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ABSTRACT

Newly released data on corporate governance and disclosure practices reveal wide within-country variation, with the variation increasing as legal environment gets less investor friendly. This paper examines why firms practice high-quality governance when law does not require it; firm attributes related to the quality of governance; how the attributes interact with legal environment; and the relation between firm valuation and corporate governance. A simple model, in which a controlling shareholder trades off private benefits of diversion against costs that vary across countries and time, identifies three relevant firm attributes: investment opportunities, external financing, and ownership structure. Using firm-level governance and transparency data on 859 firms in 27 countries, we find that firms with greater growth opportunities, greater needs for external financing, and more concentrated cash flow rights practice higher-quality governance and disclose more. Moreover, firms that score higher in governance and transparency rankings are valued higher in the stock market. Equally important, all these relations are stronger in countries that are less investor friendly, demonstrating that firms do adapt to poor legal environments to establish efficient governance practices.

JEL Classification: G32 (Financial Policy; Capital and Ownership Structure), K23 (Corporation and Securities Law)

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Do all firms in weak legal regimes suffer from poor corporate governance, whereas firms in strong legal regimes practice uniformly high-quality governance? Or do firms adapt to poor legal environment as in Coase (1960), resulting in some firms having higher quality governance than is required by law? Newly released data on 859 firms in 27 countries reveal wide within-country variation in governance and disclosure practices, with the variation increasing as legal environment gets less investor friendly. This raises several questions: Does the wider variation in weaker legal regimes simply reflect greater latitudes allowed by lower minimum standards? Or is there a systematic pattern in which firms choose their quality of governance amid greater latitude? If so, what are the relevant firm attributes and how are they related to the observed governance practices? Is the quality of governance priced in stock markets, and if so, is it economically significant for corporate decision makers to take notice? These are the issues addressed in this paper.

Previous studies have examined the effects of legal environment on corporate governance, and the relation between corporate governance and firm performance. Specifically, it has been shown that better legal protection for investors is associated with higher valuation of the stock market (La Porta et al. (2002)), higher valuation of listed firms relative to their assets or changes in investments (Wurgler (2000)), and larger listed firms in terms of their sales and assets (Kumar, Rajan, and Zingales (1999)). Furthermore, industries and firms in better legal regimes rely more on external financing to fund their growth (La Porta et al. (1997), Demirgüç-Kunt and Maksimovic (1998), and Rajan and Zingales (1998)).

Although these country-level studies provide valuable insights into the effects of regulatory environment, they do not address firm-level issues such as what drives different governance practices across firms within a legal regime or how governance affects individual firm valuation. Previous studies on the relation between governance and firm performance using U.S. data show

mostly mixed and somewhat conflicting results.[1] Recent studies based on international data, on the other hand, are more affirmative: Black (2001) and Black, Jang, and Kim (2002) demonstrate a strong relation between corporate governance and firm valuation in Russia and Korea, and Doidge, Karolyi, and Stulz (2003) show that foreign firms listed on U.S. stock markets are valued higher (see Denis and McConnell (2003) for a recent review of the literature).

Building on insights provided by these authors, this paper offers four main contributions. First, it documents a wide within-country variation in corporate governance that decreases with the strength of legal environment. Second, the paper identifies three firm attributes related to the quality of governance, analyzes their interaction with legal environment, and empirically examines the hypothesized relations. Third, it re-examines the relation between governance and firm valuation by using a large sample of firms for 27 countries. Finally, the paper documents stronger relations between firm attributes, governance practices, and firm valuation in less investor friendly countries.

To identify relevant firm attributes, we provide a simple model of optimal diversion of corporate resources by a controlling shareholder who faces private costs of diversion that increase with the strength of legal environment. The costs are also asset-specific and vary over time, which sometimes cause the shareholder to reject positive net present value (NPV) projects in the process of diversion. This potential value destruction and the costs are traded off against private benefits in determining the optimal diversion.

The model predicts that (1) firms with better investment opportunities, higher concentration of ownership, and greater needs for external financing practice better governance; (2) firms that practice better governance have higher value; and (3) these relations are stronger in weaker legal regimes.

[1] A partial list of these studies includes Bhagat and Brickley (1984), Demsetz and Lehn (1985), Bhagat and Jefferis (1991), Demsetz and Villalonga (2001), and Gompers, Ishi, and Metrick (2003). See Denis and McConnell (2003) for a more complete list.

The basic intuitions underlying these predictions are simple. One is less likely to commit crime if one has something valuable to lose: profitable investment opportunities. One does not steal from oneself: ownership concentration. One does not spit into the well from which one drinks: external financing. As for the interplay between firm attributes and legal environment, good corporate governance driven by private incentives becomes a more important mitigator in alleviating the harmful effects of ineffective legal framework when regulation is weak. And finally, good corporate governance is valued higher where it is scarce; namely, in weaker legal regimes.

These predictions are tested with data on the quality of corporate governance practice compiled by *Credit Lyonnais Securities Asia* (CLSA), while using *Standard and Poor's* (S&P) disclosure data as a robustness check. The CLSA data rely on an intuitively appealing comprehensive, yet partially subjective method, while S&P scores are objective. In making the transition from theory to empirically testable hypotheses, we relate the optimal diversion of corporate resources to the quality of governance practice. To check if governance practices are a reasonable proxy for diversion, we relate corporate scandals to CLSA scores. We find that firms with low CLSA governance scores are more likely to be mentioned in scandals reported by the media.

As predicted by the model, the quality of governance practice is positively related to growth opportunities, concentration of ownership, and need for external financing. Furthermore, these relations are stronger in less investor friendly legal environments. Consistent with Coase, firms seem to adapt to legal environments to effect efficient governance practices.

The data also reveal that firms with better governance enjoy higher valuation.[2] One standard deviation increase in governance score increases a firm's market value by 9.0 percent, on average, with a stronger impact in weaker legal regimes. For example, for firms in Mexico, which

[2] In a contemporaneous study Klapper and Love (2002) also document a similar relation using CLSA data.

scores the lowest in our sample in terms of the strength of legal framework, one standard deviation in governance scores changes the market value by 12.6 percent, whereas the same change in Hong Kong or Chile, which provides the strongest legal framework in our sample, affects the value by only 5.6 percent.

Section I describes the data on governance and disclosure practices, relates them to corporate scandals, and demonstrates the wide within-country variation. Section II presents the simple model to provide empirical hypotheses concerning the relations among the three firm attributes, quality of governance, legal environment, and firm valuation. Empirical design and data are described in Section III. Section IV reports empirical results, and Section V provides robustness checks. The concluding section contains a summary and implications.

I. Within-Country Variation in Corporate Governance Practices

In this section we describe the data on the quality of governance and disclosure practices. We also compile corporate scandals for a sub-sample of firms and examine the relation between scandals and governance scores. Then we document that both governance scores and disclosure scores reveal wide within-country variation inversely related to the strength of legal environment.

A. CLSA Corporate Governance Scores

CLSA (2001) issued a report on governance practices by 494 companies in 24 countries providing scores on the quality of governance in year 2000. Firms are selected based on size (large) and investor interest (high). The governance scores are based on responses from financial analysts to 57 questions that are used to construct scores on a 1-100 scale, where a higher number indicates better governance. According to CLSA, 70 percent of the scores are based on objective information and all questions have binary answers (yes/no) to minimize analysts' subjectivity.[3] It also attempts to provide firm-level information beyond the mere effect of legal environment:

[3] Anecdotal evidence supporting CLSA's claim of objectivity is a report that CLSA has "lost quite a bit of corporate finance business" with companies that were assigned the worst corporate governance scores and that CLSA may stop compiling the scores. (South China Morning Post: Hong Kong; Nov 2, 2001).

"Our scores do not mark down a company simply for being in a country that might be perceived to have a weak regulatory or legal framework." [CLSA Emerging Markets (2002), p. 9]

Scores on the 57 questions are grouped into six categories of corporate governance and an index of social responsibility: *discipline* (managerial incentives and discipline towards value maximizing actions), *transparency* (timely and accurate disclosure), *independence* (board independence), *accountability* (board accountability), *responsibility* (enforcement and management accountability), *protection* (minority shareholder protection); and *social awareness* (social responsibility). We compute the *composite* governance index, *COMP*, by taking a simple average of the first six categories and examine *social awareness* separately.

B. Corporate Scandals

To investigate whether the quality of governance practices measured by CLSA scores are related to corporate misdeeds, we compile scandals for 84 firms in 14 countries that have CLSA scores for more than 11 firms.[4] For each country we select the top three and the bottom three firms in CLSA composite score and manually scan for mention of these companies in articles in the Lexis-Nexis database during a three-year period—01/01/1999 through 12/31/2001.[5] We then look for scandals such as asset expropriation, accounting misreporting, earnings manipulation, stock price manipulation, insider trading, share dilution, and undertaking illegal projects. There are 29,320 articles covering stories on the sample firms, from which we identify 49 scandals— if the same scandal appears in multiple articles, we count it only once. Many are media accusations of wrongdoing that have not yet been tried in court. The majority of companies (68 percent) have no reported scandals while those with scandals have, on average, 1.8 scandals reported.

The simple correlation between the number of scandals, *SCAND*, and CLSA composite score is –0.36 (p-value = 0.00), suggesting that more firms with low CLSA scores are linked to

[4] These countries are Brazil, Chile, China, Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, South Africa, Taiwan, Thailand, and Turkey.
[5] Because scandal data collection began in early 2002, we limit the sample period to the end of year 2001.

scandals. However, other factors may also be related to scandals being reported: the legal environment; the investigative ability of news media and the freedom to report scandals; and the relative media attention a firm receives in general.

B.1 Measures of Legal Environment and News Media

Our measure of the strength of legal environment is based on both *de jure* and *de facto* aspects of regulation. The *de jure* measure of investor protection, *INVESTOR,* is the anti-director rights (shareholder rights) index defined in La Porta et al. (1998a), and it ranges from 0 to 6. We cannot rely solely on this measure because India and Pakistan, countries which do not have the best *de facto* investor protection, score 5, the highest in our sample on *INVESTOR*. To measure the strength of *de facto* regulation, we use the rule of law index, *ENFORCE*, from the *International Country Risk Guide* as a proxy for law enforcement. The rule of law assesses the law and order tradition of a country, and it ranges from 0 to 10.[6]

There is little correlation between *de jure* and *de facto* measures of regulation. The correlation coefficient between *INVESTOR* and *ENFORCE* is only 0.18 with *p-value* = 0.38. We multiply *INVESTOR* by *ENFORCE* to construct a measure that reflects both aspects of regulation, and define it *LEGAL*.

The investigative ability of news media and the freedom to report scandals is proxied by circulation of daily newspapers per capita reported in Dyck and Zingales (2002), *NEWS*. The relative media attention a firm receives is proxied by the log of the total number of articles covering stories on the sample firm, *TOTAL*.

[6] *ENFORCE* is calculated as the 1999-to-2000 monthly average. As in La Porta et al. (1998a) the original series is transformed from 0-6 to 0-10. An alternative is to use the efficiency of the judicial system index reported in La Porta et al. (1998a). We use the rule of law for two reasons. First, using the efficiency of the judicial system would reduce our sample size because this variable is not defined for China, Hungary, Poland, and Russia in La Porta et al. (1998a). Second, the two variables are highly correlated. The correlation between the rule of law and the efficiency of the judicial system (based on the sample of countries in La Porta et al. (1998a)) is 0.64 (*p-val* = 0.00).

B.2 Relation between CLSA Scores and Scandals

We regress the number of scandals, *SCANDAL*, on CLSA composite score, *COMP,* as well as on *LEGAL, NEWS,* and *TOTAL*. Because observations on individual companies in a given country are not independent, we estimate the regression with country-random effects, which takes into account that errors among observations are correlated. The validity of the random effects specification is justified by the Breusch and Pagan (1980) test that rejects the null hypothesis that the errors are uncorrelated within countries.

The results are reported in Table I with two specifications: the first controls for *LEGAL* and *TOTAL*, and the second adds *NEWS* to the first specification. The coefficient on *COMP* is significantly negative in both specifications, indicating that firms scoring low on CLSA ratings are more likely to have scandals reported in media.[7] The coefficient on *TOTAL* is significantly positive in both specifications, suggesting that greater media attention tends to lead to more exposure of corporate scandals.

The coefficients on *LEGAL* and *NEWS* are not significant, however. We suspect two offsetting effects are going on in both variables. Take the case of *NEWS*. To the extent that higher newspaper circulation leads to greater exposure of corporate scandals, one would expect a positive correlation. However, higher circulation can also have a preventive effect as documented by Dyck and Zingales (2002). Similarly, a more efficient judicial system may lead to more exposure of scandals, but may also have a preventive effect reducing the number of wrongdoings that can be exposed by the media.

C. Standard & Poor's Transparency Scores

As a robustness check on results based on CLSA scores, we use Standard & Poor's measure of corporate disclosure practices for 573 companies in 16 emerging markets and 3 developed countries in 2000. The measure counts whether a firm discloses relevant information on 91

[7] Khanna, Kogan, and Palepu (2002) also examine corporate scandals for Indian firms covered by CLSA and find a significant negative correlation between scandals and CLSA rankings.

possible items that would be of interest to investors: 22 items on ownership structure and investor relations (*ownership*), 34 items on accounting and financial policies (*disclosure*), and 35 items on board and management structure and process (*board*). Then it assigns scores from 0 to 22 for *ownership*, from 0 to 34 for *disclosure*, and from 0 to 35 for *board*. The scores of the three categories are summed to create an aggregate transparency score, *TRAN*, ranging from 0 to 91, which is equivalent to assigning an equal weight to each disclosed item.[8]

We interpret these scores as an indicator of the quality of disclosure practice. If a firm has more disclosure on ownership-related items, for example, we infer the firm has less to hide and hence has a relatively sound practice on matters concerning ownership structure. Conversely, reluctance to reveal items concerning board structure is interpreted as having a relatively unsound practice in that category.

The advantage of S&P scores lies in its objectivity, whereas CLSA scores are comprehensive, but susceptible to subjectivity. S&P scores, however, depend only on the number of disclosures, and do not reflect the content. They are best viewed as a measure of transparency and not a comprehensive measure of corporate governance.

D. Consistency across CLSA and S&P Scores

To determine whether companies scored high on corporate governance by CLSA are also scored high on disclosure by S&P, we identify 208 companies that are ranked by both agencies. Table II reports correlation coefficients between different categories of CLSA and S&P scores. All of the categories of CLSA scores are highly correlated with each other except for *social awareness*. Different categories of S&P scores are also significantly correlated with each other, indicating that firms that disclose more in one category tend to disclose more in other categories.

The correlations across CLSA and S&P scores reveal that CLSA composite index, *COMP*, is significantly correlated with S&P aggregate score, *TRAN*. To check whether the correlation is due

[8] For a detailed description of S&P Transparency Scores, go to www.governance.standardandpoors.com.

to country and industry differences, we regress CLSA composite index on S&P aggregate score with country and industry dummies. The relation remains significant, confirming the consistency between the two rankings.[9]

Although scores on many individual categories of the CLSA ranking are not correlated with those of S&P's ranking, the correlations are positive and significant when the individual categories are measured on overlapping characteristics. For instance, S&P score on accounting and financial policies (*disclosure*) is significantly correlated with CLSA score on transparency; S&P score on board and management structure and process (*board*) is significantly correlated with CLSA score on board accountability (*accountability*), and so on. These correlations, as well as the lack thereof, suggest that S&P scores provide valuable data to check the robustness of results based on CLSA scores.[10]

E. Within-Country Variation of Corporate Governance Scores

Table III provides summary statistics by country for legal regime variables, CLSA composite scores, and S&P aggregate scores. To examine whether countries with strong legal frameworks tend to have high average CLSA and S&P scores, we regress the country average scores on *LEGAL* for countries with ten or more firms. For CLSA scores, we obtain:[11]

$$COMP = 37.25 + 0.43 * LEGAL \quad (R^2 = 0.25,\ N = 15), \qquad [1]$$
$$[0.00] \quad [0.01]$$

[9] The regression is:

$$COMP = 0.16 \times TRAN + \Sigma_i\, d_i + \Sigma_c\, d_c \qquad R^2 = 0.46,$$
$$[0.05]$$

where d_i and d_c are industry and country dummies (coefficients not reported), respectively, R^2 is the coefficient of determination, and the number inside brackets is the probability level at which zero coefficient can be rejected.

