 0.04). Also consistent with LLSV (2002), the

coefficient of dominant shareholder's cash flow rights is positive and (arguably) significant with a p-value of 0.09, while the coefficient of the interaction of cash flow rights and LEGAL is negative and also (arguably) significant (p-value = 0.09). In subsequent regressions, these results are essentially unchanged except that in some specifications, the p-value of LEGAL creeps upward and reaches 0.11 in one specification. Thus, in firms with a dominant shareholder, firm value is positively correlated with the country-level of legal shareholder protection and with the fraction of cash flow rights held by the dominant shareholder and negatively correlated with the interaction of these terms. The implication is that firm value is higher in countries with stronger shareholder legal protection and is higher when the dominant shareholder has a larger cash flow ownership position. However, the combination of these two factors is not additive.

The coefficient of the CROSS-LIST indicator is positive, but the p-value is only 0.16. In later specifications, the p-values for this variable range from 0.09 to 0.56. This result differs from DKS (2004b), but their sample includes nearly 5,000 observations. The coefficient of CROSS-LIST in our regression is a bit smaller than in theirs, but the major difference is the size of the standard errors. We cannot conclude that cross listing on a US exchange does not increase firm value.

Of the control variables, the only one that is statistically significant is ln (sales) (p-value < 0.01). Consistent with DK (2005), the coefficient is negative indicating that Q decreases as firm 'size' increases. This result is also robust to each of our later specifications.

The regression in column 2 of table III is a minor variation on the regression in column 1 such that column 2 can also be thought of as a base case regression. The only difference in column 2 is that the dependent variable Q is the average of the 2003-2004 firm market-to-book values. We use this lead/lag specification because we will subsequently be concerned with the possible endogeneity of Q and INDDIR%. One simple way to address this concern is to lag Q relative to the point in time at which the composition of the board is determined.

Suffice it to say that the results in column 2 are essentially the same as those in column 1 except that the p-value of LEGAL increases from 0.04 to 0.08.

IV.B Percentage independent directors

We now estimate regressions with our two board variables - - INDDIR% and board size - - included as independent variables. In columns 3 – 5, we estimate regressions with various specifications of INDDIR% along with ln (board size).

Column 3 is a linear specification of INDDIR%. The coefficient of INDDIR% is positive and statistically significant (p-value = 0.02), while the coefficient of ln (board size) is negative and significant (p-value = 0.05). The regression in column 4 uses a quadratic specification of INDDIR%. The linear term continues to be significant (p-value = 0.03), while the coefficient of the squared term is negative and 'borders' upon statistical significance (p-value = 0.12). Additionally, the adjusted r^2 is mildly higher with the quadratic specification suggesting a positive, but non-linear relationship between Q and the percentage of independent directors. The coefficient of ln (board size) continues to be negative and significant (p-value = 0.04).

The regression in column 5 uses the specification of ln (INDDIR%). Because there are 12 firms with zero independent directors and ln (0) is undefined, we drop these 12 observations from the sample. The coefficient of ln (INDDIR%) is positive and statistically significant (p-value = 0.02) as is the coefficient of ln (board size). Further the adjusted r^2 increases relative to the linear and quadratic specifications. For that reason, we use the log specification in our subsequent analyses. (As an aside, we also replicated every regression that we estimate later with the linear and quadratic specifications and the results are essentially unchanged.) The implication of columns 4 and 5 is that firm value increases at a decreasing rate as the percentage of independent directors increases (in firms with a dominant shareholder).

For their measure of country-level legal protection, LLSV (2002) use two different specifications. The first is their Anti-director Rights index; the second is the origin of the country's legal system (either common law or civil code). In regression 6, we replace LEGAL with the LLSV (2002) Anti-director Rights index updated to 2003 and we replace the interaction of cash flow rights with LEGAL by the interaction of cash flow rights with the Anti-director Rights index. Consistent with LLSV (2002), the coefficient of the Anti-director Rights index is positive with a p-value of 0.09 and the coefficient of interaction term is negative (but, unlike LLSV (2002), with a p-value of 0.05, the coefficient is statistically significant). In column 7, we replace LEGAL with an indicator equal to one in countries that have a common law origin and zero for all other countries and we interact the dominant shareholder's percentage cash flow rights with the indicator. Contrary to LLSV (2002), the coefficient of legal origin is not significant (p-value = 0.44). In both regressions 6 and 7, the coefficient of ln (INDDIR%) continues to

be positive and statistically significant (p-values = 0.02) and the coefficient of ln (board size) continues to be negative and statistically significant (p-values = 0.02).

As we noted, one concern with our analysis is that board composition and Q are endogenously determined. One simple approach to addressing endogeneity is to lag the dependent variable relative to the determination of key independent variable. In the final regression of table III, we use lagged Q calculated as the average of year-end 2003-2004 market-to-book ratios and board composition as of year-end 2002 along with LEGAL and our other variables from regression 1. In this specification, the p-value for LEGAL slips to 0.11. The p-value of ln (INDDIR%) is 0.05. The coefficient of ln (board size) is negative but the p-value is 0.20.

The answer to the first question that we posed at the outset is affirmative: in firms with a dominant shareholder, the documented value discount can be offset, at least in part, by a dominant shareholder appointing an 'independent' board. This offset can even be achieved for firms with shares or ADRs traded on a US exchange. That is, a dominant shareholder can add further value to his firm by appointing a strong board even if the firm's shares are traded on a US exchange.

IV.C Percentage independent directors when legal protection is weak

The second question that we posed is whether board composition has a differential effect in countries with strong vs. weak levels of legal protection for shareholders. It can be argued that a strong board is likely to be more valuable in a country with weak legal shareholder protection because the potential for value added therein is greater given that shareholders are already protected in countries with strong legal environments. Contrarily, it can be argued that a 'strong' board would have little

effect in a country with weak legal protection because the board is fundamentally at the mercy of the dominant shareholder in the absence of a protective legal environment. Under this argument, a 'strong' board might be more valuable in a country with a stronger legal environment where the board might have greater leverage through the legal system. The regressions presented in table IV address these arguments.

In particular, we estimate regression 5 of table III for countries with different levels of LEGAL. In parallel with the groupings in the univariate analysis of table II, we estimate the regression separately for the eight countries with LEGAL $\geq$ 30 (i.e., high shareholder protection countries) and the nine countries with LEGAL < 20 (i.e., low protection countries). The results are given in columns 1 and 2 of table IV.

As shown in column 1, the coefficient of ln (INDDIR%) is positive and statistically significant in the low protection sample (p-value < 0.01). As shown in column 2, the coefficient is close to zero with a p-value of 0.71 in the high protection sample. Further, the coefficient of ln (INDDIR%) in the low protection group is significantly greater than the coefficient in the high protection group (p-value < 0.01).

The median value of LEGAL is 20. As a further test, we estimate the regression with firms from the 12 countries with LEGAL $\leq$ 20 and with firms from the 10 countries with LEGAL > 20. The results of these regressions are given in columns 3 and 4. The coefficients of ln (INDDIR%) and their p-values in these two columns are essentially the same as those of columns 1 and 2.

Thus, the tests in table IV indicate that a 'strong' board is more important in offsetting the value discount associated with a dominant shareholder in a country with weak legal protection for shareholders. This suggests that a dominant shareholder who is

so inclined could offset, at least in part, the value reduction associated with weak legal shareholder protection by appointing a strong board and this effect appears to be more consequential in countries with weaker legal protection for shareholders.

V. Tests of Robustness

In this section, we take up the question of whether the results of tables III and IV are robust. We begin by estimating a two-stage instrumental variables regression (2SIV) model to address the ever-present concern that the results are due to endogeneity. We then consider other specifications of the regressions in tables III and IV.

V.A Endogeneity addressed with instrumental variables regressions

We estimate a linear system of two equations with Tobin's Q and INDDIR% as the endogenously determined variables. The estimation technique we use is two-stage least squares instrumental variable regression (2SIV) which requires that we find suitable instruments for the endogenous variables. A suitable instrument is one that is correlated with the endogenous variable but not with the error terms in the regression equation in which this variable is used as a regressor.

In line with Campa and Kedia (2002), DK (2005), HW (1991) and others, we use prior year's variables as instruments for Tobin's Q. Specifically, we use prior year's Q and the logarithm of prior year's sales. DK (2005) and Lins (2003) argue that industry indicators are also suitable instruments because they affect Q, but do not affect corporate governance. We, therefore, also use one-digit SIC indicators as instruments for Q.

In line with Demsetz and Villalonga (2001), DK (2005), and Lins (2003), we use the alpha and beta of the firm's stock returns as instruments for INDDIR%. When available, we use the alpha and beta from *Worldscope* as of 2002. When the data are not

available in *Worldscope*, we estimate the firm's alpha and beta using OLS regressions and the 24 monthly returns over 2001-2002 from *Datastream*.

In the first stage of the 2SIV procedure we regress INDIRR% and Tobin's Q on all exogenous and predetermined variables in the system. We then use the predicted values from the first stage as regressors in the second stage. We estimate two systems of equations. One of them employs the firm's average Qs for 2002-2003 and the other the average Qs for 2003-2004. The independent variables are the same as those in regression 5 in table III except that we also include country indicators and we exclude industry indicators from the board composition regressions. Results from the second stage of the estimation are reported in table IV.

As shown in the first regression of panel A, the coefficient of LEGAL is positive and significant as a predictor of ln (INDDIR%) (p-value = 0.06). That is, firms in weak legal environments have fewer independent directors. The coefficient of ln (board size) is positive and significant: larger boards have a higher percentage of independent directors.

In the second regression of panel A, in which the dependent variable is the predicted Tobin's Q for 2002-2003, ln (INDDIR%) is positive and significant (p-value = 0.03). The coefficient of board size continues to be negative, but its p-value slips (p-value = 0.11) and LEGAL loses statistical significance (p-value = 0.13).

The third and fourth regressions of table V are the same as the first two except that Q is the lagged average of 2003 and 2004 firm market-to-book ratios. The results of regressions three and four are quite similar to those of regressions one and two. In sum, based on the 2SIV analysis, firm value depends upon board composition and possibly

board size and legal environment, but board composition does not appear to depend upon firm value. That is, causality appears to run in one direction only.

Panel B of table V shows the results when the system is estimated separately for firms in countries with weak legal shareholder protection (LEGAL < 20) and for those in countries with strong shareholder protection (LEGAL ≥ 30). In these regressions, we are asking whether the coefficient of board composition (i.e., INDDIR%) is larger and more significant in countries with weaker shareholder protection after controlling for possible endogeneity.

The results here are similar to those of table IV. As in table IV, in countries with weak legal protection for shareholders, the coefficient of ln (INDDIR%) is positive and statistically significant (p-value = 0.04). In countries with strong shareholder protection, the coefficient of INDDIR% is also positive, but much smaller and not statistically different from zero (p-value = 0.15). Additionally, the coefficients of INDDIR% from the two regressions are significantly different from each other (p-value = 0.01).

In short, the results in table V provide some assurance that the relationships in tables III and IV are not the result of reverse causality or spurious endogeneity.

V.B Fixed country effects

The random country effects specifications in tables III and IV are supported by the Breusch and Pagan (1980) Lagrange multiplier test and the Hausman specification test. Nonetheless, we recognize that the countries in our sample may not be 'truly' representative of the population. As an alternative, we estimate the regressions in tables III and IV with country fixed effects. In the six regressions that correspond to the last six in table III, the p-values of the coefficients of INDDIR% range from 0.02 to 0.06. In the

four regressions that correspond to those in table IV, the coefficients of INDDIR% are statistically significant in the set with low LEGAL scores (all p-values < 0.10), but are not close to significant in those with high LEGAL scores (p-values > 0.31). In short, the results with country fixed effects regressions are nearly identical to those with country random effects.

V.C Full sample including Q outliers

Our regressions to this point have used a trimmed sample in which we dropped the 17 firms with Qs in the top and bottom 1% of the distribution so as to ensure that our results would not be due to outliers in our independent variable. We also estimate each of the regressions in tables III and IV using the full set of 799 firms for which we have data. In five of the six regressions that correspond to those in table III, the p-value of INDDIR% is less than 0.05. In the sixth, the lagged regression, the p-value is 0.10. In the regressions that correspond to those of table IV, for the two that encompass countries with low LEGAL scores, the coefficients of INDDIR% are positive and statistically significant (p-value < 0.01). For those that include countries with high LEGAL scores, the coefficients do not approach statistical significance (p-values > 0.55). Thus, our results are not due to the use of a trimmed sample.