[10] It is possible that the firms in CLSA and S&P rankings may suffer from selection and reporting bias; namely, only firms with good governance practices may cooperate with the CLSA survey and the ranking agencies may choose firms that are easier to assign scores. However, companies have incentives to cooperate because exclusion from the ranking may create ill reputation, and the ranking agencies have a commercial interest in listing a well-balanced portfolio of companies. We further investigate the sample selection issue in Section V.

[11] For S&P scores the regression gives the following results:

$$TRAN = 28.72 + 0.36 * LEGAL \quad (R^2 = 0.24,\ N = 14). \qquad [1a]$$
$$[0.00] \quad [0.06]$$

where R^2 is the coefficient of determination, *N* is the number of countries, and the numbers inside brackets are probability levels based on heteroschedasticity-consistent standard errors at which the null hypothesis of zero coefficient can be rejected.

Given the result in [1], we define the conditional variation of individual firm governance practices as the portion of governance scores not explained by legal regime. Namely, we repeat [1] at the firm-level for CLSA composite score, *COMP*; CLSA score on investor protection, *PROTECT*; and S&P transparency ranking, *TRANS.* We then take the absolute values of the residuals and regress the deviations on *LEGAL*. The results are reported in Panel A of Table IV. The coefficient on *LEGAL* is negative and significant in all cases. Thus, we conclude within-country variation in governance and disclosure practices is larger when legal environment is less investor friendly.

As stated at the outset, these variations raise several questions. Does the inverse relation between within-country variation and legal environment simply reflect greater latitudes allowed by lower minimum legal standards? Why do firms practice high-quality governance when law does not require it? What are the attributes, if any, that are related to a firm's choice of governance? How do these attributes interact with legal environment in Coase's sense? We address these questions next.

II. Theoretical Considerations

We consider an environment similar to Johnson et al. (2000) and Shleifer and Wolfenzon (2003), in which controlling shareholders divert corporate resources for private benefits and diversion is costly.[12] Following Shleifer and Vishny's (1997) view that "Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment." (p. 737), we define the quality of governance as the degree to which

[12] Because the primary purpose of this section is to provide motivation for empirical tests, we do not consider issues such as determinants of initial ownership and capital structure in different legal regimes (e.g., Friedman, Johnson, and Mitton (2002)). Nor do we consider the reputation-type issues discussed in Diamond (1991), Maksimovic and Titman (1991), and Gomes (2000).

non-controlling shareholders get their fair share. Specifically, we relate diversion to corporate governance by defining the quality of governance as (*1-d*), where *d* is the proportion of firm value diverted from the maximum attainable value at zero diversion with the value maximizing investment policy. Thus, a high level of *d* implies poor governance practice, where *d* is broadly defined to include a wide range of value-decreasing activities from what Jensen and Meckling (1976) define as excessive shirking and corporate perks to outright stealing of tangible and intangible corporate resources.[13]

This definition of the quality of governance captures various governance and managerial practices in place that affect firm value for all shareholders, where the practices may or may not be legally binding. Therefore, the six categories of governance practice defined by CLSA—independence and accountability of the board of directors, financial incentives and managerial discipline for value creation, enforcement of managerial responsibility and accountability, timely and accurate disclosure of relevant information, assurance to maintain auditors' independence, and protection of minority shareholders—represent the key aspects of our definition.

A. Costs and Timing of Diversion

The costs of diversion to the controlling shareholder can be categorized as direct and indirect. The direct costs are of three types. One is the (expected) penalty when diversion is illegal and the shareholder is caught. Such penalties may take the form of fines, jail terms, and loss of reputation that may hurt the shareholder's future business or employment opportunities. Another type is the cost incurred for the act of diverting resources, such as bribes to employees, regulators, and politicians. A third type is the deadweight loss arising from the fact that the private value of excessive corporate perks or cash equivalent value of diverted resources is often less than their fair value.

[13] Because of the opportunistic nature of stealing and the incentive to hide it, stealing takes many different forms that are sometimes highly creative. See Johnson, LaPorta, and Lopez-de-Silanes (2000) for a description of tunneling and Siegel (2003) for examples of various legal and illegal assets taking by controlling shareholders and CEOs of Mexican firms during the mid-90s.

These costs vary across countries due to differences in regulatory environment, with higher costs in countries with strong legal protection for investors.[14] Costs also vary across industries within a legal regime due to differences in the nature of assets and business models involved. For example, the costs are higher for tangible assets because it is easier to steal ideas or business plans than factories and buildings, and for firms in regulated industries because they are more closely monitored.

The costs also vary over time, and diversion takes place when the chances of getting caught, or more generally, the costs, are the lowest. For example, if the controlling shareholder has a special connection to the current political regime that will be replaced soon, or has an unusually cooperative auditor who will retire soon, diversion is likely to occur now rather than later. Likewise, the direct costs of diversion are lower when a project is at the idea or business plan stage than after the project becomes tangible assets such as plants and equipment.

If the cost of diversion increases sufficiently after investments, diversion may impose indirect costs in the form of rejecting positive NPV projects. Consider a controlling shareholder who owns 30 percent of a firm's cash flow rights. The firm has just identified a profitable business opportunity after spending a considerable amount of corporate resources. Instead of having the firm undertake the project, however, she is contemplating whether to give the project to her son and have him take the project within a new private firm, which she owns 100 percent. If the project is undertaken by the original firm, its NPV is $1,000; but under the new firm, it is worth only $700 because the new firm does not have the necessary facilities to undertake the project.

[14] We assume the strength of legal regimes is exogenous to the observed level of malfeasance. As witnessed during the recent corporate scandals following the Enron debacle, however, governments react to revelations of widespread corporate misdeeds, with those more responsive to public opinions being more inclined to undertake legal reforms. There are several justifications for our assumption. First, reforming legal systems is a slow process because it inevitably becomes a political issue, with the controlling shareholders–and those who benefit by association–insisting on the status quo (see Bebchuk and Roe (1999) and Rajan and Zingales (2002)). Second, if the number of firms is sufficiently large, the controlling shareholder may behave as if her actions will have no effect on the cost of diversion. Finally, the cost can be interpreted as the shareholder's perceived cost that takes into account the effects of her action on future legal reforms.

The shareholder has to make two decisions: (1) to steal or not to steal and (2) when to steal. If the first decision has to be made now for some reason and the cost of stealing is ten percent, she will steal because the net benefit is \$630 (\$700×0.9), whereas her share of the firm's NPV is only \$300 (\$1,000×0.3). However, she will be better off having the original firm make the investment and stealing later, if the cost of stealing remains unchanged at 10 percent, because the net benefit of stealing later increases to \$900 (\$1,000×0.9).[15]

Generally it costs less to steal an idea or a new business plan than to steal tangible assets, such as plants and buildings, resulting from investments because of difficulties in identifying properties involved and exercising property rights. If the costs of stealing increase to, say, 40 percent after the investment is made, it would be better to steal now because the net benefit of stealing later would be only \$600 (\$1,000×0.6). The end result will be a destruction of value: the reduction of NPV from \$1,000 to \$700.

Therefore, timing of diversion depends on how costs vary over time; and sometimes diversion imposes an indirect cost in the form of rejecting positive NPV projects. In practice, however, the timing is not as clear-cut as suggested in the example, as the beginning of one period represents an end to the preceding period. Furthermore, how the costs change over time differs across firms and projects because of firm-specific situations and project-specific factors.

B. A Simple Model

To incorporate these various aspects of costs and timing of diversion in a simple model that can provide empirically testable hypotheses, two approaches can be taken: (1) The increase in direct costs after investments is large enough to force the controlling shareholder to choose between diversion and investments now–e.g., steal before investments are made as in Johnson et al. (2000). (2) The cost increase is small enough to make her wait until after investments are made–e.g., steal later as in Shleifer and Wolfenzon (2003). In this paper we take the first

[15] For the sake of brevity, we assume zero discount rate.

approach in the text and consider the second in Appendix A. Both approaches lead to the same set of hypotheses. The trade-off between the private benefits of diversion and rejection of profitable projects with a linear cost function drives the results in the first approach; in the second, it is the trade-off between the private benefits and the convexity in the cost of diversion.

We consider a simple investment opportunity set in a single period. The firm will liquidate when the returns are realized, from which the controlling shareholder collects her share of the liquidating dividends. The interest rate is zero and investors are risk-neutral such that the cost of capital is zero.

The gross return per unit of physical capital invested in project *j* is equal to $1+\pi(j)$, where $j \geq 0$ and $\pi(j)$ is linear and decreasing in *j* for all firms with each firm having a maximum of $\overline{\pi} > 0$. Although we do not put subscript *i* to $\overline{\pi}$ for notational simplicity, $\overline{\pi}$ varies across firms and, hence, is the variable that differentiates the profitability of investment opportunities across firms. With this definition, the gross return for the j^{th} unit of capital invested can be written as $1+\pi(j) = 1+\overline{\pi} - j$. If a firm takes all positive NPV projects, it will invest until $1+\overline{\pi} - j = 1$, and the units of capital invested will be $j = \overline{\pi}$.

The cost of diversion is assumed to be linear; it is a constant fraction, *c*, of the amount diverted. In this situation the controlling shareholder, who owns α fraction of cash flow rights, will divert only when $c < 1-\alpha$, because one dollar of diversion creates wealth transfer of $1 - \alpha$ from other shareholders giving her a net benefit of $1 - \alpha - c$.[16]

The controlling shareholder will invest as long as her share of liquidating dividends from a project is greater than the after-cost diversion, namely, if $\alpha(1+\pi(j)) > 1-c$. Thus she will invest up to the point where:

$$\alpha(1+\overline{\pi} - j) = 1-c \ . \qquad [2]$$

[16] When $c > 1 - \alpha$, there will be no diversion, and hence, we only consider the case where $c < 1-\alpha$.

Equation [2] gives the controlling shareholder's optimal level of investment,

$$j^* = \begin{cases} 1+\overline{\pi}-\dfrac{1-c}{\alpha} & \text{if } \ 1-(1+\overline{\pi})\alpha < c < 1-\alpha \\ 0 & \text{if } \ c \le 1-(1+\overline{\pi})\alpha \end{cases} . \qquad [3]$$

To obtain the optimal diversion, the cash equivalent value of the firms' assets, or internal funds available, is written as $F = \overline{\pi} + e > 0$, where *e* is a constant indicating whether the firm has sufficient funds to invest in all positive NPV projects (e ≥ 0) or not (e < 0).[17] The funds remaining after the investment, $F - j^*$, will be diverted if the after-cost benefits of diversion is greater than the controlling stockholder's share of liquidating dividends from it: $(F - j^*)(1 - c) > a(F - j^*)$ or $c < 1-\alpha$. Thus, the optimal amount of diversion *D** is equal to $F - j$ if $c < 1 - \alpha$, and 0 otherwise. Since $F = \overline{\pi} + e$, it follows from equation [3] that

$$D^* = \begin{cases} \dfrac{1-c-\alpha}{\alpha}+e & \text{if } \ 1-(1+\overline{\pi})\alpha < c < 1-\alpha \\ \overline{\pi}+e & \text{if } \ c \le 1-(1+\overline{\pi})\alpha \end{cases} . \qquad [4]$$

Dividing *D** by the firm's endowment, $\overline{\pi} + e$, we obtain our proxy for the quality of corporate governance, the optimal proportion of firm value diverted,

$$d^* = \begin{cases} \dfrac{1-c-\alpha+\alpha e}{\alpha(\overline{\pi}+e)} & \text{if } \ 1-(1+\overline{\pi})\alpha < c < 1-\alpha \\ 1 & \text{if } \ c \le 1-(1+\overline{\pi})\alpha \end{cases} . \qquad [5]$$

Figure 1 illustrates the investment opportunity set with $e = 0$ and how the firm value is reduced due to diversion and rejection of positive NPV projects. The Investment opportunity is denoted by the broken line. The maximum possible value of the firm at $d^* = 0$ is represented by the area $(1+\overline{\pi})BC0$. The optimal diversion, *D**, reduces the NPV of the firm by the triangle area *ABE* reducing the value of the firm to the smaller are of $(1+\overline{\pi})AF0$.

[17] The budget constraint, $j < \overline{\pi} + e$, may become binding if *e* is negative, i.e., the endowment is insufficient to fund all positive NPV projects. Although the above derivations assume non-negative *e,* it is easy to show that all the results hold with negative *e*.

C. Hypotheses

Equation [5] specifies how *d** is related to the variables of interest, namely, *c*, α, and $\overline{\pi}$. Taking partial derivatives of *d** with respect to these variables provides a number of testable hypotheses. The most obvious is that *d** is negatively related to the cost of diversion *c*, our proxy for the strength of legal environment. Restating the well-known result,

Hypothesis 1: *In strong legal regimes (high-c countries), firms will divert less and practice higher quality corporate governance.*

Taking partial derivative of *d** with respect to $\overline{\pi}$, profitability of investment opportunities,

$$\frac{\partial d^*}{\partial \overline{\pi}} = \begin{cases} \dfrac{\alpha + c - 1 - \alpha e}{\alpha(\overline{\pi} + e)^2} < 0 & \text{if } \; 1 - (1+\overline{\pi})\alpha < c < 1 - \alpha \\ 0 & \text{otherwise} \end{cases} . \qquad [6]$$

This derivative is negative because diversion takes place only when $c < 1 - \alpha$. The intuition is straightforward. When investment opportunities are more profitable, the controlling shareholder's share of return from investments is larger relative to the benefits of diversion. Thus, we obtain

Hypothesis 2: *Controlling shareholders of firms with more profitable investment opportunities divert less for private gains and practice higher quality corporate governance.*

Equation [6] also implies that when a firm suffers a substantial drop in profitable investment opportunities, the controlling shareholders will divert more corporate resources. Johnson et al. (2000) document such behavior by Asian firms before the Asian financial crisis. In the U. S. the media alleges similar actions by the top management of Enron, Worldcom, and other firms with subsequent scandals, prior to their filing bankruptcy.[18]

The impact of investment opportunities on governance practice may vary across legal regimes, which can be seen by taking derivative of equation [6] with respect to *c*,

[18] Equation [6] also shows that the partial derivative is zero when $c < 1 - \alpha(1+\overline{\pi})$. Such circumstances arise when investor protection is so weak (*c* is so small relative to profitability of investment opportunities) that the firm's entire resources are diverted without undertaking any investments.

$$\frac{\partial d^*}{\partial \bar{\pi} \partial c} = \begin{cases} \dfrac{1}{\alpha(\bar{\pi}+e)^2} > 0 & \text{if } 1-(1+\bar{\pi})\alpha < c < 1-\alpha \\ 0 & \text{otherwise} \end{cases} . \qquad [7]$$

Equation [7] shows that the sensitivity of diversion to investment opportunities falls as the cost of diversion rises. In other words, the positive relation between investment opportunities and the quality of governance is stronger in weaker legal regimes. This is because the potential value destruction from rejecting positive NPV projects is greater in weaker legal frameworks and those with good investment opportunities have greater incentives to mitigate it through good governance. We propose

Hypothesis 3: *The impact of investment opportunities on the quality of governance practices is stronger in a country with weaker legal environment.*

To illustrate, consider two countries, say the U.S. that has relatively low tolerance for diversion and imposes high cost, and Russia that is more tolerant and imposes lower costs. Hypothesis 3 implies that the same increase in profitable investment opportunities will have a smaller negative impact on *d* in the U.S. than in Russia.