V.D Criterion for dominant shareholders

As our criterion for a dominant shareholder, we require that a shareholder control more than 10% of the firm's votes. An argument can be made that 10% is too few shares to own for a shareholder to be able to unilaterally appoint the firm's board of directors. To consider what effect altering this criterion has on the results, we replicate the regressions of tables III and IV including only firms in which the dominant shareholder

controls at least 15% of the votes and then using a 20% cutoff. The 15% cut-off reduces the sample by 103 firms, while the 20% cutoff reduces it by an additional 61 firms. In the regressions that correspond to those in table III, with both the 15% and the 20% cutoff, the coefficients of INDDIR% are all positive and each of the p-values is slightly smaller than its counterpart in table III.

In the regressions that correspond to those of table IV, with both the 15% and the 20% cutoff, for those regressions that include countries with low LEGAL scores, the coefficients of INDDIR% are positive and statistically significant (p-values < 0.01). For those that include countries with high LEGAL scores, the coefficients do not approach statistical significance (p-values > 0.57).

Of course, as we continue to raise the threshold as to what constitutes a dominant shareholder, the sample continues to shrink and, not surprisingly, the coefficients of INDDIR% become less significant. Thus, this analysis involves a trade-off between determination of a dominant shareholder and sample size. At the customary cut-offs for determination of a dominant shareholder, our initial results are robust.

V.E Wedge

As have LLSV (2002), we use cash flow rights to capture any incentive effect of share ownership in firm value. Using a variation on this theme, Baek, Kang, and Park (2004) and CDFL (2002) find that Q varies inversely with the difference between the voting rights and cash flow rights owned by the firm's largest shareholder. CDL (2000) refer to this difference as the "wedge" between control and cash flow rights. We borrow this term and calculate the wedge between the percentage voting rights and the

percentage cash flow rights of the dominant shareholder as the percentage voting rights less the percentage cash flow rights.

We experimented with numerous specifications using wedge in place of cash flow ownership. In none of the regressions is wedge significant. Thus, in firms in which there is a shareholder with dominant or controlling voting rights, greater cash flow ownership by the dominant shareholder is associated with higher valuation, but the magnitude of the spread between the dominant shareholder's voting rights and cash flow ownership does not seem to influence valuation in our sample. Our results could be due to the fact that we only include firms with a dominant shareholder, whereas, other studies that explore wedge include a broader set of firms. Importantly, though, in each of the regression specifications with wedge, the coefficient of the INDDIR% has the same signs and levels of significance as in tables III and IV.

V.F Government controlled firms

Unlike some prior studies that examine the role of dominant shareholders, we exclude firms whose dominant shareholder is a widely-held firm. Our reasoning is that the theoretical models regarding the effect of a dominant shareholder are built on the presumption that a dominant shareholder diverts firm resources for personal consumption. It is difficult to envision what it means for a widely-held firm to have personal consumption. But we do include firms in which the government is the dominant shareholder on the presumption that government implies a bureaucrat who may well be able to divert resources. Still, it could be argued that governments no more consume than do widely-held corporations.

Thus, we exclude firms whose dominant shareholder is a government. This reduces the sample to 674 observations. With this set of firms, we re-estimate each of the regressions of tables III and IV. In the regressions that correspond to the last six in table III, the coefficients of INDDIR% are all positive with p-values that range from 0.04 to 0.09. In the four regressions that correspond to those in table IV, the coefficients of INDDIR% are positive and statistically significant in the set with low LEGAL scores (p-values < 0.05), but are not close to significant in those with high LEGAL scores (p-values > 0.61).

V.G Industry-adjusted Qs

The regressions in tables III and IV include one-digit industry indicators to control for any systematic industry effects in board composition. As an alternative, we omitted industry indicators and replicated the regressions using industry-adjusted Qs and industry-adjusted sales growth along with the other variables in the tables. To compute industry-adjusted Q, for each firm, we subtract the average of the firm's home country one-digit industry Q for 2002-2003 from the firm's 2002-2003 average Q. Industry-adjusted sales growth is the difference between the geometric growth in sales over 2001-2003 for a sample firm and its one-digit home country industry average geometric sales growth over the same interval.

For the regressions that correspond to those in table III, each of the coefficients of INDDIR% is positive with a p-value ≤ 0.07. In the four regressions that correspond to those of table IV, for the two that encompass countries with low LEGAL scores, the coefficients of INDDIR% are positive and statistically significant (p-values < 0.01). For

those that include countries with high LEGAL scores, the coefficients do not approach statistical significance (p-values > 0.34).

V.H A comparison with CLSA scores

DK (2005) and KL (2004) use CLSA scores in conducting their primary analyses of the effect of firm-specific governance on firm value. As we noted, board factors comprise a component of these scores. It could be argued that there is some other objective or subjective firm-specific aspect of the 'quality' of governance that explains the connection between firm value and *CLSA* scores and that other factor just happens to be correlated with board composition. Thus, what we are observing is a spurious correlation between INDDIR% and firm value.

Desirably, we would conduct a competition between *CLSA* scores and INDDIR% to determine which has the most explanatory power for Q. Unfortunately, the *CLSA* scores are available only for emerging markets (primarily Southeast Asia) and we are able to find board composition for only five of the *CLSA* countries**.** In terms of firms, only 67 in our sample have *CLSA* scores (13, 15, 16, 5 and 18 from Brazil, Hong Kong , India, Korea and Malaysia, respectively). The lack of overlap in the two samples precludes an extensive head-to-head competition. Additionally, Credit Lyonais has discontinued this service, thus, the latest available *CLSA* scores are as of 2001.

Nevertheless, as a partial test, we estimated regression 5 of table III using only the 67 firms in our sample for which *CLSA* scores are available. The coefficient of ln (INDDIR%) is positive with a p-value of 0.09. We then estimated the regression using the COMPOSITE *CLSA* score from DK in lieu of ln (INDDIR%). The coefficient of COMPOSITE is positive, but the p-value is only 0.24. Based on this limited analysis,

board composition overlaps with but captures some element of governance that is not encompassed by the *CLSA* scores. Given that *CLSA* has discontinued this service, board composition may convey whatever information is contained in the *CLSA* score and, thus, be a robust surrogate.[17]

V.I In sum

As in every empirical investigation, conducting our analyses involves a multitude of decisions about sample selection, empirical methodologies, variable selection, and variable specification. Any or each of these can influence the results of a study. We have examined the sensitivity of our results to alternative decisions regarding each of these factors. As best we can determine, the primary conclusions drawn from our analyses are not due to the choices made.

VI. Commentary and Conclusion

A by-product of our analysis is the finding that, after controlling for country-level legal protection, board composition, and other factors, the size of the board is negatively correlated with firm value, although the relationship is not always statistically significant. This result is generally consistent with the findings in studies by Eisenberg, Sundgren, and Wells (1998), Kusnadi and Mak (2005), and Yermack (1996) that larger boards are associated with lower firm values in Finland, Southeast Asia, and the U.S., respectively

Given that our results suggest that dominant shareholders in weaker legal regimes can, at least in part, offset the loss in value due to weak legal shareholder protection by establishing a strong board, the question arises as to whether a strong board can fully make up for the lack of strong legal protection. To address that question, we

[17] We have been told by Credit Lyonnais that this service was discontinued, at least in part, because of the unhappiness of some clients with their scores.

conduct numerical analyses with the coefficients of our cross-sectional regressions. As might be expected, the degree to which a strong board can offset the loss in value due to weak country-level legal shareholder protection depends on the initial level of investor protection and the level to which the dominant shareholder aspires. At the extremes, the numerical analysis indicates that a strong board cannot make up the difference in value associated with weaker legal shareholder protection. For example, with all else equal, the increase in Q in moving from a country with a legal protection index of 3.3 (such as Mexico at the bottom of the range) to a country with a legal protection index of 50.0 (such as the UK at the top of the range) is greater than the increase in value in moving from a board with 10% independent directors to a board with 90% independent directors in the same country.

For narrower differences in legal shareholder protection, a strong board can more than compensate for weaker country-level shareholder protection. For example, the gain in value in moving from a country with a legal protection index of 20 to an index of 40 is less than the gain in value by moving from a board with 10% independent directors to a board with 90% independent directors in the country with a legal index of 20. Thus, the data indicate that a dominant shareholder could ameliorate the loss in value associated with a firm having a dominant shareholder and, if the firm's home-country level of legal protection is not too weak, the dominant shareholder can offset the loss fully if he is so inclined.

Our analysis of 799 firms with dominant shareholders from 22 countries finds a positive and statistically significant relationship between firm value and the percentage of

the board made up of directors not affiliated with the dominant shareholder. This relationship is especially pronounced in countries with weak legal protection for shareholders. The implication is that, a dominant shareholder, were he so inclined, could raise the value of his firm by appointing an 'independent' board and this would be especially so in countries that provide weaker legal protection for shareholders.

Should the dominant shareholder decide to appoint a strong board, a question that arises is whether a sufficiently independent board could recover the full value discount associated with the firm operating in a weak legal environment. To address that question, we conduct numerical analyses with the coefficients estimated in column 5 of table III (the key variables are LEGAL and ln (INDDIR%)). To conduct the numerical analyses, we use the mean values of the independent variables and set the industry indicator to one for the manufacturing sector. We then vary LEGAL from 3.3 (which represents Mexico at the bottom end of the range) to 50 (which represents the US, the UK and Canada at the top end of the range). We vary INDDIR% from 10% to 90%. With these parameter values, we calculate implied Qs.

As a starting point, of course, given any board composition, firms with a dominant shareholder in countries with higher LEGAL scores have higher Qs than those in countries with lower LEGAL scores and, given any LEGAL score, firms with more directors who are not affiliated with the dominant shareholder have higher Qs than those with few directors unaffiliated with the dominant shareholder. The more interesting comparisons involve firms across LEGAL scores and with different board compositions. For example, the dominant shareholder in a country such as Mexico, with a LEGAL index of 3.3, could increase Q from 1.41 to 1.69 by increasing the percentage of

unaffiliated directors from 10% to 90%. In comparison, a dominant shareholder of a similar firm in a country such as the UK, with a LEGAL index of 50, could achieve a Q of 2.01 with a board composed of 90% affiliated directors. That is, even if he were so inclined, a dominant shareholder could not make up the full loss in value associated with very weak country-level shareholder legal protection by appointing a 'strong' board.

In contrast, a dominant shareholder in a country with moderate legal protection could compensate by appointing a strong board. For example, a dominant shareholder in a country such as India, with a LEGAL index of 20, could raise his firm's Q from 1.63 to 1.92 by increasing the percentage of independent directors from 10% to 90%. The increase in Q associated with this board restructuring is equivalent to raising legal protection from a score of 20 to 40 (the score in Australia). That is, in a country such as India, if he was so inclined, a dominant shareholder could achieve the Q of a firm in Australia by appointing an independent board (assuming that the Australian board has 10% independent directors).

Of course, the increase in value is not without cost to the dominant shareholder. In particular, the theoretical models that analyze the economics of firms controlled by a dominant shareholder predict a value discount in such firms and attribute the discount to diversion of corporate resources for personal use by the dominant shareholder. The cost to the dominant shareholder of a strong board is the loss of these perquisites of control. For the dominant shareholder, the question becomes one of trading off the personal value of these lost perquisites against the value increase in his shares. The value increase will only be valuable to the dominant shareholder if he expects to sell shares either from personal account or through the firm to raise capital for value increasing projects.

Otherwise, there would appear to be little incentive for the shareholder to unilaterally appoint a 'stronger' board.

In this framework, dominant shareholders are more likely to choose independent directors when their firms have profitable investment opportunities and a shortage of internal capital to fund them. All of this raises the question of what factors determine board composition. We have only explored that question peripherally here in the 2SIV analysis. However, there we find that the "need for funds" is negatively correlated with the fraction of independent directors. Thus, on a preliminary basis, this obvious factor does not seem to play a role in determining board composition across countries.

There have been studies of the determinants of board composition in the US, although they do not focus on firms with dominant shareholders. These include Boone, Field, Karpoff and Raheja (2005), Coles, Daniel and Naveen (2005), Lehn, Patro and Zhao (2005), and Linck, Netter and Yang (2005). Investigation of the determinants across countries with different levels of legal shareholder protection would be a useful next step in understanding the role of directors in firms with dominant shareholders.

Throughout we have emphasized that we are interested in the effect of board composition in firms with dominant shareholders. Our motivation is the observation that most publicly-traded firms outside the US are controlled by a dominant shareholder. But there are also firms outside the US that are widely-held. The definition of an independent director in such firms would be quite different from the definition used here. We consider directors to be affiliated if they share the same last name and have other direct ties to the dominant shareholder. In widely-held firms where there is no dominant shareholder with whom ties can be established, the primary agency conflict is often

thought of as being the conflict between management and shareholders rather than the conflict between a dominant shareholder and other investors. Whether a 'strong' board has a similar role in such firms is a further question to be explored.