For numerical illustration assume the cost of diversion, *c*, is equal to 0.6 in the U.S. and 0.3 in Russia and the excess cash, *e*, is equal to 0 in all cases. A low profit firm has an investment opportunity set with $\bar{\pi}_L = 2.0$. The payoff to the controlling shareholder is $\alpha MV + (1-c)D$ where the market value, *MV*, is the present value of gross returns from all projects undertaken; $MV = \int_0^{(1-d^*)\bar{\pi}} (1+\bar{\pi}-j)dj = \bar{\pi}(1-d^*) + \dfrac{\bar{\pi}^2(1-d^{*2})}{2}$. With α = 0.3 her payoff is maximized at $d_L^* = 0.67$ if the firm is located in Russia; if located in the U.S., $d_L^* = 0.17$. Now, assume the firm's investment opportunity improves to $\bar{\pi}_H = 2.2$. Then the optimal diversion will decrease from 0.67 to 0.61 for the Russian firm. For the U.S. firm the decrease will be smaller; from 0.17 to 0.15.

Figure 2 illustrates the payoff function to the controlling shareholders as well as the optimal diversion levels. The figure also shows that the variation in *d* is greater in Russia than in the U.S.[19] Thus we conjecture

Conjecture 1: *Everything else being equal, within-country variation in the quality of governance is greater in weaker legal regimes.*

The impact of ownership concentration can be seen by differentiating *d** with respect to α,

$$\frac{\partial d^*}{\partial \alpha} = \begin{cases} -\dfrac{1-c}{\alpha^2(\bar{\pi}+e)} < 0 & \text{if } \ 1-(1+\bar{\pi})\alpha < c < 1-\alpha \\ 0 & \text{otherwise} \end{cases} . \qquad [8]$$

This is the well-known Jensen and Meckling (1976) agency argument that entrepreneurs with higher ownership divert less, which can be restated as

Hypothesis 4: *Controlling shareholders with greater cash flow rights practice higher quality corporate governance.*

A more interesting result is obtained by differentiating equation [8] with respect to *c*,

$$\frac{\partial d^*}{\partial \alpha \partial c} = \begin{cases} \dfrac{1}{\alpha^2(\bar{\pi}+e)} > 0 & \text{if } \ 1-(1+\bar{\pi})\alpha < c < 1-\alpha \\ 0 & \text{otherwise} \end{cases} . \qquad [9]$$

Equation [9] shows that the sensitivity of diversion to ownership concentration falls as the cost of diversion rises. In other words, the positive relation between ownership and the quality of governance is stronger in weaker legal regimes. In the absence of adequate legal protection for investors, concentrated ownership becomes a more important tool to resolve the agency conflict between controlling and minority shareholders.[20] Thus we propose

[19] Assume two-firm economies in which both firms *L* and *H* exist in the U.S. and in Russia such that the deviation in $\bar{\pi}$ between the two firms in both countries is the same 0.2. But the deviation in *d** is 0.06 in Russia and 0.02 in the U.S. Thus firms in Russia would show greater variation in corporate governance than those in the U.S. The variation also depends on $\bar{\pi}$ because *d** is negatively related to $\bar{\pi}$. To illustrate, again consider a two-firm economy in which firm *L*'s $\bar{\pi}$ is 3 and firm *H*'s $\bar{\pi}$ is 3.3, the same 10 percent difference as above. In this case $d^*_L = 0.44$ and $d^*_H = 0.40$ in Russia and, $d^*_L = 0.11$ and $d^*_H = 0.10$ in the U.S., reducing the deviation in *d** to 0.04 in Russia and 0.01 in the U.S.

[20] Shleifer and Wolfenzon (2002) obtain a similar result under a more restrictive set of assumptions.

Hypothesis 5: *The impact of ownership concentration on the quality of governance is greater in a weaker legal regime.*

Although it is not shown in equation [5], the quality of governance may also be related to external financing. We have already shown an obvious reason: Firms with profitable investment opportunities will have better corporate governance. If profitable investment opportunities lead to more external financing, firms with greater external financing are likely to have better corporate governance.

Demirgüç-Kunt and Maksimovic (1998), however, predict the opposite. They argue that profitable firms have more internally generated funds and, hence, rely less on external financing. Thus we isolate the impact of external financing from that of profitability of investment opportunities by assuming that investment is given. We also assume that external financing is bounded from above by a minimum level of cash flow rights necessary to maintain the control and that new investors rationally anticipate diversion. Under these assumptions we show in Appendix B that firms in greater need for external financing have greater incentives to enhance the quality of governance, which leads to

Hypothesis 6: *For a given level of profitable investment opportunities, controlling shareholders of firms with greater need for external financing will practice higher quality governance.*

One reason firms in weaker legal regimes have difficulty raising external capital is investors' lack of trust in protection of their rights. Firms have incentives to alleviate their concerns by practicing high-quality governance, with the incentive being greater among firms that suffer more from the adverse effect; namely, firms located in weaker legal regimes. Hence we conjecture

Conjecture 2: *The positive relation between external financing needs and the quality of governance is stronger in a weaker legal environment.*

Finally, we examine the relation between the quality of governance and firm valuation by defining the market value of a firm, *MV*, as the present value of gross returns from projects,

$$MV = \int_0^{(1-d^*)(\bar{\pi}+e)} (1+\bar{\pi}-j)dj = (1+\bar{\pi})(1-d^*)(\bar{\pi}+e) + \frac{(\bar{\pi}+e)^2(1-d^*)^2}{2}. \qquad [10]$$

Equation [10] shows that the market value of the firm increases as *d** decreases; thus,

Hypothesis 7: *Firms with high-quality governance are valued higher.*

Since high-quality governance is relatively scarce in weak legal regimes, everything else being equal, the few firms with good governance are likely to be valued more in poor legal environment. Thus,

Conjecture 3: *The impact of the quality of governance on firm valuation is greater in weaker legal regimes.*

III. Empirical Design and Data

A. Regression Specification

To investigate the relation between firm attributes and the quality of governance and their interaction with legal environment, we regress individual firms' CLSA and S&P scores on measures of investment opportunities, needs for external financing, ownership concentration, and the strength of legal environment, while controlling for industry and other firm characteristics. Specifically, we estimate the following cross-sectional country-random effects regression,

$$\begin{aligned} CORP\_GOV_j^c = {} & \alpha + \beta_1 * INV\_OPP_j^c + \beta_2 * EXT\_FIN_j^c + \beta_3 * OWN\_CASH_j^c + \gamma_1 * LEGAL^c + \\ & \gamma_2 * EXT\_FIN_j^c * LEGAL^c + \gamma_3 * INV\_OPP_j^c * LEGAL^c + \gamma_4 * OWN\_CASH_j^c * LEGAL^c + \\ & \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + \varepsilon_j^c \end{aligned} \qquad , [S1]$$

where *CORP_GOV* is corporate governance or transparency scores; α, a constant; *INV_OPP*, investment opportunities; *EXT_FIN*, the need for external financing; *OWN_CASH*, concentration of cash flow rights; *LEGAL*, the strength of a country's legal regime. *INV_OPP*LEGAL, EXT_FIN*LEGAL*, and *OWN_CASH*LEGAL* are interaction terms of legal regime with investment opportunities, external financing, and ownership concentration, respectively. *Z* are control variables; and *d*, industry dummy. And *c* stands for country; *i,* industry; *j*, firm; *k,* control variables; *I*, the number of industries; and *K*, the number of control variables.

Four different scores are used as a proxy for *CORP_GOV*: CLSA scores on the composite index, *COMP*, investor protection, *PROTECT*, and social awareness, *SOCIAL*, or S&P aggregate score, *TRAN*. Of the six CLSA governance categories, we single out *PROTECT* because it is the most direct measure of investor protection against theft and, hence, is more relevant to ownership concentration than *COMP*. Ownership concentration is hypothesized to help improve investor protection; however, there is no obvious reason to expect firms with more concentrated ownership to disclose more and be more transparent. Since *COMP* includes measures of transparency, as well as investor protection and other governance categories, we expect *OWN_CASH* to be more closely related to *PROTECT* than to *COMP*. *SOCIAL* is examined separately because it is distinct from (has low correlations with) other CLSA governance categories and corporate social responsibility receives much public attention.

Specification [S1] is estimated by two separate regressions: one with *INV_OPP* and *EXT_FIN,* and another with *OWN_CASH* as independent variables. These variables are separated for two reasons. First, using all three variables in the same regression substantially reduces the sample size because ownership data are not available for a substantial part of our sample. Second, using all three as independent variables in addition to their interaction terms with *LEGAL* creates severe multi-collinearity.

We estimate these regressions using country-random effects to take into account that observations on individual firms in a given country are not independent and that errors among observations are correlated.[21] Country-random effects specification is supported by the Breusch and Pagan (1980) test, which strongly rejects the hypothesis that the variation of random effects is zero. Moreover, our sample consists only of a sub-sample of the total population of countries and, thus, a random-effects specification is preferable (Greene (1997)).

[21] Shleifer and Wolfenzon (2002) obtain a similar result under a more restrictive set of assumptions.

In testing the hypotheses concerning firm valuation and corporate governance, we again control for strength of legal environment, industry, and firm characteristics and estimate the following cross-sectional regression using country-random effects:

$$Valuation_j^c = \alpha + \beta_1 * CORP\_GOV_j^c + \gamma_1 * LEGAL^c + \gamma_2 * CG_j^c * LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + \varepsilon_j^c . \quad [S2]$$

The inferences one can draw from these regressions are limited because of endogeneity and other econometric problems. To reduce endogeneity, we exercise care in choosing proxies for key variables and sample periods. For example, our measure of *EXT_FIN* is a projected need for external financing, not an outcome-based measure. We also choose different time periods to estimate the dependent and independent variables in [S1] and [S2]. In addition, we conduct various robustness checks for sample selection, endogeneity, regression model specification, and alternative definitions of main variables. We describe the results in Section V.

B. Firm Variables and Data

Because much of the firm-level data originate from financial statements and accounting practices that vary across countries, it is difficult to directly compare the data across countries. However, one of the key distinguishing characteristics in legal regimes is accounting standards; thus, the legal regime variable controls, to some extent, for their differences. Additionally, industry dummies help control for different accounting practices across industries. Any remaining noise would weaken the power of our tests. Most of the firm-level data are obtained from Worldscope. All variables are measured in U.S. dollars.

B.1 Investment Opportunities, External Financing, Ownership, and Valuation

To measure investment opportunities, *INV_OPP*, we rely on past growth in sales because it is less affected by diversion, manipulation, and different accounting rules than are earnings. We estimate a two-year geometric average of annual percentage growth in net sales from 1998 to 2000, and winsorize it at the 1st and 99th percentile.

In estimating the need for external financing, *EXT_FIN*, we avoid an outcome-based measure to reduce endogeneity. We use an estimate of projected need for outside capital employed in Demirgüç-Kunt and Maksimovic (1998), which measures the difference between required investment and internally available capital for investment. Required investment is estimated by a two-year geometric average of annual growth rate in total assets from 1998 to 2000; internally available capital for investment by a two-year average of *ROE*/(1-*ROE*) over the same period, where *ROE* is the rate of return on equity based on book value.[22]

For ownership concentration, we measure concentration of cash flow rights, *OWN_CASH*, as the share of cash flow rights held by the largest shareholder in 1996 as defined in Claessens, Djankov, and Lang (2002) (CDL). La Porta et al. (1998b, 2002), CDL, and Faccio and Lang (2002) emphasize the difference between control rights and cash flow rights. CDL show that firm value increases with cash flow rights (incentive effect) and decreases when control rights exceed cash flow rights (entrenchment effect). Control rights can exceed cash flow rights because of pyramidal structure, cross-holdings, and dual-class shares. For example, if the controlling shareholder owns ten percent of company A's outstanding stocks, which in turn owns 30 percent of firm B's stocks, then she is considered to control ten percent of firm B, the weakest link in the chain of control rights. However, the cash flow rights of firm B owned by the controlling shareholder is only three percent (10%×30%).

Data on cash flow rights and control rights are obtained from Mara Faccio and Larry Lang. Their data overlap our sample for only 173 and 240 firms in 12 and 11 countries for CSLA and S&P samples, respectively.[23] Control rights of the largest stockholder exceed the cash flow rights in 40.7 percent of the sample firms. Average ownership of cash flow rights and control rights are 21.07 percent and 25.83 percent, respectively. We define ownership wedge, *WEDGE*, as a

[22] See Demirgüç-Kunt and Maksimovic (1998) for assumptions and justifications for this measure.
[23] The countries are Australia, Brazil, Czech Republic, Hong Kong, Indonesia, Japan, Korea, Malaysia, Philippines, Poland, Singapore, Taiwan, Thailand, and Turkey.

dummy variable equal to one if control rights exceed cash flow rights by at least ten percent (19.3 percent of the sample firms) and zero, otherwise.[24]

Firm valuation is measured as the 2000-to-2001 two-year average of Tobin's Q. As in La Porta et al. (2002) and Doidge, Karolyi, and Stulz (2003), we define Tobin's Q as the sum of total assets plus the market value of equity less book value of equity, over total assets. The market value of equity is the number of common shares outstanding, times the year-end price.

This measure of *Q*, however, may be distorted due to excessive consolidation when partially owned subsidiaries are treated as fully owned subsidiaries. Consolidation of financial statements may also affect our estimates of growth in sales and external financing needs. La Porta et al. (2002) make adjustments for the potential distortion in *Q* and compare unadjusted *Q* with the consolidation-adjusted *Q*. They find a correlation of 0.83 between the two measures and conclude the distortion is not material enough to base their statistical results on adjusted *Q*. Although we do not adjust for consolidation for the same reason, we check for its effects by adding a consolidation dummy equal to one if a firm consolidates its financial statements, and zero otherwise. The consolidation dummy also controls for the possibility that consolidation of financial statements makes the combined entity more transparent.

As stated earlier, we separate time periods during which dependent and independent variables are measured to reduce endogeneity. Specifically, we use 2000 to 2001 to estimate two-year average *Q*, 2000 CLSA and S&P scores for *CORP_GOV*, and 1998 to 2000 to calculate two-year averages for *INV_OPP* and *EXT_FIN*, and 1996 for *OWNERSHIP*.

B.2 Control variables

Industry dummies (d_i) are included in regressions to account for differences in asset structure, accounting practice, government regulation, and competitiveness, all of which may affect

[24] The results do not change when *WEDGE* is defined by a five percent difference between control rights and cash flow rights.

corporate governance and firm valuation. We classify two-digit SIC industries into 13 groups as in Campbell (1996).[25]

Firm size, *SIZE*, is defined as the logarithm of sales. We use sales because they are less sensitive to differences in accounting standards across countries. Because larger firms tend to attract more attention and may be under greater scrutiny by the public, size may affect governance structure. Size also proxies for firm age; older and larger firms tend to have higher book-to-market value ratio.

Research and development expenditure scaled by sales, *R&D*, is used to control for differences in intangibility of corporate resources, which may be related to cost of diversion. Companies with high *R&D* expenditures also tend to be high-growth firms and may enjoy high valuation.

Export intensity, *EXPORT*, is defined as sales revenue generated from shipping merchandise to foreign countries, scaled by sales. This measure is used to control for differences in exposure to globalization pressures in the product market. Companies that conduct more business globally may feel more pressure to conform their corporate governance to global standards (see Khanna, Kogan, and Palepu (2002)).

If a firm has all major financial variables except for *R&D* and *EXPORT*, we set those two variables equal to zero; that is, we assume when a company does not report these variables it is because R&D spending or sales generated through export are negligible. Dropping companies with missing data for R&D and export would reduce our sample size considerably and may bias our sample towards technology-oriented firms. As a robustness check and as suggested by Himmelberg, Hubbard, and Palia (1999), we also use two dummy variables, which take values of one when a firm does not report R&D or export. These dummies control for the possibility that non-reporting firms are different from reporting firms.

[25] See Table V for industry dummy classification.

Finally, *ADR* dummy variable is included to control for listing on U.S. stock exchanges. Doidge, Karolyi, and Stulz (2003) provide evidence that ADR-listed foreign firms are valued higher. However, Siegel (2003) provides compelling evidence that it is not enforcement of U.S. securities law that causes the higher valuation. Since firms with high-quality accounting and governance practices are more likely to be ADR-listed, we expect *ADR* to be correlated with the CLSA governance and S&P transparency scores. The dummy variable is equal to one if a firm's shares or its ADRs are listed on U. S. exchanges in either 1999 or 2000 (15.9 percent of the sample) and zero, otherwise. We exclude privately placed ADRs through Rule 144a and 'Over-the-Counter' stocks.

SIZE, *R&D*, and *EXPORT* are two-year averages during 1999-2000. Table V provides a summary of variable definitions and data sources.

B.3 Sample Construction

For regression analyses we follow the usual practice of excluding financial institutions because of their unique financial structure, regulatory requirements, and accounting standards.[26] This exclusion reduces our sample by 106 and 116 firms in CLSA and S&P samples, respectively. When companies' identities are ambiguous, we check with the Internet Securities, Inc. (ISI) Emerging Markets database. We drop four and one firms in CLSA and S&P samples, because the ambiguity cannot be resolved, leaving 384 and 456 firms in the CLSA and S&P sample, respectively. Sample sizes are reduced further when relevant variables for each regression are unavailable from Worldscope. When *INV_OPP* and *EXT_FIN* enter as independent variables in [S1], 40 and 17 companies are dropped from CLSA and S&P samples due to missing data. One more firm is dropped from the S&P sample when Tobin's Q is used in [S2] because of missing data.

[26] We repeat all regressions including banks and financial firms with a financial dummy variable as a robustness check. The results are stronger due to larger sample sizes.

C. Correlation between Main Variables

Table VI reports correlations among main variables. Panel A shows both CLSA composite score, *COMP*, and investor protection, *PROTECT*, are positively correlated with Tobin's Q. As expected, *PROTECT* is positively correlated with external financing, and firms with ADRs score significantly higher on *COMP* but not on *PROTECT*. The S&P aggregate transparency score, *TRAN*, is positively correlated with Tobin's Q, measure of investment opportunities, firm size, and consolidation dummy, and is negatively correlated with firm export intensity.[27]

Panel B of the same table shows correlation coefficients between legal regime variables and firm-specific variables, which suggests that firms in countries with better investor protection and law enforcement are more reliant on external financing, enjoy higher valuation, and have lower ownership concentration. Firm size, R&D expenditures, exports intensity, and consolidation dummy are also correlated with Tobin's Q, confirming our reasons to control for these variables in regression analyses.

IV. Empirical Results

In this section we report country-random effects regression results. Estimates of [S1], the relation between CLSA or S&P scores with the three firm attributes and legal environment, are reported first, followed by the results on [S2], the relation between firm valuation and the governance or transparency scores.

A. Relation between Governance and Firm Attributes

A.1 Investment Opportunities and External Financing

Table VII reports the results of regression [S1] with *INV_OPP* and *EXT_FIN* for *COMP*, *PROTECT*, S*OCIAL*, and *TRAN*. The results are supportive of our hypotheses. Both investment opportunities and external financing are significantly positively related to the composite index

[27] Although the negative correlation between *COMP* and ownership concentration is surprising, it seems to be due to the low ownership concentration in strong legal regimes. There is a strong positive correlation between *LEGAL* and *COMP*.

and investor protection. The strength of legal regimes, *LEGAL*, is also positively related to both scores.

The interaction terms of legal regime with investment opportunities and external financing show negative coefficients, with three of four being significant. These results are consistent with the hypothesis that positive relations for investment opportunities and external financing are stronger in weaker legal environment. The results with the S&P score as the dependent variable also are largely consistent with those of the CLSA scores.

When *social awareness* is used as the dependent variable, however, none of the independent variables of interest are significant, except for external financing which shows an opposite sign. There is no evidence that firms are more socially responsible when they have better investment opportunities or need more external financing.

Results on ADR and consolidation dummies are also revealing. ADR listing seems to be highly related to firms' overall governance practices, but not with investor protection. This lack of relation between ADR and investor protection is consistent with Siegel's (2003) finding that investors of ADR listed firms do not benefit from U.S. securities regulation.[28] The consolidation dummy shows a similar pattern. Its coefficient is positive and significant for the composite score, but that is driven mainly through transparency. This result confirms the notion that firms consolidating their financial statements tend to be more transparent.

The results on *EXPORT* and *SIZE* are difficult to interpret. Export intensity is significantly negatively related to *COMP* and *TRAN*. This is contrary to the notion that more export-oriented firms face greater pressure to improve their governance and disclosure practices to meet global

[28] Although the results are not reported to save space, we relate the ADR dummy to the remaining five CLSA categories and find that ADR listing is significantly related to only those categories related to measures of transparency (*transparency*). When ADR is related to the three individual S&P categories, it is significantly related to only financial and accounting transparency (*disclosure*) but not to the transparency of ownership or board structures (*ownership* or *board*). These results suggest that relatively transparent firms with good accounting practices tend to list their shares in the U.S. through ADR; however, the same cannot be said for firms that practice good governance in terms of investor protection, managerial discipline, or board independence.

standards. A plausible, albeit cynical, interpretation is that firms with more export/import businesses can more easily (less costly) divert resources overseas through inflated invoices and rebates and, thus, have incentives to be more opaque in their business practices. Larger firms tend to have better overall governance and disclosure practices, but they seem to provide less investor protection.

A.2 Within-Country Variation Revisited

In Section I, we document that controlling for legal environment, within-country variation in the quality of governance is greater in weaker legal regimes. The evidence presented in the preceding section provides a better specification to estimate within-country variation, allowing for a reexamination. We use Glejser (1969) test and estimate the regression:[29]

$$CORP\_GOV_j^c = \alpha + \beta_1 * INV\_OPP_j^c + \beta_2 * EXT\_FIN_j^c + \gamma_1 LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + u_j^c .$$

Then we regress the absolute values of the fitted residuals $|\hat{u}|$ of the first regression on the parameters that may explain the conditional variation in governance,

$$|u_j^c| = \alpha + \beta_1 * INV\_OPP_j^c + \beta_2 * EXT\_FIN_j^c + \gamma_1 LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + \varepsilon_j^c .$$

The Glejser test is then the t-test that the coefficient on *LEGAL* is zero. Panel B of Table IV reports the results. For all the three measures of corporate governance and transparency the coefficient on *LEGAL* is negative and significant. This reconfirms our earlier finding that firms located in weaker legal regimes show greater variation in governance and disclosure practice.[30]

A.3. Ownership

The regression results of [S1] with ownership concentration are reported in Table VIII. The regressions contain the $OWNERSHIP^2$ term to account for possible non-linearity between

[29] Adams, Almeida, and Ferreira (2002) use this test to investigate firm variability in output as a function of CEO power in the U.S.

[30] We also conduct the Goldfeld-Quandt (1965) test of the null hypothesis that the variance of the residuals of the above regression for the weak and strong legal regime sub-samples are equal. The results are consistent with those of the Glejser test.

ownership concentration and corporate governance as in McConnell and Servaes (1990) and Himmelberg, Hubbard, and Palia (1999). It also contains *WEDGE* to account for differences in cash flow rights and control rights. We exclude companies with control rights less than five percent because it is not possible to identify the controlling shareholder in those cases.

As mentioned earlier, the sample size for ownership data is small to start with, and gets even smaller when we exclude financial firms. Without financial firms we have only 124 and 177 firms for an average of 10 and 16 firms per country for CLSA and S&P samples, respectively. To alleviate this small sample size problem, we add back financial firms and estimate [S1] with a financial industry dummy variable. The results are reported in Panel A. Panel B reports results without financial firms.

Panel A shows a significant positive coefficient on cash flow rights, *OWN_CASH*, and a significant negative coefficient on $OWNERSHIP^2$ for both *COMP* and *PROTECT*, suggesting that corporate governance improves with the concentration of ownership but at a decreasing rate. This is consistent with earlier findings of Morck, Shleifer, and Vishny (1988) and McConnell and Servaes (1990), who argue that greater ownership concentration by insiders may align their interests with those of minority shareholders, but it also may result in a greater degree of managerial entrenchment.

When *COMP* is the dependent variable, the coefficients for *WEDGE* and the interaction term between *OWN_CASH* and *LEGAL* are negative as expected but insignificant. This lack of significance is not surprising. As discussed earlier in Section III.A, there is no reason to expect firms with more concentrated ownership to disclose more or to be more transparent, although shareholders are expected to be less subject to agency conflicts and enjoy greater protection. *COMP* includes measures of transparency as well as investor protection.

When the investor protection score, *PROTECT*, is used as the dependent variable, all coefficients have the right signs and significant, including *WEDGE* and the interaction term. These results imply that investor protection improves with the concentration of cash flow rights

but decreases as the controlling shareholder acquires more control rights in excess of her cash flow rights through pyramidal structure, cross holdings, and/or dual class shares.

The negative and significant coefficient for the interaction term indicates that the positive relation between cash flow rights and investor protection is stronger in weaker legal regimes. This finding is consistent with our hypothesis that in weaker legal regimes concentrated ownership of cash flow rights becomes a more important tool to resolve agency conflict between controlling and minority shareholders.

When we use S&P transparency score as the dependent variables all the coefficients have the right signs but most of them lose significance. This lack of significance is not surprising as there is no reason to expect firms with concentrated ownership to disclose more. Finally, we repeat all the regressions excluding financial firms (Panel B). The results become weaker because of smaller sample sizes. However, the signs of coefficients are mostly in the right direction, and the results with *PROTECT* are the strongest, as expected.

In sum, the regression estimates of [S1] suggest that not only difference in legal environment matters, but firm-level differences in growth opportunity, external financing, and ownership concentration also matter in a firm's choice of governance practice. More important, these firm attributes matter more as the legal environment becomes less investor friendly.

B. Relation between Valuation and Governance

To investigate the relation between corporate governance practices and firm valuation, we estimate regression specification [S2] with Tobin's Q as the dependent variable. Independent variables are CLSA or S&P scores, legal regime, an interaction term of legal regime with corporate governance or disclosure scores, past sales growth, firm size, R&D expenditures, export, and ADR and consolidation dummies. Past sales growth is added to control for a possible spurious relation between corporate governance and valuation because growth opportunities are related to both valuation and corporate governance.

Table IX reports results based on CLSA and S&P scores. Consistent with our hypothesis, firms with higher-quality corporate governance are valued higher. The CLSA composite score is positively related with firm valuation, as is the measure of investor protection. The social awareness score again shows no relation to valuation, providing no evidence that investors value what CLSA defines as corporate social responsibility.

LEGAL also has the expected positive sign, consistent with the findings of La Porta et al. (2002) that firms located in better legal environments enjoy higher valuation. However, when it enters the regression along with either CLSA or S&P scores (Panel A), its coefficient becomes insignificant. Only when the same regression is estimated without governance or transparency scores (Panel B), does the coefficient on *LEGAL* become significant. It appears that CLSA and S&P scores provide extra information relevant for valuation that is not contained in the measure of the quality of legal environment.

The interaction term with *LEGAL* has the expected negative sign for *COMP, PROTECT*, and *TRAN,* and is significant for two out of three. These results are consistent with our conjecture that the positive relation between corporate governance and valuation is weaker in stronger legal regimes. This may explain why previous studies based on data from U.S. firms, which are located in one of the strongest legal frameworks, show mixed results on the relation between firm valuation and corporate governance.

Most of the control variables are of expected sign and highly significant. Firms with high growth opportunities are valued higher as are firms of smaller size, greater R&D expenditures, and more export orientation. The results also show no incremental ADR effect on firm valuation beyond the corporate governance and disclosure scores. Interestingly, La Porta et al. (2002) find no valuation effect of ADR listing for firms in civil law countries and a small positive effect for common law countries. Finally, the significant negative coefficient on the consolidation dummy is consistent with our suspicion that excessive consolidation biases Tobin's Q downward.

V. Robustness

Our results remain robust to a battery of checks on the sample selection, endogeneity problems, regression model specification, alternative definitions of main variables, and outliers.

A. Sample Selection

As stated earlier, CLSA and S&P select firms based on size and investor interest, which makes our results subject to a sample selection problem. We address the size problem by repeating regressions in Tables VII, VIII, and IX using the Heckman (1979) two-step selection model.[31] We find virtually no change in the magnitude or the significance of the coefficients and therefore conclude the results are robust to the sample selection problem.[32]

B. Endogeneity

Although our results are consistent with the predictions of the model, there is endogeneity problem in the regression analyses. In specification [S1] it is possible that good corporate governance leads to greater sales growth rather than good investment opportunities leading to good governance practice. Another plausible story is that companies that enjoy greater sales growth tend to be rated higher by CLSA; precisely why all the tests also are conducted with S&P data that are free from such subjectivity. Endogeneity is of less concern regarding external financing because our variable is the projected need, not outcome-based. We also are less concerned with ownership concentration because it is hard, at least for us, to build a plausible scenario of how good investor protection leads to more concentrated ownership.

[31] Heckman's selection model assumes that an underlying regression relation exists (in our case either Specification [S1] or [S2]) but the dependent variables are not always observed. The variables are observed if $\gamma \times SIZE_j + u_j > 0$ (selection equation), where γ is the selection equation coefficient, and the error term, u_j, is normally distributed with zero mean and variance equal to one. If the error term in [S1] or [S2], ε_{j1} or ε_{j2}, is correlated with the error term of the selection equation, u_j, then standard regression techniques applied to [S1] and [S2] yield biased results. Heckman's selection model provides consistent, asymptotically efficient estimates for all the parameters in a model. We estimate the selection equation using all companies covered by Worldscope for our sample countries that have sales data, the proxy for size, in either 1999 or 2000. There are 5,466 and 8,260 such companies for countries covered by CLSA and S&P. The coefficient on *SIZE* in the selection equation is positive and significant in all specifications indicating that larger firms are more likely to be included in CLSA and S&P samples.

[32] Results are available upon request. We do not control for investor interest because it is difficult to find a proxy.

On Specification [S2] one might argue that analysts assign higher governance scores to firms that enjoy high valuation rather than corporate governance being priced in the stock market. In anticipation of such an argument, we check the CLSA results with S&P data as a robustness check.

We nevertheless address the endogeneity issue more formally by estimating [S1] and [S2] as a system of simultaneous equations using a three-stage least squares method.[33] While this estimation technique allows for endogeneity between governance and valuation, we need to identify some exogenous parameters that only affect either governance or valuation, but not both. Identifying truly exogenous parameters is difficult; therefore, the results presented below must be interpreted with caution.

In the three-stage least squares estimation, the governance equation contains *COMP*, *PROTECT*, or *TRANS*, as the dependent variable, and *Q* as a simultaneously determined variable. We use the same set of control parameters used in Table VII excluding industry dummies and interaction terms. Although not reported, the coefficients on industry dummies are jointly insignificant in regressions reported in Table VII, suggesting that R&D expenditures, export intensity, and size in the governance equation control for difference in tangibility and other facets of industry classification that may affect governance. Thus, we assume that industry classification does not affect governance but does affect valuation. We also control for firms' *ALPHA* and *BETA* values in Worldscope computed over 23 and 35 consecutive month-end percentage price changes relative to a local market index during years from 1999 to 2001. To the extent that *ALPHA* proxies for excess returns, higher *ALPHA* values may make the controlling shareholder more willing to practice good governance. If higher market risk proxied by *BETA* provides better

[33] A similar approach is used by Lins (2003) to address endogeneity problems arising in the relation between ownership and valuation.

opportunities for the controlling shareholder to profit from inside information, high *BETA* may be negatively related to the quality of governance.[34]

The valuation equation contains *Q* as the dependent variable, governance or disclosure scores as a simultaneously determined variable, and the same control parameters as the governance equation, adding industry dummies and excluding *EXT_FIN*, size, *ALPHA*, and *BETA*. As in previous studies (see Demsetz and Villalonga (2001) and Lins (2003)), we assume that *ALPHA* and *BETA* affect governance but not valuation. We also assume that size has no further incremental effect on valuation after controlling for R&D expenditures and growth opportunities (see Himmelberg, Hubbard, and Palia (1999) for possible justifications).