A number of studies have examined the connection between board composition and firm value in US firms. These include AK (1996, 2001), BB (2002), and HW (1991, 2003). The consensus view from these studies is that there is no connection between board composition and firm value in the US. This conclusion is not inconsistent with ours. First, these studies do not focus on firms with a dominant shareholder. Second, the definition of an independent director in these studies differs from ours. Third, even in firms with a dominant shareholder, we find that the connection between board composition and value derives primarily from countries with low country-level legal protection, whereas, in countries with high legal protection, such as the US, board composition appears to have much less relation to firm value.

In conclusion, then, numerous questions about cross-country determinants of board composition remain unanswered. The key result of our study is that firm value is positively correlated with the fraction of directors unaffiliated with dominant shareholders especially in countries with weak legal protection for minority shareholders. The implication is that, were he so inclined, a dominant shareholder could increase the value of his firm by appointing a 'strong' board, especially in countries with weak legal shareholder protection.

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Table I
Descriptive statistics on firms with a dominant shareholder

This table gives statistics by country for a sample of 782 publicly traded firms with a dominant shareholder from 22 countries. A firm has a dominant shareholder if an individual, family, privately-held firm, or government controls at least 10% of the voting rights in the firm. LEGAL is the product of the Anti-director Rights index measuring de jure investor protection from LLSV (1998) and the Law and Order index measuring de facto investor protection from icrgonline.com. Percentage independent directors is calculated as the number of independent directors divided by board size. A director is considered independent if that board member is not an employee of the firm and (a) is not the dominant shareholder, (b) is not a board member in any other company or its subsidiary along the control chain, (c) does not have the same family name as the dominant shareholder, (d) is not of the same nationality as the dominant shareholder provided they are both foreigners, and (e) is not a member of government when the dominant shareholder is a government. Board size is the number of directors on the firm's board. Tobin's Q is the average 2002-2003 of (book value of assets – book value of equity + market value of equity) divided by (the book value of assets) and truncated at 1% and 99%. Percentage cash flow and voting rights of the dominant shareholder are computed as per Appendix A.

Country	(1) Firms	(2) LEGAL	(3) Percentage independent directors		(4)	(5) Board size		(6)	(7) Mean percentage voting rights of dominant shareholder	(8) Mean percentage CF rights of dominant shareholder	(9) Tobin's Q		(10)
			Mean	Min	Max	Mean	Min	Max			Mean	Min	Max
Australia	21	40	64.5	33.0	90.0	8.5	3	14	35.3	26.4	2.07	1.03	5.29
Belgium	52	15	48.7	0.00	90.0	8.8	2	20	46.6	29.9	1.47	0.71	3.31
Brazil	49	7.5	57.6	0.00	100	8.4	3	16	54.0	49.7	1.03	0.40	2.91
Canada	36	50	66.7	13.3	100	11.8	6	17	46.2	33.7	1.90	1.07	6.21
Denmark	51	20	43.4	11.1	85.7	7.9	3	13	33.1	31.2	1.34	0.76	6.38
Finland	39	40	66.3	20.0	100	6.6	3	11	37.7	29.9	1.47	0.77	4.04
France	39	22.5	56.9	0.00	100	11.6	3	21	44.6	32.5	1.70	0.91	6.67
Germany	30	16.7	56.6	0.00	100	14.8	3	22	49.8	37.4	1.66	0.89	4.12
Greece	52	10	51.8	0.00	90.9	8.2	3	16	48.1	42.7	1.88	0.59	5.06
Hong Kong	55	15	36.5	0.00	72.2	10.2	5	24	43.6	39.3	1.07	0.45	4.11
India	45	20	45.3	0.00	80.0	11.0	3	19	50.5	46.8	1.89	0.74	6.67
Italy	56	10	57.1	0.00	91.7	10.8	5	20	53.5	34.9	1.54	0.74	4.30
Japan	10	25	38.0	0.00	71.4	14.0	7	30	40.1	26.0	1.96	1.00	6.44
Korea	20	16.7	45.9	0.00	70.0	8.9	5	17	36.6	23.3	0.95	0.62	1.32
Malaysia	55	15	47.3	0.00	77.8	8.4	5	15	42.5	39.1	1.39	0.52	3.72
Mexico	25	3.3	54.0	25.0	80.0	11.9	4	18	55.7	55.1	1.15	0.77	2.16
Netherlands	27	20	48.2	0.00	80.0	10.1	4	24	30.4	27.9	1.50	0.62	3.48
South Africa	22	33.3	42.4	22.2	71.4	9.7	5	17	37.3	35.2	1.32	0.71	2.44
Spain	26	30	55.9	14.3	100	11.8	6	18	38.5	30.7	1.54	0.79	5.68
Sweden	37	30	46.6	14.3	83.3	10.3	5	16	29.7	28.1	1.36	0.59	5.12
UK	19	50	57.7	0.00	93.3	11.9	7	16	20.6	16.9	1.39	0.78	2.64
US	16	50	74.6	45.5	93.3	12.0	8	15	21.0	17.3	1.07	0.60	1.57

Table II
Tobin's Q across legal and firm-specific characteristics

This table reports the mean and median Tobin's Qs for 782 firms with a dominant shareholder from 22 countries listed in table I classified according to the country's level of investor protection and other characteristics. A firm has a dominant shareholder if an individual, family, privately-held firm, or government controls at least 10% of the voting rights in the firm. LEGAL is the product of the Anti-director Rights index and the Law and Order index as of 2003, where Anti-director Rights index is an index measuring de jure investor protection from LLSV (1998) and Law and Order index is an index measuring de facto investor protection from icrgonline.com. Percentage independent directors is calculated as the number of independent directors divided by board size. A director is considered independent if that board member is not an employee of the firm and (a) is not the dominant shareholder, (b) is not a board member in any other company or its subsidiary along the control chain, (c) does not have the same family name as the dominant shareholder, (d) is not of the same nationality as the dominant shareholder provided they are both foreigners, and (e) is not a member of government when the dominant shareholder is a government. Board size is the number of directors on the firm's board. Tobin's Q is the average 2002-2003 of (book value of assets – book value of equity + market value of equity) divided by (the book value of assets) and truncated at 1% and 99%. Percentage cash flow rights are computed as per Appendix A. P-values for one-sided tests are in parentheses.