Table X reports three-stage estimation results for *COMP* (Panel A), *PROTECT* (Panel B), and *TRAN* (Panel C).[35] The results are consistent with those reported in Tables VII and IX. Both *INV_OPP* and *EXT_FIN* are positively and significantly related to governance and disclosure practices in all panels, except for *INV_OPP* in Panel B, which shows the right sign but is not significant. Furthermore, *CORP_GOV* is positive and significant in valuation equations in all panels.[36]

Therefore, to the extent that three-stage least squares controls for simultaneity between governance and valuation, we conclude that companies with better investment opportunities and greater need for external financing practice better governance and disclose more, in turn leading to higher valuation.

C. Alternative Variables and Regression Specifications

Our results are also robust to alternative definitions of independent variables or to added control variables. It is possible, for instance, that governance and transparency scores are more related to other proxies of legal environment than to investor protection and rule of law. Several

[34] Data availability for *ALPH*A and *BETA* from Worldscope yield 302 and 296 firms for CLSA and S&P samples, respectively.
[35] Including interaction terms would require specifying more exogenous parameters. Hence, we exclude interaction terms from the three-stage least squares estimation.
[36] When we use country fixed effects without *LEGAL* our three-stage estimation results do not change.

alternative variables are used to measure *de jure* protection of capital suppliers and *de facto* enforcement, and the conclusions do not change.[37]

Our investment opportunities are measured by past growth in sales. When we replace it with a more direct measure of investment profitability, return on invested capital as defined by Worldscope, our results do not change. As mentioned earlier, we instrument current values of *INV_OPP* and *EXT_FIN* by their lagged values to reduce endogeneity. Using contemporaneous measures does not change our findings. The findings also remain valid when we include a dummy variable equal to one when R&D or export data is missing.

Finally, CLSA investor protection score, *PROTECT*, contains one and six companies scoring zero (minimum possible) and 100 (maximum possible), respectively. Since this score is truncated, a limited dependent variable approach (Tobit regression) may be more appropriate for Specification [S1]. The results in Tables VII and VIII do not change if we use Tobit regression.

D. Outliers

To reduce the effects of outliers, all but corporate governance and disclosure scores are calculated as two-year averages. In addition, *INV_OPP*, *EXT_FIN*, and *Q* are winsorized at the 1st and 99th percentile because these variables take extreme values for some firms. As an additional check, we apply different methodologies to trim outliers: Hadi's (1994) multivariate method (with a percent cut-off) and Cook's D statistics. Finally, several countries contain data for only a few companies. We rerun all regressions dropping countries with fewer than 3 firms.[38] None of these procedures change the results.[39]

[37] Specifically, we follow the principal component analysis outlined in Berkowitz, Pistor, and Richard (2002) and combine investor and creditor protection to construct a single capital providers' protection index; for enforcement, we combine efficiency of the judicial system, rule of law, absence of corruption, risk of expropriation, and risk of contract repudiation to derive a single index. See La Porta et al. (1998a) for definitions of these variables.

[38] Argentina, Columbia, Czech Republic, Greece, Hungary, Peru, Poland, and Russia are dropped from the CLSA sample, and New Zealand from the S&P sample.

[39] Results of the robustness checks are available from the authors upon request

V. Summary and Implications

This paper analyzes how firm attributes are related to a firms' choice of governance practice and interact with legal environment. With a simple model we demonstrate that growth opportunities, need for external financing, and concentrated ownership lead to better governance practice and that the effects are stronger in weaker legal environments. We also show that firms with better governance are valued higher.

These predictions are tested on two newly constructed sets of data on the quality of governance and disclosure practices. All regressions are estimated with control variables that include industry dummies, size, R&D expenditures, export intensity, and ADR and consolidation dummy variables. Consistent with the theory, all three firm attributes are positively related to the quality of governance and disclosure practices.

The positive relations are stronger in countries with weaker legal frameworks. Apparently, firms in weak legal regimes structure their own governance practices to take advantage of better investment opportunities, as do firms with greater needs for external financing to overcome the adverse effects of poor legal protection on their ability to raise external capital. Firms also rely on ownership concentration to resolve agency conflict between controlling and other shareholders in response to weak investor protection.

These results have implications for the debate concerning the Coase (1960) argument. While our results confirm the La Porta et al. (1998a) basic thesis that law matters for corporate governance, firms seem to adapt to poor legal frameworks to establish efficient governance practices.[40]

Although firms are valued higher in stronger legal environments, the relation becomes insignificant when the scores on the quality of governance and disclosure practices are accounted for in regression. Apparently, the scores reflect not only the quality of legal framework in which

[40] See Johnson and Shleifer (2000) for a literature review on the debate concerning the Coase argument in corporate governance.

firms are located, but also contain firm-specific information of importance to investors in assessing firm value. This result offers encouraging news to corporate decision makers, especially those located in weak legal regimes: By adopting sound governance and disclosure practices, they can help increase their shareholder wealth regardless of where they are located.

The positive relation between firm valuation and the quality of governance and disclosure practice is weaker in stronger legal regimes. This may explain why previous studies based on U.S. data show mixed results, because the U.S. provides one of the strongest legal frameworks.

One governance category consistently showing no relation to firm attributes or to firm valuation is social awareness. It seems as if firms do not become more socially responsible when they have better growth opportunities, need more external financing, or have higher ownership concentration, perhaps because they believe social responsibility is not important to investors. Indeed, we find no evidence that investors value what CLSA defines as social awareness—measures of child labor practices, political legitimacy, environmental responsibility, equal employment policy, and ethical behavior. Several of these measures are quite contentious. For example, economists debate whether child labor in low-income economies is damaging to those societies as the alternatives could be starvation, prostitution, or drug peddling.

Our results imply that economic policies play an important role in guiding firms toward good governance practices. Policy makers often debate the merits of pro-growth *versus* redistribution policies. One important consequence they must consider in this debate is that pro-growth policies generate more profitable investment opportunities and stimulate external financing needs of corporations. Both of these conditions provide controlling shareholders incentives to improve governance practices. In short, pro-growth policies encourage voluntary improvement in corporate governance, whereas redistribution oriented policies discourage it. In addition, redistribution policies tend to weaken property rights, reducing the incentives to increase cash flow rights for controlling shareholders. Any tax increase for redistribution purposes also

decreases the cash flow rights of controlling shareholders. Such reductions in cash flow rights increase agency conflicts and may weaken investor protection.

Our results also have implications for the debate on whether globalization leads to convergence in corporate governance (see Bebchuk and Roe (1999), Coffee (1999), Berglöf and von Thadden (2000), Khanna, Kogan, and Palepu (2002)). With the increasing globalization of trade and capital flows, national boundaries and legal jurisdictions are becoming less effective in defining corporate behavior, making individual firm attributes more relevant in shaping corporate governance. According to our results, firms with better growth opportunities, greater need for external financing, and higher ownership concentration located in countries with pro-growth economic policies are more likely to converge toward the global standard.

Finally, caveats are in order. Although we have attempted to address endogeneity, a full treatment requires time-series analyses of changes in corporate governance practices, a task we plan to pursue upon sufficient accumulation of data over time. On the theoretical level, we are able to identify three firm attributes related to corporate governance; however, further research may reveal the existence of other variables of greater importance.

Appendix A: A Model with Diversion Occurring after Investments

If the controlling shareholder diverts resources after investments are made, she will take all positive NPV projects because it will increase both her share of liquidating dividends and the amount of diversion. Thus the pre-diversion value of the firm is $\Pi = \int_0^{\overline{\pi}} (1 + \overline{\pi} - j)dj = \overline{\pi} + \overline{\pi}^2 / 2$. Her decision is then to maximize $\alpha (1-d) \Pi + d \Pi - C$, where C is the total dollar cost of diversion.

We assume C is convex in both the fraction, d, and the pre-diversion value of the firm Π. Previous authors also have assumed a convex cost function in d (e.g., Johnson et al. (2000), Shleifer and Wolfenzon (2002), and Doidge, Kalolyi, and Stulz (2003)), with the rationale that hiding larger amounts of diversion gets increasingly harder as diversion increases. Notice that the amount of diversion is a function of both the fraction d and the size of the firm. Thus we assume $C = c(d\Pi)^p$, where $p > 1$. Another justification for this assumption is that larger firms tend to attract more investor interest and hence are under greater public scrutiny.

Solving for the first order condition with this cost function, we obtain:

$$(1-\alpha)\Pi - pcd^{p-1}\Pi^p = 0, \qquad [A1]$$

where the marginal benefit of diversion, $(1-\alpha)$, the minority shareholders' wealth loss, is equal to the marginal cost. The second order condition is satisfied because $-p(p-1)cd^{p-2}\Pi^p < 0$. From the first order condition we obtain the optimal diversion:

$$d^* = \frac{1}{\Pi}\left(\frac{1-\alpha}{pc}\right)^{\frac{1}{p-1}}. \qquad [A2]$$

Taking the partial and cross partial derivatives with respect to $\overline{\pi}$, c, and α, we obtain:

$$\frac{\partial d^*}{\partial \overline{\pi}} = -\frac{(1+\overline{\pi})}{\Pi^2}\left(\frac{1-\alpha}{pc}\right)^{\frac{1}{p-1}} < 0, \qquad [A3]$$

$$\frac{\partial d^*}{\partial \overline{\pi}\partial c} = \left(\frac{1}{p-1}\right)\frac{(1+\overline{\pi})}{\Pi^2}\left(\frac{(1-\alpha)}{c^p p}\right)^{\frac{1}{p-1}} > 0, \qquad [A4]$$

$$\frac{\partial d^*}{\partial \alpha} = -\left(\frac{1}{p-1}\right)\frac{1}{\Pi}\left(\frac{(1-\alpha)^{2-p}}{pc}\right)^{\frac{1}{p-1}} < 0, \qquad \text{[A5]}$$

$$\frac{\partial d^*}{\partial \alpha \partial c} = \frac{1}{(p-1)^2}\frac{1}{\Pi}\left(\frac{(1-\alpha)^{2-p}}{pc^p}\right)^{\frac{1}{p-1}} > 0. \qquad \text{[A6]}$$

Equations [A3] through [A6] are consistent with Equations [6] through [9]. Finally, the market value, $(1-d)\Pi$, is decreasing in d^*. Therefore, we obtain Hypotheses 1 through 5, and 7 stated in the text.

Appendix B: Relation between External Financing and Corporate Governance

Consider a firm that has decided to invest *I* but has no assets or internal funds to finance it. The firm's value derives solely from the net present value of the project requiring *I,* of which the controlling shareholder owns α fraction. The project is financed by proceeds from selling 1-β fraction of the firm to other investors. The firm must raise *I/(1-d)* such that when the controlling shareholder diverts *dI/(1-d)*, the firm will be left with *I* for investment. Under these assumptions the controlling shareholder's payoff is

$$P = \alpha(\beta MV) + (1-c)\frac{dI}{1-d}. \qquad \text{[B1]}$$

Since new investors earn only the equilibrium rate of return on their investment, which is zero by assumption,

$$1-\beta = \frac{I/(1-d)}{MV}. \qquad \text{[B2]}$$

Substituting equation [B2] to equation [B1],

$$P = \alpha\left(MV - \frac{I}{1-d}\right) + (1-c)\frac{d}{1-d}I. \qquad \text{[B3]}$$

Differentiating [B3] with respect to *d*,[41]

$$\frac{\partial P}{\partial d} = \left[\frac{1-c-\alpha}{(1-d)^2}\right]I. \qquad \text{[B4]}$$

[41] We obtain equation [B4] because I is given and $MV = \int_0^I (1+\overline{\pi}-j)dj = (1+\overline{\pi})I - I^2/2$, and hence, $\partial MV / \partial d = 0$.

If c > 1 - α, equation [B4] is negative and the optimal $d = 0$. When the cost of diversion, c, is greater than the wealth transfer from the existing shareholders, $1 - \alpha$, the controlling shareholder will find it optimal not to divert any corporate resources.

If $c < 1 - \alpha$, equation [B4] is positive and there is an incentive to maximize d. As can be seen from equation [B2], however, increasing d means the controlling shareholder must sell a greater fraction of the firm, decreasing her ownership of the firm, $\alpha\beta$. Because she will lose control of the firm when β falls below a certain point, the maximum fraction of the firm she sells to new investors is bounded by a minimum β_{min}, below which the controlling shareholder loses the control of the firm.[42] Substituting β_{min} into equation [B2], we obtain:

$$d^* = 1 - \left(\frac{1}{1-\beta_{\min}}\right)\frac{I}{MV} \quad . \qquad \text{[B5]}$$

Since I is the amount of external financing needed, taking partial derivative of d^* with respect to I,

$$\frac{\partial d^*}{\partial I} = -\left(\frac{1}{1-\beta_{\min}}\right)\frac{1/2}{\left((1+\bar{\pi}) - I/2\right)^2} < 0 \quad . \qquad \text{[B6]}$$

Thus, the need for external financing is inversely related to d^*.

[42] We thank Daniel Wolfenzon for pointing this out.

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Figure 1. Optimal Diversion, Investments, and Market Values for a Firm with a Maximum Rate of Return $\bar{\pi}$

This figure presents the investment opportunity set for a firm with an initial endowment equal to $\bar{\pi}$. The area $(1+\bar{\pi})BC0$ is equal to the firm's market value, $MV = \bar{\pi} + \frac{\bar{\pi}^2}{2}$, if the firm invests in all positive NPV projects, i.e., $j = \bar{\pi}$. The optimal amount of diversion is $D^* = \frac{1-c-\alpha}{\alpha}$, and it reduces the optimal investment to $j^* = 1 + \bar{\pi} - \frac{1-c}{\alpha}$. The value of the firm at j^* is the area $(1+\bar{\pi})AF0$.

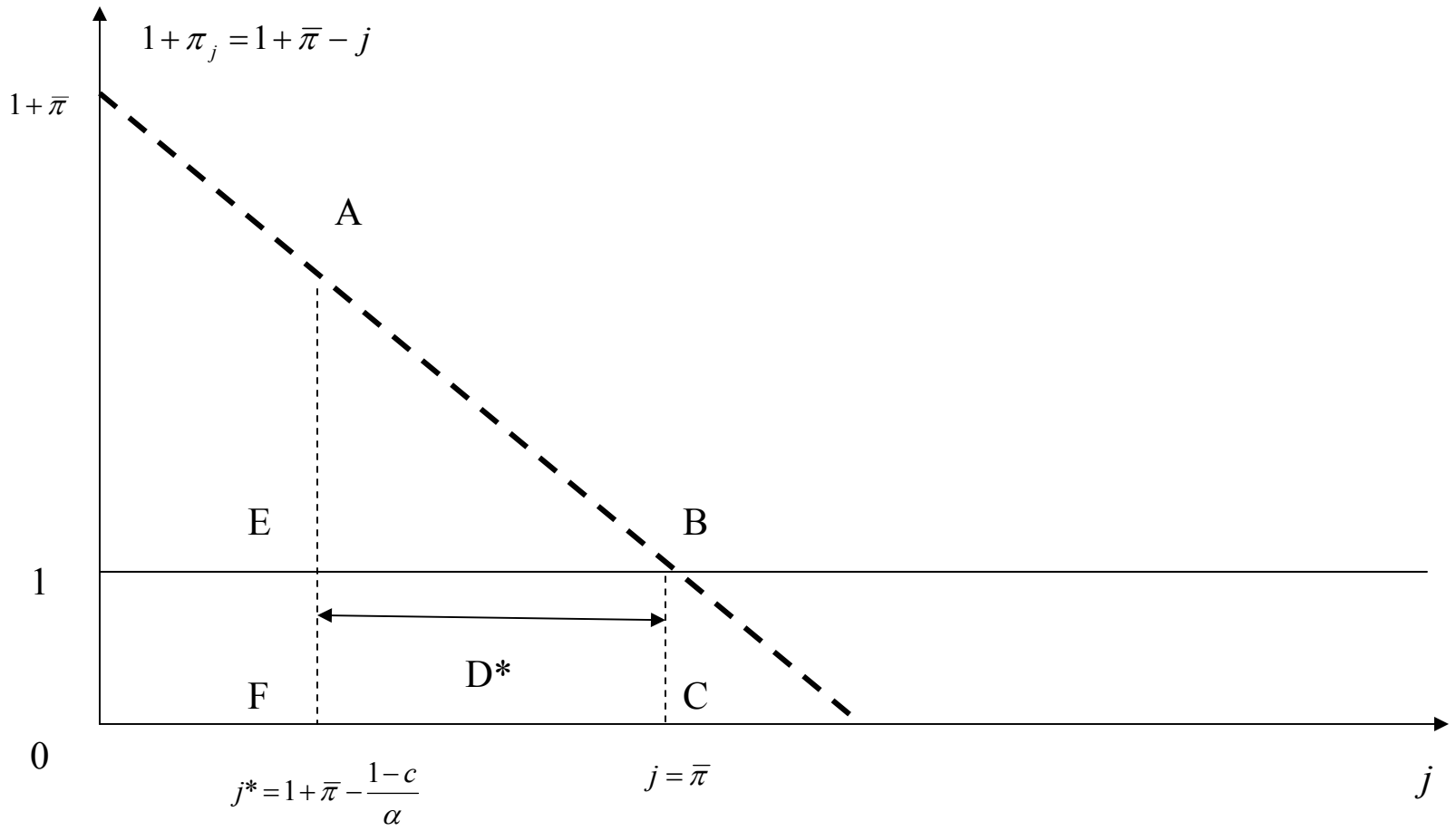

Figure 2. A Controlling Shareholder's Payoff as a Function of Diversion, *d*, with Different Investment Profitability and Legal Regimes

This graph plots a controlling shareholder's pay-off as a function of diversion *d* for the same ownership $\alpha = 0.3$, excess cash $e = 0$, and different cost of diversion *c* and profitability of investment opportunity, $\bar{\pi}$.
US, LOW PROFITABILITY: $c^{US}=0.6$; $\bar{\pi}_L = 2.0$ (black broken curve)
US, HIGH PROFITABILITY: $c^{US}=0.6$; $\bar{\pi}_H = 2.2$ (black solid curve)
RUSSIA, LOW PROFITABILITY: $c^{RUS}=0.3$; $\bar{\pi}_L = 2.0$ (gray broken curve)
RUSSIA, HIGH PROFITABILITY: $c^{RUS}=0.3$; $\bar{\pi}_H = 2.2$ (gray solid curve)
The corresponding optimal levels of diversion are $d^H_{US} = 0.15$; $d^L_{US} = 0.17$; $d^H_{RUS} = 0.61$; and $d^L_{RUS} = 0.67$.
As the profitability changes from $\bar{\pi}_L = 2.0$ to $\bar{\pi}_H = 2.2$, the optimal level of diversion drops by $\Delta d_{US} = d^L_{US} - d^H_{US} = 0.02$ in the U.S. and by $\Delta d_{RUS} = d^L_{RUS} - d^H_{RUS} = 0.06$ in Russia.

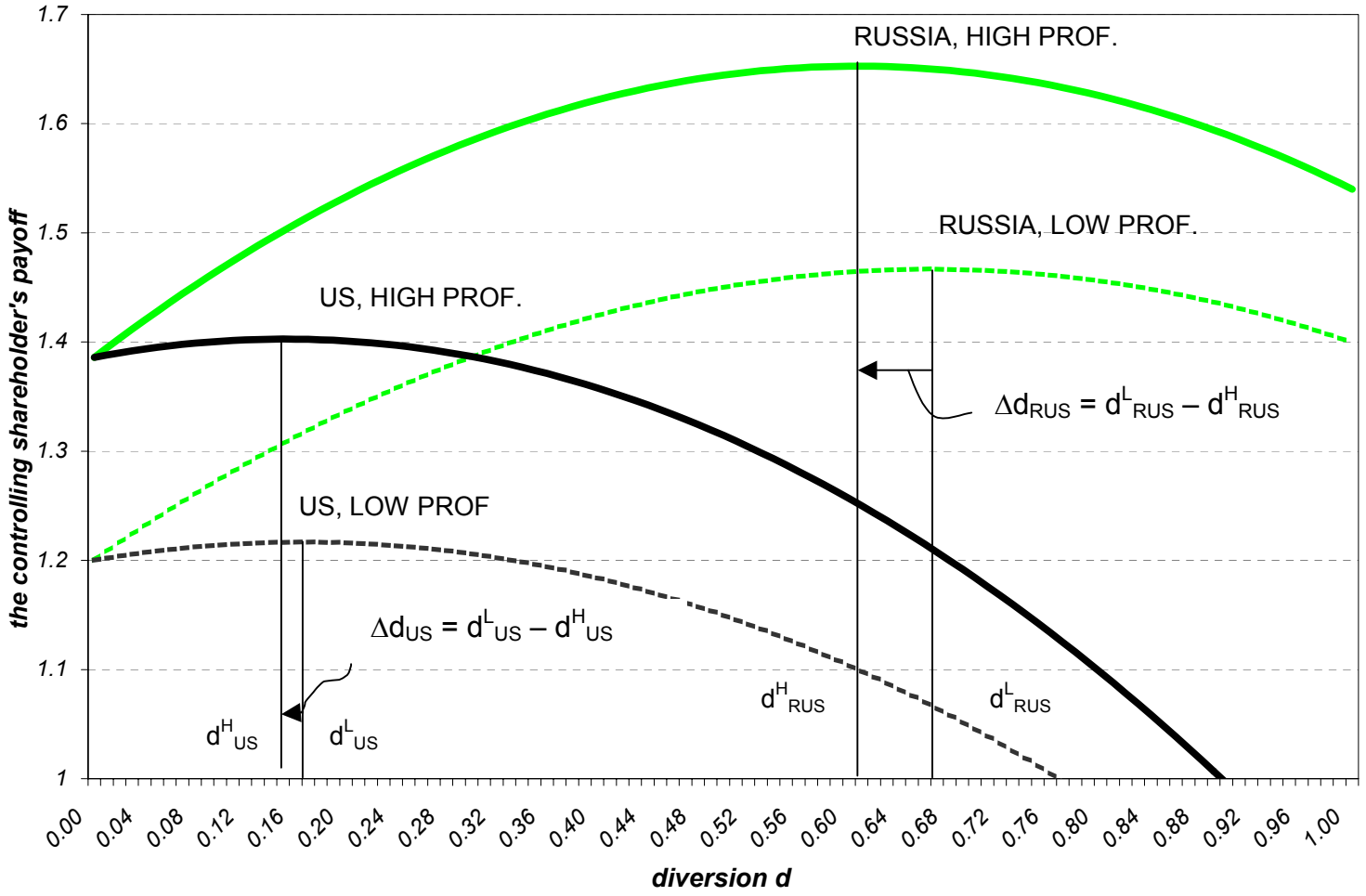

Table I
Relation between Corporate Scandals, CLSA Composite Score, and Control Variables

This table presents the results of country-random effects regression of the number of scandals on CLSA composite governance score, *COMP*, and control variables. We count the number of articles appearing in Lexis-Nexis containing negative information, such as assets expropriation, accounting misreporting, earnings manipulation, stock price manipulation, insider trading, share dilution, and undertaking illegal projects during the period from January 1, 1999 to December 31, 2001. In Panel A, we control for the quality of legal environment, *LEGAL*, which is defined as *INVESTOR* × *ENFORCE*, where *INVESTOR* is the anti-director index, and *ENFORCE* is rule of law, and the log of the total number of articles, *TOTAL*. In Panel B, we also control for the number of newspapers per capita, *NEWS*, defined in Dyck and Zingales (2002). *NEWS* is not defined for China and India. The sample consists of the top three and bottom three CLSA composite score firms in each country containing more than 11 firms. These countries are: Brazil, Chile, China, Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, South Africa, Taiwan, Thailand, and Turkey. The total number of articles covered is 29,320. The number of articles with scandals is 49. If the same scandal appears in multiple articles we count it only once. Numbers in parentheses are probability levels at which the null hypothesis of zero coefficient can be rejected. Coefficients significant at least at the ten percent level (based on two-tailed test) are in boldface. Refer to Table V for definitions of variables.

Dependent variable: Number of Scandals	*Panel A*	*Panel B*
COMP	**-0.023**	**-0.017**
	(0.00)	(0.00)
LEGAL	0.003	-0.015
	(0.82)	(0.15)
NEWS	-	0.017
		(0.75)
TOTAL	**0.157**	**0.088**
	(0.01)	(0.08)
Wald-test statistics of overall significance	**19.960**	**23.340**
	(0.00)	(0.00)
Regression R^2	0.193	0.259
Number of observations	84	72

Table II
Correlation Coefficients between Categories of CLSA Governance and S&P Transparency Scores

This table reports correlation coefficients between different categories of CLSA and S&P samples. CLSA sample size is 494 companies. S&P sample size is 573 companies. All correlation coefficients are simple correlation coefficients, except those between CLSA and S&P categories. The correlation coefficients between S&P and CLSA categories are Spearman rank-order correlation coefficients and are based on 208 companies present in both samples. Numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. Coefficients significant at least at the ten percent level (based on two-tail test) are in bold face. *COMP* is defined as 0.15 × *DISCIPLINE* + 0.15 × *TRANSP* + 0.15 × *INDEP* + 0.15 × *ACCOUNT* + 0.15 × *RESPON* + 0.15 × *PROTECT*, where *DISCIPLINE* is a measure of managerial incentives and discipline towards value maximizing actions; *TRANSP* is a measure of timeliness and accuracy of financial information disclosure; *INDEP* is a measure of board independence; *ACCOUNT* is a measure of board accountability; *RESPON* is a measure of enforcement and management accountability; and *PROTECT* is a measure of minority shareholder protection. *TRAN* is defined as *OWNERSHIP* + *DISCLOSURE* + *BOARD*, where *OWNERSHIP* is the number of items disclosed on ownership structure and investor relations; *DISCLOSURE*, on financial transparency and information disclosure; and *BOARD*, on board and management structure and processes.

CLSA Governance Scores							***S&P Transparency Rankings***				
TRANSP	*INDEP*	*ACCOUNT*	*RESPON*	*PROTECT*	*SOCIAL*	*COMP*	*OWNERSHIP*	*DISCLOSURE*	*BOARD*	*TRAN*	***CLSA Governance Scores***
0.19	**0.27**	**0.26**	**0.35**	**0.23**	**0.21**	**0.59**	-0.08	-0.01	-0.01	-0.02	*DISCIPLINE*
(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.23)	(0.64)	(0.91)	(0.72)	
	0.18	**0.23**	**0.34**	**0.13**	0.05	**0.53**	**0.13**	**0.17**	0.11	**0.15**	*TRANSP*
	(0.00)	(0.00)	(0.00)	(0.01)	(0.23)	(0.00)	(0.05)	(0.02)	(0.13)	(0.03)	
		0.21	**0.36**	**0.29**	0.05	**0.66**	0.08	-0.11	0.06	0.03	*INDEP*
		(0.00)	(0.00)	(0.00)	(0.23)	(0.00)	(0.24)	(0.11)	(0.42)	(0.63)	
			0.28	0.06	**0.24**	**0.53**	-0.02	0.07	**0.18**	0.10	*ACCOUNT*
			(0.00)	(0.19)	(0.00)	(0.00)	(0.75)	(0.33)	(0.01)	(0.16)	
				0.40	0.02	**0.73**	**0.15**	**0.28**	**0.21**	**0.24**	*RESPON*
				(0.00)	(0.69)	(0.00)	(0.03)	(0.00)	(0.00)	(0.00)	
					0.02	**0.62**	**0.18**	0.06	**0.24**	**0.20**	*PROTECT*
					(0.60)	(0.00)	(0.01)	(0.40)	(0.00)	(0.00)	
						0.15	**-0.25**	**-0.16**	0.004	**-0.12**	*SOCIAL*
						(0.00)	(0.00)	(0.02)	(0.95)	(0.08)	
							0.15	**0.13**	**0.22**	**0.20**	*COMP*
							(0.03)	(0.07)	(0.00)	(0.00)	
											S&P Transparency Rankings
								0.61	**0.62**	**0.85**	*OWNERSHIP*
								(0.00)	(0.00)	(0.00)	
									0.57	**0.82**	*DISCLOSURE*
									(0.00)	(0.00)	
										0.89	*BOARD*
										(0.00)	

Table III
Summary Statistics of Legal Regime Variables, CLSA Composite Governance Score and S&P Transparency Ranking by Country

This table reports the legal regime variables, the mean, standard deviation, minimum, and maximum of CLSA composite corporate governance scores, *COMP*, and S&P transparency rankings, *TRAN*, by country. *ORIGIN* is legal origin; *INVESTOR* is the anti-director index; *ENFORCE* is rule of law; *LEGAL* is *INVESTOR* × *ENFORCE*. *N* is number of firms in the country. Refer to Table V for definitions of variables. "na" stands for "not available".

	Legal regime variables				CLSA composite governance score, *COMP*					S&P transparency ranking, *TRAN*				
Country	*ORIGIN*	*INVESTOR*	*ENFORCE*	*LEGAL*	**Mean**	**St. Dev.**	**Min**	**Max**	**N**	**Mean**	**St. Dev.**	**Min**	**Max**	**N**
Argentina	Civil (French)	4	8.33	33.32	60.00	.	60.00	60.00	1	23.44	8.37	12.00	35.00	9
Australia	Common	4	10.00	40.00	.	.	.	.	.	56.69	7.19	37.00	66.00	26
Brazil	Civil (French)	3	3.33	9.99	53.76	7.97	38.78	68.22	30	27.30	10.46	16.00	51.00	30
Chile	Civil (French)	5	8.33	41.65	57.02	5.38	43.40	65.04	16	29.44	10.48	13.00	50.00	18
China	Civil (German)	1	8.13	8.13	43.56	11.24	21.62	64.50	25	41.88	10.14	24.00	56.00	16
Columbia	Civil (French)	3	2.64	7.92	47.87	.	47.87	47.87	1	.	.	.	.	.
Czech Rep.	Civil (German)	2	8.33	16.66	51.42	.	51.42	51.42	1	.	.	.	.	.
Greece	Civil (French)	2	5.07	10.14	52.11	5.15	48.47	55.76	2	.	.	.	.	.
Hong Kong	Common	5	8.33	41.65	56.28	11.37	35.04	83.49	38	41.76	4.02	33.00	54.00	42
Hungary	Civil (German)	3	8.61	25.83	49.49	8.33	43.61	55.38	2	.	.	.	.	.
India	Common	5	6.67	33.35	47.58	10.03	29.10	83.27	79	33.66	9.58	15.00	55.00	41
Indonesia	Civil (French)	2	3.33	6.66	33.56	11.00	10.59	56.57	18	32.73	6.36	22.00	43.00	11
Japan	Civil (German)	4	9.24	36.96	.	.	.	.	.	44.30	7.87	19.00	59.00	150
Korea	Civil (German)	2	6.67	13.34	38.57	6.35	29.70	52.86	24	39.49	10.25	12.00	54.00	47
Malaysia	Common	4	5.28	21.12	50.65	13.65	19.47	72.83	47	39.54	6.73	30.00	56.00	50
Mexico	Civil (French)	1	3.33	3.33	55.68	7.30	43.55	63.96	8	22.81	8.37	13.00	47.00	16
New Zealand	Common	4	10.00	40.00	.	.	.	.	.	51.00	.	51.00	51.00	1
Pakistan	Common	5	5.00	25.00	27.83	12.71	15.53	60.02	11	31.56	6.71	20.00	43.00	9
Peru	Civil (French)	3	5.00	15.00	68.84	.	68.84	68.84	1	19.00	3.56	16.00	26.00	7
Philippines	Civil (French)	3	5.90	17.70	36.03	12.16	17.46	57.92	20	23.44	5.73	11.00	30.00	9
Poland	Civil (German)	3	7.15	21.45	34.53	0.81	33.96	35.10	2	.	.	.	.	.
Russia	Civil (na)	5	5.00	25.00	13.77	.	13.77	13.77	1	.	.	.	.	.
Singapore	Common	4	10.00	40.00	59.05	8.45	40.83	77.37	43	51.27	8.33	28.00	68.00	26
South Africa	Common	5	3.54	17.70	61.01	7.96	38.36	75.90	40	.	.	.	.	.
Taiwan	Civil (German)	3	6.67	20.01	47.16	8.85	25.80	67.07	47	18.33	6.23	13.00	31.00	39
Thailand	Common	2	8.33	16.66	48.58	12.31	25.50	71.12	20	42.08	11.54	15.00	57.00	26
Turkey	Civil (French)	2	6.04	12.08	36.23	9.87	21.09	51.09	17	.	.	.	.	.
Average		3.30	6.60	22.25	47.11	.	.	.	**Total:** 494	35.25				**Total:** 573