Panel A: Tobin's Q classified by investor rights index LEGAL

	Sample Size	(1) Tobin's Q Mean	(2) Tobin's Q Median
LEGAL ≥ 30	216 (8 countries)	1.58	1.27
20 ≤ LEGAL < 30	172 (5 countries)	1.58	1.21
LEGAL < 20	394 (9 countries)	1.38	1.10
Difference in mean Qs between LEGAL ≥ *30 and* LEGAL < *20*		0.20 (0.01)	0.17 (0.00)

Panel B: Tobin's Q classified by percentage independent directors

	Sample Size	(1) Tobin's Q Mean	(2) Tobin's Q Median
Percentage independent directors ≥ 66.7	233	1.57	1.23
33.3 < Percentage independent directors < 66.7	387	1.49	1.13
Percentage independent directors ≤ 33.3	162	1.32	1.12
Difference in mean Qs between top and bottom group		0.25 (0.00)	0.11 (0.00)

Panel C: Tobin's Q classified by board size			
	Sample Size	(1) Tobin's Q Mean	(2) Tobin's Q Median
Board size ≤ 7	227	1.56	1.17
7 < Board size < 12	322	1.55	1.20
Board size ≥ 12	233	1.30	1.10
Difference in mean Qs between top and bottom group		0.26 (0.00)	0.07 (0.11)
Panel D: Tobin's Q classified by cash flow rights of dominant shareholder			
	Sample Size	(1) Tobin's Q Mean	(2) Tobin's Q Median
Percentage cash flow rights of dominant shareholder > 45.6	258	1.45	1.13
20.6 ≤ Percentage cash flow rights of dominant shareholder ≤ 45.6	264	1.47	1.16
Percentage cash flow rights of dominant shareholder < 20.6	260	1.52	1.21
Difference in mean Qs between top and bottom group		-0.07 (0.36)	-0.08 (0.22)

Table III
Regressions of Tobin's Q on LEGAL, INDDIR%, board size, and control variables

This table reports the coefficients and p-values for random country effects regressions using Tobin's Q as the dependent variable for 782 industrial firms with a dominant shareholder from 22 countries. A firm has a dominant shareholder if an individual, family, privately-held firm, or government controls at least 10% of the voting rights in the firm. LEGAL is the product of the Anti-director Rights index and the Law and Order index as of 2003, where Anti-director Rights index is an index measuring de jure investor protection from LLSV (1998) and Law and Order index is an index measuring de facto investor protection from icrgonline.com. Percentage independent directors is calculated as the number of independent directors divided by board size. A director is considered independent if that board member is not an employee of the firm and (a) is not the dominant shareholder, (b) is not a board member in any other company or its subsidiary along the control chain, (c) does not have the same family name as the dominant shareholder, (d) is not of the same nationality as the dominant shareholder provided they are both foreigners, and (e) is not a member of government when the dominant shareholder is a government. Board size is the number of directors on the firm's board. Tobin's Q is the average 2002-2003 or 2003-2004 of (book value of assets – book value of equity + market value of equity) divided by (the book value of assets) and truncated at 1% and 99%. Percentage cash flow rights are computed as per Appendix A. The natural log of sales and the ratio of intangible-to-total assets are as of year-end 2003. Sales growth and need for external financing, calculated as the difference between historical growth of assets and sustainable growth of assets (i.e., ROE/(1-ROE)), are measured over 2002-2003. The variance of stock returns is calculated with monthly returns over the 24 months 2001-2002. Coefficients are in the columns. P-values are in parentheses.

	Coefficients of country random effects regression models Dependent variable = Tobin's Q							
	Q 2002/2003 (1)	Q 2003/2004 (2)	Q 2002/2003 (3)	Q 2002/2003 (4)	Q 2002/2003 (5)	Q 2002/2003 (6)	Q 2002/2003 (7)	Q 2003/2004 (8)
Independent variables								
Intercept	2.917 (0.00)	3.168 (0.00)	2.985 (0.00)	2.738 (0.00)	3.404 (0.00)	3.214 (0.00)	3.609 (0.00)	3.468 (0.00)
LEGAL	0.015 (0.04)	0.011 (0.08)	0.013 (0.09)	0.013 (0.03)	0.013 (0.10)			0.011 (0.11)
Anti-director Rights index						0.159 (0.09)		
Origin of legal system							0.172 (0.44)	
INDDIR%			0.357 (0.02)	1.140 (0.03)				
INDDIR%^{2}				-0.823 (0.12)				
ln (INDDIR%)					0.181 (0.02)	0.184 (0.02)	0.186 (0.02)	0.136 (0.05)
ln (board size)			-0.191 (0.05)	-0.201 (0.04)	-0.236 (0.02)	-0.235 (0.02)	-0.244 (0.02)	-0.121 (0.20)
CROSS-LIST	0.108 (0.16)	0.042 (0.56)	0.117 (0.13)	0.101 (0.18)	0.135 (0.09)	0.129 (0.10)	0.127 (0.10)	0.060 (0.42)
CF rights	0.005 (0.09)	0.004 (0.10)	0.005 (0.10)	0.005 (0.09)	0.005 (0.08)	0.009 (0.04)	0.004 (0.10)	0.005 (0.08)
CF rights*LEGAL	-0.001 (0.09)	-0.000 (0.16)	-0.001 (0.11)	-0.001 (0.10)	-0.001 (0.10)			-0.001 (0.15)
CF rights*Anti-director Rights index						-0.003 (0.05)		
CF rights*Origin of legal system							-0.001 (0.10)	
ln (sales)	-0.139 (0.00)	-0.155 (0.00)	-0.124 (0.00)	-0.118 (0.00)	-0.124 (0.00)	-0.121 (0.00)	-0.118 (0.00)	-0.149 (0.00)
Intangibles/book assets	0.628 (0.43)	1.006 (0.19)	0.638 (0.44)	0.623 (0.45)	0.439 (0.60)	0.477 (0.56)	0.513 (0.54)	0.828 (0.28)
Sales growth	0.001 (0.58)	0.001 (0.43)	0.001 (0.37)	0.001 (0.41)	0.001 (0.31)	0.001 (0.31)	0.001 (0.29)	0.001 (0.24)
Need for external financing	-0.001 (0.82)	-0.001 (0.51)	-0.001 (0.57)	-0.001 (0.61)	-0.001 (0.49)	-0.001 (0.47)	-0.001 (0.49)	-0.001 (0.29)
Variance in stock returns	-0.479 (0.51)	-0.951 (0.16)	-0.516 (0.47)	-0.602 (0.40)	-0.407 (0.57)	-0.406 (0.58)	-0.442 (0.54)	-0.876 (0.20)
Industry indicators	YES	YES	YES	YES	YES	YES	YES	YES
Sample size	782	782	782	782	770	770	770	770
Adjusted r^2	0.0835	0.1160	0.0920	0.0937	0.0944	0.0941	0.0871	0.1229