Table IV

The Relation between Conditional Variation in CLSA Governance and S&P Transparency Scores and the Quality of Legal Environment

This table reports the results of the regression:

$$|u_j^c| = \alpha + \beta_1 * INV\_OPP_j^c + \beta_2 * EXT\_FIN_j^c + \gamma_1 LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + \varepsilon_j ,$$

where $\hat{u}$ are the fitted values of the residuals from the regression

$$CORP\_GOV_j^c = \alpha + \beta_1 * INV\_OPP_j^c + \beta_2 * EXT\_FIN_j^c + \gamma_1 * LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + u_j .$$

In these regressions *c* indexes country; *i* indexes industry; and *j* indexes firm. *CORP_GOV* is one of CLSA corporate governance scores (*COMP* or *PROTECT*) in 2000 or S&P transparency rankings (*TRAN*). *d* are industry dummies (coefficients are not reported). *INV_OPP* (investment opportunities) is 1998-to-2000 two-year geometric average of growth rate in net sales (winsorized at the 1st and 99th percentile); *EXT_FIN* (external financing need) is the difference between 1998-to-2000 two-year geometric average growth rate in total assets minus 1998-to-2000 two-year geometric average maximum sustainable growth rate, where the latter is equal to *ROE/*(1 - *ROE)*, and *ROE* (return on equity) is net income over book value of equity (winsorized at the 1st and 99th percentile); *LEGAL* is *INVESTOR* × *ENFORCE*, where *INVESTOR* (investor protection) is the anti-director index, and *ENFORCE* (enforcement) is rule of law. *Z* are control variables: *SIZE* is log of sales, 1999-to-2000 two-year average; *R&D* is research and development expenditures scaled by sales, 1999-to-2000 two-year average; *EXPORT* is export scaled by sales, 1999-to-2000 two-year average; *ADR* is a dummy variable, equal to one if a firm's shares are listed on U.S. stock exchanges in either 1999 or 2000, and zero, otherwise; and *CONSOL* is a dummy variable, equal to one if a firm consolidates its financial statements, and zero, otherwise. U_{COMP}, $U_{PROTECT}$, and U_{TRAN} are the fitted values of the residuals obtained from the first-stage regressions, where the dependent variables are *COMP*, *PROTECT*, and *TRAN*, respectively. Numbers in parentheses are probability levels at which the null hypothesis of zero coefficient can be rejected. Coefficients significant at least at the ten percent level (based on two-tailed test) are in boldface. In Panel A we control only for *LEGAL* and drop countries that contain fewer than ten firms. Those countries are: Argentina, Columbia, Czech Republic, Greece, Hungary, Malaysia, Mexico, Peru, Poland, and Russia (CLSA sample) and Argentina, New Zealand, Pakistan, Peru, and Philippines (S&P sample). In Panel B, we control for other relevant variables and drop firms that belong to financial industries (SIC 60, 61, 62, 63, 65, 67). We also drop firms from the sample (Panel B) if they do not have one of the following items in a given year of interest: total assets, sales, total assets, book value of equity, or net income. If all items, except for R&D expenditures and export, are available, we set those two equal to zero. Refer to Table V for definitions of variables.

	Panel A			*Panel B*		
Dependent Variable	$\|U_{COMP}\|$	$\|U_{PROTECT}\|$	$\|U_{TRAN}\|$	$\|U_{COMP}\|$	$\|U_{PROTECT}\|$	$\|U_{TRAN}\|$
INV_OPP	-	-	-	1.795	-0.718	1.221
				(0.14)	(0.72)	(0.51)
EXT_FIN	-	-	-	1.268	0.037	0.169
				(0.11)	(0.98)	(0.92)
LEGAL	**-0.080**	**-0.379**	**-0.099**	**-0.061**	**-0.400**	**-0.113**
	(0.01)	(0.00)	(0.00)	(0.07)	(0.00)	(0.00)
SIZE	**-**	**-**	**-**	0.377	**1.207**	-0.255
				(0.20)	(0.02)	(0.20)
R&D	-	**-**	-	**-40.779**	-6.682	0.829
				(0.06)	(0.86)	(0.95)
EXPORT	-	-	-	0.712	**8.089**	-1.359
				(0.75)	(0.03)	(0.55)
ADR	-	-	-	-0.737	-1.198	**1.349**
				(0.49)	(0.50)	(0.10)
CONSOL	**-**	**-**	**-**	**1.682**	-1.835	0.911
				(0.10)	(0.27)	(0.37)
F-test statistics of overall significance	**7.760**	**73.720**	**17.540**	**1.610**	**4.620**	**2.360**
	(0.01)	(0.00)	(0.00)	(0.05)	(0.00)	(0.00)
Regression R^2	0.016	0.135	0.032	0.090	0.223	0.101
Number of Companies	475	475	538	344	344	439

Table V
Variables, Definitions, and Source

Variable	Notation	Definitions and Sources
CLSA Governance and S&P Transparency Scores		
Investor Protection	*PROTECT*	Measure of minority shareholder protection. Source: 2000 CLSA Corporate Governance Scores. Range: 0-100.
Composite	*COMP*	Defined as 0.15 × *DISCIPLINE* + 0.15 × *TRANSP* + 0.15 × *INDEP* + 0.15 × *ACCOUNT* + 0.15 × *RESPON* + 0.15 × *PROTECT*, where *DISCIPLINE* is a measure of managerial incentives and discipline towards value maximizing actions; *TRANSP* is a measure of timeliness and accuracy of financial information disclosure; *INDEP* is a measure of board independence; *ACCOUNT* is a measure of board accountability; *RESPON* is a measure of enforcement and management accountability; and *PROTECT* is a measure of minority shareholder protection. Source: 2000 CLSA Corporate Governance Scores. Range: 0-90.
Social Awareness	*SOCIAL*	Measure of social responsibility. Source: 2000 CLSA Corporate Governance Scores. Range: 0-100.
Transparency	*TRAN*	It is equal to *OWNERSHIP* + *DISCLOSURE* + *BOARD*, where *OWNERSHIP* is the number of items disclosed on ownership structure and investor relations; *DISCLOSURE*, on financial transparency and information disclosure; and *BOARD*, on board and management structure and processes. Source: 2000 S&P Transparency Rankings. Range: 0-91.
Scandal Index	*SCAND*	The number of articles in Lexis-Nexis containing negative information about a firm, such as assets expropriation, accounting misreporting, earnings manipulation, stock price manipulation, insider trading, share dilution, and undertaking illegal projects during the period from January 1, 1999 to December 31, 2001.
Firm-level Variables		
Valuation	*Q*	The 2000-to-2001 two-year average of Tobin's Q, which is the sum of total assets plus market value of common stock less book value of equity over total assets. The market value of equity is the number of common shares outstanding times year-end price. Source: Worldscope.
Investment opportunity	*INV_OPP*	1998-2000 two-year geometric average growth rate in net sales. Source: Worldscope.
Need for external financing	*EXT_FIN*	External financing need is defined as the difference between 1998-to-2000 two-year geometric average growth rate in total assets less 1998-to-2000 two-year geometric average of the maximum sustainable growth rate, where the latter is equal to *ROE* / (1 - *ROE*) and *ROE* is the return on equity (see Demirgüç-Kunt and Maksimovic (1998) for details). Source: Worldscope.
Cash flow rights	*OWN_CASH*	The share of cash flow rights held by the largest shareholder as defined in Claessens, Djankov, and Lang (2002) in 1996.
Ownership wedge	*WEDGE*	Dummy variable, equal to one if *CONTROL* - *OWNER_CASH* ≥ 10% and zero, otherwise. *CONTROL* is the share of voting rights held by the largest shareholder as defined in Claessens, Djankov, and Lang (2002) in 1996.
Size	*SIZE*	Logarithm of sales, 1999-to-2000 two-year averages. Source: Worldscope.
R&D expenditures	*R&D*	Research and development expenditures over sales, 1999-to-2000 two-year averages. Source: Worldscope.
Export intensity	*EXPORT*	Export over sales, 1999-2000 average. Export is the revenues generated from shipment of merchandise to another country for sale. Source: Worldscope.
ADR dummy	*ADR*	Dummy variable, equal to one if a firm's shares are listed on U.S. exchanges in either 1999 or 2000 and zero, otherwise. We exclude privately placed ADRs through Rule 144a and 'Over-the-Counter' stocks. Source: Bank of New York.
Consolidation dummy	*CONSOL*	Dummy variable, equal to one if Worldscope states that (i) "all subsidiaries are consolidated;" (ii) "domestic subsidiaries are consolidated, others on cost basis;" (iii) "consolidation for significant subsidiaries, others are on an equity basis;" (iv) "consolidation for significant subsidiaries, others are on cost basis;" (v) "consolidation, except for financial services subsidiaries, which are on equity basis;" (vi) "consolidation for significant subsidiaries, others on equity or proportional basis;" and 0, otherwise. When this information is missing in Worldscope, we rely on firms' annual reports. For specifications [S1] and [S2] we use information based on financial statements in 2000 and 2001, respectively. Source: Worldscope and firms' annual reports.
Industry dummies	*d*	Industries as defined in Campbell (1996): petroleum (SIC 13, 29), consumer durables (SIC 30, 36, 37, 50, 55, 57), basic industry (SIC 8, 10, 12, 14, 24, 26, 28, 33), food and tobacco (SIC 20, 21, 54), construction (SIC 15, 16, 17, 32), capital goods (SIC 34, 35, 38, 39), transportation (SIC 40, 41, 42, 44, 45, 47), textiles and trade (SIC 22, 23, 51, 53, 56, 59), services (SIC 7, 73, 75, 80, 82, 83, 87, 96), leisure (SIC 27, 58, 70, 79), unregulated utilities (SIC 48), regulated utilities (SIC 49), and financials (SIC 60, 61, 62, 63, 65, 67). Source: Worldscope and firms' annual reports.
Media Attention	*TOTAL*	Log of the total number of articles covering stories on a sample of firms.
Country-level Variables		
Legal origin	*ORIGIN*	Legal origin of the company law or commercial code of each country (English common law, French civil law, German civil law, and Scandinavian civil law). Source: La Porta et al. (1998a), Claessens, Djankov, and Nenova (1999), and the World Fact Book 2000 (the Central Intelligence Agency). The World Fact Book 2000 is available at http://www.cia.gov/cia/publications/factbook/index.html.
Legal protection for investors	*INVESTOR*	Anti-director index. An index is formed by adding 1 when (1) the country allows shareholders to mail their proxy vote to the firm, (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting, (3) cumulative voting or proportional representation of minorities mechanism is in place, (4) an oppressed minorities mechanism is in place, (5) the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than or equal to ten percent, or (6) shareholders have preemptive rights that can be waived only by a shareholders' vote. Range: 0-6. Source: La Porta et al. (1998a), Claessens, Djankov, and Nenova (1999), and Pistor, Raiser, and Gelfer (2000).
Rule of law	*ENFORCE*	Assessment of the law and order tradition of the country. Monthly average between 1999 and 2000. Range: 0-10. Source: International Country Risk Guide. Original data are transformed from 0-6 to 0-10 as in La Porta et al. (1998a).
Quality of legal regime	*LEGAL*	*INVESTOR* × *ENFORCE.*
Newspaper circulation	*NEWS*	The number of newspapers per capita. Source: Dyck and Zingales (2002). Original Source: UNESCO Statistical Yearbook 1996, as reported in the World Competitiveness Report. For Taiwan it is based on Editors and Publishers' Association Year Book and AC Nielsen; for Hong Kong, as reported in "Asian Top Media – Taiwan" at www.business.vu.edu.

Table VI
Correlation Coefficients between Main Variables

This table reports correlation coefficients between main variables. All correlation coefficients, except for *WEDGE*, *ADR*, and C*ONSOL* are simple correlation coefficients. Correlation coefficients for *WEDGE*, *ADR*, *CONSOL* are Spearman rank-order correlation coefficients. Numbers in parentheses are probability levels at which the hypothesis of zero correlation can be rejected. Coefficients significant at least at the ten percent level (based on two-tailed test) are in bold face. Firms that belong to financial industries (SIC 60, 61, 62, 63, 65, 67) are excluded from the sample. The sample size ranges from 127 to 456 firms depending on the pair of variables under consideration. Panel B correlations are based on CLSA sample. Refer to Table V for definitions of variables.

Panel A. Correlation Coefficients between CLSA Scores, S&P Ranking, Legal Regime, and Firm-level Variables

COMP	*PROTECT*	*SOCIAL*	*TRAN*	***Firm-level variables***
0.18	**0.18**	**0.24**	**0.08**	*Q*
(0.00)	(0.00)	(0.00)	(0.08)	
0.05	**0.13**	-0.06	0.07	*EXT_FIN*
(0.35)	(0.02)	(0.30)	(0.16)	
0.08	0.05	-0.04	**0.15**	*INV_OPP*
(0.13)	(0.39)	(0.43)	(0.00)	
-0.04	**-0.19**	0.01	**0.25**	*SIZE*
(0.46)	(0.00)	(0.88)	(0.00)	
-0.19	-0.14	0.03	-0.02	*OWN_CASH*
(0.00)	(0.11)	(0.76)	(0.79)	
0.04	-0.09	0.04	-0.06	*WEDGE*
(0.69)	(0.30)	(0.70)	(0.46)	
0.04	0.01	**0.13**	0.07	*R&D*
(0.40)	(0.86)	(0.02)	(0.16)	
-0.05	0.04	**0.10**	**-0.18**	*EXPORT*
(0.37)	(0.40)	(0.07)	(0.00)	
0.16	-0.06	0.05	0.02	*ADR*
(0.00)	(0.21)	(0.29)	(0.67)	
0.15	-0.004	**-0.20**	**0.18**	*CONSOL*
(0.00)	(0.99)	(0.00)	(0.00)	
				Legal Regime Variables
0.23	**0.28**	**0.15**	**0.17**	*INVESTOR*
(0.00)	(0.00)	(0.00)	(0.00)	
0.14	**0.23**	**-0.21**	**0.54**	*ENFORCE*
(0.01)	(0.00)	(0.00)	(0.00)	
0.27	**0.34**	-0.02	**0.41**	*LEGAL*
(0.00)	(0.00)	(0.65)	(0.00)	

Panel B. Correlation Coefficients between Legal Regime Variables and Firm-level Variables (based on CLSA sample)