Table IV
Regressions of Tobin's Q on ln (INDDIR%) and control variables for subsamples classified by LEGAL

This table reports the coefficients and p-values for random country effects regressions using Tobin's Q as the dependent variable for different subsamples of 770 industrial firms with a dominant shareholder from 22 countries classified by LEGAL. A firm has a dominant shareholder if an individual, family, privately-held firm, or government controls at least 10% of the voting rights in the firm. LEGAL is the product of the Anti-director Rights index and the Law and Order index as of 2003, where Anti-director Rights index is an index measuring de jure investor protection from LLSV (1998) and Law and Order index is an index measuring de facto investor protection from icrgonline.com. A director is considered independent if that board member is not an employee of the firm and (a) is not the dominant shareholder, (b) is not a board member in any other company or its subsidiary along the control chain, (c) does not have the same family name as the dominant shareholder, (d) is not of the same nationality as the dominant shareholder provided they are both foreigners, and (e) is not a member of government when the dominant shareholder is a government. Tobin's Q is the average 2002-2003 of (book value of assets – book value of equity + market value of equity) divided by (the book value of assets) and truncated at 1% and 99%. Percentage cash flow rights are computed as per Appendix A. The natural log of sales and the ratio of intangible-to-total assets are as of year-end 2003. Sales growth and need for external financing, calculated as the difference between historical growth of assets and sustainable growth of assets (i.e., ROE/(1-ROE)), are measured over 2002-2003. The variance of stock returns is calculated with monthly returns over the 24 months 2001-2002. Coefficients are in the columns. P-values are in parentheses.

	Coefficients from country random effects models			
	LEGAL <20	LEGAL ≥30	LEGAL ≤20	LEGAL >20
	Dependent variable = Tobin's Q 2002/2003			
	(1)	(2)	(3)	(4)
Independent variables				
Intercept	2.418 (0.00)	3.248 (0.00)	2.441 (0.00)	3.522 (0.00)
LEGAL	-0.018 (0.46)	0.015 (0.21)	-0.003 (0.85)	0.005 (0.59)
ln (INDDIR%)	0.280 (0.00)	0.054 (0.71)	0.337 (0.00)	0.112 (0.43)
ln (board size)	-0.077 (0.53)	0.042 (0.82)	-0.062 (0.61)	-0.211 (0.26)
CROSS-LIST	-0.114 (0.26)	-0.033 (0.80)	0.127 (0.19)	0.014 (0.92)
CF rights	-0.004 (0.52)	-0.009 (0.49)	-0.003 (0.53)	0.009 (0.39)
CF rights*LEGAL	0.001 (0.37)	0.000 (0.75)	0.001 (0.14)	-0.001 (0.23)
ln (sales)	-0.050 (0.09)	-0.163 (0.00)	-0.067 (0.02)	-0.129 (0.00)
Intangibles/book assets	1.743 (0.14)	-1.870 (0.13)	2.062 (0.07)	-1.737 (0.22)
Sales growth	0.000 (0.55)	0.007 (0.02)	-0.000 (0.94)	0.007 (0.00)
Need for external financing	-0.001 (0.69)	0.001 (0.57)	0.000 (0.67)	-0.000 (0.94)
Variance in stock returns	-1.130 (0.10)	0.985 (0.77)	-0.989 (0.18)	4.337 (0.23)
Industry indicators	YES	YES	YES	YES
Sample size	381	226	508	262
Number of countries	9	8	12	10
Adjusted r^2	0.1204	0.2412	0.1151	0.2084

Table V
Two-stage instrumental variables regressions of ln (INDDIR%) and Tobin's Q in firms with a dominant shareholder

This table reports the coefficients and p-values of simultaneous equations estimated by 2SIV for 770 industrial firms with a dominant shareholder from 22 countries. The dependent variables are INDDIR% and Tobin's Q. Tobin's Q is the average 2002-2003 or 2003-2004 of (book value of assets – book value of equity + market value of equity) divided by (the book value of assets) and truncated at 1% and 99%. INDDIR% is the percentage of independent directors. A director is considered independent if that board member is not an employee of the firm and (a) is not the dominant shareholder, (b) is not a board member in any other company or its subsidiary along the control chain, (c) does not have the same family name as the dominant shareholder, (d) is not of the same nationality as the dominant shareholder provided they are both foreigners, and (e) is not a member of government when the dominant shareholder is a government. The instruments for INDDIR% used in the first stage are the firm's market model alpha and beta (calculated by Worldscope using 23 and 35 monthly returns). The instruments for Tobin's Q are the prior year's Q, logarithm of prior year's sales, and single-digit SIC indicators. The coefficients on country indicator variables are included in the models but omitted from the table. A firm has a dominant shareholder if an individual, family, privately-held firm, or government controls at least 10% of the voting rights in the firm. LEGAL is the product of the Anti-director Rights index and the Law and Order index as of 2003, where Anti-director Rights index is an index measuring de jure investor protection from LLSV (1998) and Law and Order index is an index measuring de facto investor protection from icrgonline.com. Percentage cash flow rights are computed as per Appendix A. The natural log of sales and the ratio of intangible-to-total assets are as of year-end 2003. Sales growth and need for external financing, calculated as the difference between historical growth of assets and sustainable growth of assets (i.e., ROE/(1-ROE)), are measured over 2002-2003. The variance of stock returns is calculated with monthly returns over the 24 months 2001-2002. Coefficients are in the columns. P-values are in parentheses.

Panel A: Two-equation model estimated for all firms

	Coefficients from second stage of 2SIV			
	Dependent variables		Dependent variables	
	ln (INDDIR%) (1)	Q 2002/03 (2)	ln (INDDIR%) (3)	Q 2003/04 (4)
Independent variables				
Intercept	-0.604 (0.01)	3.342 (0.00)	-0.831 (0.00)	4.344 (0.00)
LEGAL	0.008 (0.06)	0.012 (0.13)	0.007 (0.09)	0.004 (0.75)
Tobin's Q	-0.009 (0.77)		0.052 (0.06)	
ln (INDDIR%)		0.405 (0.03)		1.135 (0.00)
ln (board size)	0.125 (0.01)	-0.164 (0.11)	0.150 (0.00)	-0.111 (0.30)
CROSS-LIST	0.053 (0.22)	0.092 (0.26)	0.042 (0.28)	-0.010 (0.93)
Cash flow rights	-0.001 (0.54)	0.003 (0.27)	-0.001 (0.42)	0.002 (0.59)
Cash flow rights* LEGAL	-0.001 (0.97)	-0.001 (0.35)	-0.001 (0.89)	0.001 (0.99)
ln (sales)	-0.036 (0.01)	-0.113 (0.00)	-0.032 (0.03)	-0.138 (0.00)
Intangible/book assets	0.102 (0.79)	-0.181 (0.83)	0.078 (0.84)	0.180 (0.83)
Sales growth	-0.001 (0.75)	0.001 (0.45)	-0.001 (0.71)	0.001 (0.50)
Need for external financing	-0.002 (0.23)	-0.001 (0.07)	-0.002 (0.36)	-0.001 (0.52)
Variance of stock returns	0.186 (0.59)	-0.789 (0.29)	0.241 (0.50)	-1.221 (0.11)
Industry indicators	NO	YES	NO	YES
Sample size	770	770	770	770
Adjusted r^2	0.1392	0.1109	0.1451	0.1609

Panel B: Two-equation model estimated separately for countries with LEGAL < 20 and LEGAL ≥ 30				
	Coefficients from second stage of 2SIV			
	Firms with LEGAL < 20		Firms with LEGAL ≥ 30	
	Dependent variables		Dependent variables	
	ln (INDDIR%) (1)	Q 2002/03 (2)	ln (INDDIR%) (3)	Q 2002/03 (4)
Independent variables				
Intercept	0.239 (0.85)	2.746 (0.00)	-3.008 (0.00)	3.757 (0.00)
LEGAL	-0.050 (0.53)	0.003 (0.86)	0.080 (0.00)	0.012 (0.37)
Tobin's Q	-0.066 (0.35)		0.007 (0.87)	
ln (INDDIR%)		0.444 (0.04)		0.241 (0.15)
ln (board size)	0.131 (0.07)	-0.139 (0.26)	0.221 (0.03)	0.036 (0.83)
CROSS-LIST	0.070 (0.25)	-0.140 (0.17)	0.080 (0.22)	0.006 (0.92)
Cash flow rights	-0.001 (0.74)	0.001 (0.83)	-0.001 (0.61)	-0.001 (0.73)
Cash flow rights* LEGAL	0.001 (0.56)	0.001 (0.73)	0.001 (0.72)	0.000 (0.97)
ln (sales)	-0.031 (0.09)	-0.045 (0.06)	-0.058 (0.00)	-0.178 (0.00)
Intangible/book assets	0.054 (0.94)	1.390 (0.23)	0.306 (0.54)	-1.830 (0.12)
Sales growth	-0.000 (0.88)	0.001 (0.53)	-0.001 (0.39)	0.008 (0.01)
Need for external financing	-0.002 (0.00)	-0.001 (0.30)	-0.000 (0.88)	-0.001 (0.90)
Variance of stock returns	0.327 (0.44)	-1.371 (0.04)	-2.912 (0.07)	2.663 (0.47)
Industry indicators	NO	YES	NO	YES
Sample size	381	381	226	226
Number of countries	9	9	8	8
Adjusted r^2	0.1192	0.1037	0.2120	0.2195

Appendix A
Data sources for the percentage of equity voting rights owned by the dominant shareholder in 799 firms with a dominant shareholder from 22 countries

The table reports the sources in the order accessed to collate equity ownership information. For each of an initial 1,455 sample firms, we extract the identity and percentage of voting rights of each shareholder who holds ≥ 10% of the outstanding voting rights. If such data are available in the first source listed, we use that source. If not, we move to the next source until we gather data for each firm. If data are unavailable for year-end 2002, we gather data from year-end 2001. If firms have two or more large shareholders, we examine block affiliation to determine whether combined ownership of voting rights exceeds the single largest shareholder. If so, these ownership stakes are combined to comprise the single largest shareholder. Using this procedure and moving up the ownership tree we establish that 1,055 firms had a dominant shareholder, where a dominant shareholder is an individual, a family, a company, or a government that controls at least 10% of the voting rights. The fraction of cash flow rights held by the dominant shareholder is determined by the fraction of cash flow rights held by the dominant shareholder in the sample firm multiplied by the fraction of voting rights in each firm in the ownership tree.

Country	***Equity ownership data sources***
Australia	Company WEB sites; Worldscope; Bloomberg; Major Companies of the Far East and Australasia, http://www.ibisworld.com.au.
Belgium	www.euronext.com; Major Companies of Europe; Mergent International Manuals; Bloomberg.
Brazil	Edgar international; Reuters; Bloomberg; Bovespa; Company WEB sites.
Canada	FP Survey of Industrials; www.sedar.com; Mergent International Manuals.
Denmark	Edgar International; Reuters; Bloomberg; Copenhagen Stock Exchange; Major Companies of Europe.
Finland	www.huginonline.com; Major Companies of Europe; Mergent International Manuals; Company WEB sites.
France	www.euronext.com; Major Companies of Europe; Company WEB sites; French Company Handbook.
Germany	Major Companies of Europe; Bundesaufsichtsamt für den Wertpapierhandel and Germany's Top 500; Company WEB sites; Bloomberg.
Greece	www.capitallink.com; Major Companies of Europe; Mergent International Manuals; Company WEB sites.
Hong Kong	Edgar International; Reuters; Bloomberg; Company WEB sites.
India	Edgar International; Reuters; Bloomberg; National Stock Exchange of India; Stock Exchange Board of India
Italy	www.consob.it; Bloomberg; Major Companies of Europe.
Japan	Japan Company Handbook; Company WEB sites; Bloomberg.
Korea	Stock Market Division of the KRX; Reuters; Bloomberg; Company WEB sites.
Malaysia	Bursa Malaysia; Kuala Lumpar Stock Exchange; Reuters; Bloomberg; Edgar International; Company WEB sites.
Mexico	Bolsa Mexicana de Valores; Reuters; Bloomberg; Edgar International; Company WEB sites.
Netherlands	Reuters; Bloomberg; Edgar International; Major Companies of Europe, Company WEB sites
Spain	www.cnmv.es; Major Companies of Europe, Mergent International, Company WEB sites; Bloomberg.
S. Africa	Edgar International; Reuters; Bloomberg; Johannesburg Stock Exchange.
Sweden	Reuters; Bloomberg; Edgar International; Company WEB sites.
UK	www.hemscott.co.uk; Bloomberg; Worldscope; Mergent International; http://www.itruffle.com.
USA	SEC filings.