Q	*EXT_FIN*	*INV_OPP*	*OWN_CASH*	*WEDGE*	*SIZE*	*R&D*	*EXPORT*	*ADR*	*CONSOL*	***Legal Regime variables***
0.24	**0.16**	-0.03	**-0.32**	0.13	**-0.17**	0.0002	0.02	-0.07	**-0.35**	*INVESTOR*
(0.00)	(0.00)	(0.64)	(0.00)	(0.14)	(0.00)	(0.96)	(0.64)	(0.17)	(0.00)	
0.07	0.02	-0.07	**-0.21**	-0.10	-0.04	0.07	-0.01	-0.08	0.06	*ENFORCE*
(0.18)	(0.77)	(0.20)	(0.02)	(0.25)	(0.49)	(0.18)	(0.82)	(0.14)	(0.24)	
0.23	**0.15**	**-0.09**	**-0.33**	0.004	**-0.13**	0.04	0.02	**-0.12**	**-0.21**	*LEGAL*
(0.00)	(0.01)	(0.08)	(0.00)	(0.97)	(0.01)	(0.42)	(0.66)	(0.02)	(0.00)	
										Firm-level variables
	0.32	**0.24**	**0.20**	-0.09	**-0.24**	**0.15**	**0.28**	-0.01	**-0.10**	*Q*
	(0.00)	(0.00)	(0.03)	(0.34)	(0.00)	(0.00)	(0.00)	(0.82)	(0.05)	
		-0.09	**0.31**	-0.06	-0.08	-0.02	**0.13**	-0.06	**-0.16**	*EXT_FIN*
		(0.10)	(0.00)	(0.53)	(0.16)	(0.74)	(0.02)	(0.24)	(0.00)	
			0.09	**-0.19**	-0.06	**0.11**	0.06	**0.11**	0.07	*INV_OPP*
			(0.34)	(0.04)	(0.30)	(0.04)	(0.22)	(0.04)	(0.23)	
				-0.25	-0.11	-0.06	0.05	-0.03	**-0.17**	*OWNER_CASH*
				(0.00)	(0.22)	(0.54)	(0.56)	(0.77)	(0.06)	
					-0.05	0.01	-0.09	**0.15**	0.02	*WEDGE*
					(0.58)	(0.87)	(0.31)	(0.08)	(0.83)	
						-0.02	**-0.11**	**0.17**	**0.16**	*SIZE*
						(0.75)	(0.04)	(0.00)	(0.00)	
							0.17	0.04	**-0.25**	*R&D*
							(0.00)	(0.47)	(0.00)	
								-0.02	**-0.32**	*EXPORT*
								(0.76)	(0.00)	
									0.04	*ADR*
									(0.47)	

Table VII
Country-Random Effects Regressions of CLSA Governance and S&P Transparency Scores on Investment Opportunities, External Financing Needs, Legal Regimes, and Control Variables

This table reports the results of country-random effects regressions:

$$CORP\_GOV_j^c = \alpha + \beta_1 * INV\_OPP_j^c + \beta_2 * EXT\_FIN_j^c + \gamma_1 * LEGAL^c + \gamma_2 * INV\_OPP_j^c * LEGAL^c + \gamma_3 * EXT\_FIN_j^c * LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + \varepsilon_j^c ,$$

where c indexes country; i indexes industry; and j indexes firm. α is a constant, $E[\varepsilon_j^c] = 0$, $E[\varepsilon_j^c \varepsilon_k^c] \neq 0 \ \forall \ j$ and k, and E is the expectation operator. *CORP_GOV* is one of CLSA corporate governance scores (*COMP, PROTECT,* or *SOCIAL*) or S&P transparency ranking (*TRAN*) in 2000; *d* are industry dummies (coefficients are not reported); *INV_OPP* (investment opportunities) is 1998-to-2000 two-year geometric average of growth rate in net sales (winsorized at the 1st and 99th percentile); *EXT_FIN* (external financing needs) is the difference between 1998-to-2000 two-year geometric average growth rate in total assets minus 1998-to-2000 two-year geometric average maximum sustainable growth rate, where the latter is equal to *ROE* / (1 – *ROE)*, and *ROE* (return on equity) is net income over book value of equity (winsorized at the 1st and 99th percentile); *LEGAL* is *INVESTOR* × *ENFORCE*, where *INVESTOR* is the anti-director index, and *ENFORCE* is rule of law; *INV_OPP *LEGAL* and *EXT_FIN *LEGAL* are interaction terms for investment opportunities and external financing needs with the quality of legal environment, respectively. *Z* are control variables: *SIZE* is log of sales, 1999-to-2000 two-year average; *R&D* is research and development expenditures scaled by sales, 1999-to-2000 average; *EXPORT* is export scaled by sales, 1999-to-2000 two-year average; *ADR* is a dummy variable, equal to one if a firm's shares are listed on U.S. stock exchanges in either 1999 or 2000, and zero, otherwise; and *CONSOL* is a dummy variable, equal to one if a firm consolidates its financial statements, and zero, otherwise. Numbers in parentheses are probability levels at which the null hypothesis of zero coefficient can be rejected. Coefficients significant at least at the ten percent level (based on two-tailed test) are in boldface. Firms that belong to financial industries (SIC 60, 61, 62, 63, 65, 67) are excluded from the sample. We drop firms from the sample if they do not have one of the following items in a given year of interest: total assets, sales, book value of equity, or net income. If all items, except for R&D expenditures and export, are available, we set those two equal to zero. Refer to Table V for definitions of variables.

Dependent Variables: CLSA Governance and S&P Transparency Scores	*COMP*	*PROTECT*	*TRAN*	*SOCIAL*
INV_OPP	**14.089**	**21.270**	**35.737**	6.421
	(0.00)	(0.02)	(0.00)	(0.44)
EXT_FIN	**4.363**	**16.223**	9.154	**-9.900**
	(0.08)	(0.01)	(0.14)	(0.09)
LEGAL	**0.490**	**1.013**	**0.352**	-0.091
	(0.00)	(0.00)	(0.00)	(0.49)
*INV_OPP *LEGAL*	**-0.525**	**-0.579**	**-1.125**	-0.466
	(0.00)	(0.06)	(0.00)	(0.16)
*EXT_FIN *LEGAL*	-0.083	**-0.443**	-0.302	0.258
	(0.24)	(0.04)	(0.19)	(0.25)
SIZE	**0.879**	**-3.325**	**1.235**	1.137
	(0.08)	(0.00)	(0.00)	(0.24)
R&D	19.874	-22.812	12.503	**139.853**
	(0.59)	(0.78)	(0.62)	(0.05)
EXPORT	**-6.240**	0.943	**-13.629**	9.981
	(0.09)	(0.91)	(0.00)	(0.17)
ADR	**6.668**	2.576	0.553	2.142
	(0.00)	(0.51)	(0.71)	(0.54)
CONSOL	**6.420**	4.333	**3.653**	**-12.992**
	(0.00)	(0.24)	(0.05)	(0.00)
Wald-test statistics of overall significance	**101.10**	**92.570**	**124.92**	**50.82**
	(0.00)	(0.00)	(0.00)	(0.00)
Regression R^2	0.240	0.224	0.231	0.137
Number of Companies	344	344	439	344

Table VIII
Country-Random Effects Regressions of CLSA Governance and S&P Transparency Scores on Ownership Concentration, Legal Regimes, and Control Variables

This table reports the results of country-random effects regressions:

$$CORP\_GOV_j^c = \alpha + \beta_1 * OWN\_CASH_j^c + \beta_2 * (OWN\_CASH_j^c)^2 + \beta_3 * WEDGE_j^c + \gamma_1 * LEGAL^c +$$
$$+ \gamma_2 * OWN\_CASH_j^c * LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + \varepsilon_j^c \quad ,$$

where *c* indexes country; *i* indexes industry; and *j* indexes firm. α is a constant, $E[\varepsilon_j^c] = 0$, $E[\varepsilon_j^c \varepsilon_k^c] \neq 0 \ \forall \ j$ and *k*, and E is the expectation operator. *CORP_GOV* is one of CLSA corporate governance scores (*COMP, PROTECT,* or *SOCIAL*) or S&P transparency ranking (*TRAN*) in 2000; *d* are industry dummies (coefficients are not reported); *OWN_CASH* is the share of cash flow rights held by the largest shareholder, defined as in Claessens, Djankov, and Lang (2002) in 1996; $(OWNER\_CASH)^2$ is a squared term for cash flow ownership; *WEDGE* is a dummy variable, equal to one if *CONTROL* - *OWN_CASH* ≥ 10% and zero, otherwise, where *CONTROL* is the share of voting rights held by the largest shareholder defined as in Claessens, Djankov, and Lang (2002) in 1996; *LEGAL* is *INVESTOR* × *ENFORCE*, where *INVESTOR* is the anti-director index, and *ENFORCE* is rule of law; *OWN_CASH*LEGAL* is the interaction term for the share of cash flow rights held by the largest shareholder with the quality of legal environment. *Z* are control variables: *SIZE* is log of sales, 1999-to-2000 two-year average; *R&D* is research and development expenditures scaled by sales, 1999-to-2000 two-year average; *EXPORT* is export scaled by sales, 1999-to-2000 two-year average; *ADR* is a dummy variable, equal to one if a firm's shares are listed on U.S. stock exchanges in either 1999 or 2000, and zero, otherwise; and *CONSOL* is a dummy variable, equal to one if a firm consolidates its financial statements, and zero, otherwise. Numbers in parentheses are probability levels at which the null hypothesis of zero coefficient can be rejected. Coefficients significant at least at the ten percent level (based on two-tailed test) are in boldface. Panel B excludes firms that belong to financial industries (SIC 60, 61, 62, 63, 65, 67). We drop firms from the sample if they do not have sales or ownership information in a given year of interest. We also exclude firms with control rights less than five percent. If all items, except for R&D expenditures and export, are available, we set those two equal to zero. Refer to Table V for definitions of variables.

	Panel A: Financial firms are included				*Panel B: Financial firms are excluded*			
Dependent Variable	*COMP*	*PROTECT*	*TRAN*	*SOCIAL*	*COMP*	*PROTECT*	*TRAN*	*SOCIAL*
OWN_CASH	**0.575**	**1.691**	0.192	-0.595	0.481	**1.477**	0.190	-1.071
	(0.04)	(0.01)	(0.15)	(0.26)	(0.11)	(0.03)	(0.21)	(0.11)
$(OWN\_CASH)^2$	**-0.005**	**-0.015**	-0.001	0.005	-0.004	**-0.014**	-0.001	**0.009**
	(0.05)	(0.01)	(0.12)	(0.30)	(0.13)	(0.02)	(0.17)	(0.10)
WEDGE	-0.829	**-8.640**	-0.803	1.371	0.141	-7.066	0.747	-0.871
	(0.70)	(0.08)	(0.69)	(0.74)	(0.95)	(0.21)	(0.76)	(0.87)
LEGAL	**0.864**	**1.447**	**0.599**	-0.220	**0.816**	**1.491**	**0.588**	-0.350
	(0.00)	(0.00)	(0.00)	(0.53)	(0.00)	(0.00)	(0.00)	(0.43)
*OWN_CASH *LEGAL*	-0.010	**-0.030**	-0.005	0.017	-0.006	-0.026	-0.004	0.022
	(0.18)	(0.08)	(0.25)	(0.24)	(0.49)	(0.17)	(0.38)	(0.23)
SIZE	1.085	-1.973	0.411	1.804	-0.857	**-6.847**	0.261	0.585
	(0.12)	(0.22)	(0.42)	(0.18)	(0.33)	(0.00)	(0.66)	(0.77)
R&D	-92.774	**-546.453**	22.817	-71.505	-120.102	**-602.535**	29.295	-63.469
	(0.49)	(0.08)	(0.52)	(0.78)	(0.36)	(0.04)	(0.40)	(0.83)
EXPORT	-0.388	13.545	**-24.857**	6.594	0.734	17.700	**-25.405**	7.756
	(0.95)	(0.38)	(0.00)	(0.61)	(0.91)	(0.23)	(0.00)	(0.60)
ADR	4.515	-8.561	-1.962	11.907	7.045	-6.147	-3.972	15.792
	(0.28)	(0.38)	(0.45)	(0.14)	(0.12)	(0.55)	(0.18)	(0.12)
CONSOL	2.442	4.567	0.238	-8.333	-1.296	-4.429	3.112	-2.656
	(0.54)	(0.62)	(0.95)	(0.28)	(0.77)	(0.66)	(0.49)	(0.79)
Wald-test statistics of joint significance	**3307.560**	**1049.20**	**3670.91**	**1601.170**	**1001.140**	**860.380**	**1000.160**	**992.150**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Regression R^2	0.442	0.326	0.344	0.118	0.500	0.461	0.391	0.127
Number of Companies	173	173	240	173	124	124	177	124

Table IX
Country-Random Effects Regressions of Firm Valuation on CLSA Governance and S&P Transparency Scores, Legal Regimes, and Control Variables

This table reports the results of country-random effects regressions:

$$Valuation_j^c = \alpha + \beta_1 * CORP\_GOV_j^c + \gamma_1 * LEGAL^c + \gamma_2 * CORP\_GOV_j^c * LEGAL^c + \sum_{k=1}^{K} \delta_k * Z_{k,j}^c + \sum_{i=1}^{I-1} d_i + \varepsilon_j^c ,$$

where *c* indexes country; *i* indexes industry; and *j* indexes firm. α is a constant, $E[\varepsilon_j^c] = 0$, $E[\varepsilon_j^c \varepsilon_k^c] \neq 0 \ \forall \ j$ and *k*, and E is the expectation operator. *Valuation* is 2000-to-2001 two-year average of Tobin's Q defined as total assets plus market value of equity less book value of equity over total assets, where the market value of equity is the number of common shares outstanding times year-end share price (winsorized at the 1st and 99th percentile); *CORP_GOV* is one of CLSA corporate governance scores (*COMP, PROTECT,* or *SOCIAL*) or S&P transparency ranking (*TRAN*) in 2000; *d* are industry dummies (coefficients are not reported); *LEGAL* is *INVESTOR* × *ENFORCE*, where *INVESTOR* is the anti-director index, and *ENFORCE* is rule of law; *CORP_GOV* * *LEGAL* is the interaction term for *CORP_GOV* with the quality of legal environment. *Z* are control variables: *INV_OPP* (investment opportunities) is 1998-to-2000 two-year geometric average of growth rate in net sales (winsorized at the 1st and 99th percentile); *SIZE* is log of sales, 1999-to-2000 two-year average; *R&D* is research and development expenditures scaled by sales, 1999-to-2000 two-year average; *EXPORT* is export scaled by sales, 1999-to-2000 two-year average; *ADR* is a dummy variable, equal to one if a firm's shares are listed on U.S. stock exchanges in either 1999 or 2000, and zero, otherwise; and *CONSOL* is a dummy variable, equal to one if a firm consolidates its financial statements, and zero, otherwise. Numbers in parentheses are probability levels at which the null hypothesis of zero coefficient can be rejected. Coefficients significant at least at the ten percent level (based on two-tailed test) are in boldface. Firms that belong to financial industries (SIC 60, 61, 62, 63, 65, 67) are excluded from the sample. In Panel B we exclude the governance and disclosure scores and the interaction terms for governance and disclosure scores with legal regime. We drop firms from the sample if they do not have one of the following items in a given year of interest: sales, total assets, book value of equity, number of common shares outstanding, or year-end share price. If all items, except for R&D expenditures and export are available, we set those two equal to zero. Refer to Table V for definitions of variables. Coefficients on *CORP_GOV* and *CORP_GOV* * *LEGAL* are multiplied by 100.

	Panel A				*Panel B*
Dependent variable	*Tobin's Q*				
COMPOSITE	**1.950**	-	-	-	-
	(0.06)				
PROTECT	-	**1.711**	-	-	-
		(0.05)			
TRANS	-	-	**0.905**	-	-
			(0.04)		
SOCIAL	-	-	-	0.436	-
				(0.44)	
LEGAL	0.010	0.005	0.016	0.001	**0.017**
	(0.67)	(0.75)	(0.20)	(0.99)	(0.00)
*CORP_GOV *LEGAL*	**-0.026**	-0.012	**-0.006**	0.030	**-**
	(0.10)	(0.12)	(0.00)	(0.19)	
INV_OPP	**0.820**	**0.840**	**0.843**	**0.888**	**0.854**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
SIZE	**-0.104**	-0.074	**-0.113**	**-0.098**	**-0.087**
	(0.02)	(0.11)	(0.00)	(0.03)	(0.06)
R&D	**5.711**	**6.371**	**5.075**	4.292	**6.147**
	(0.09)	(0.06)	(0.01)	(0.20)	(0.07)
EXPORT	**1.795**	**1.629**	**1.226**	**1.479**	**1.625**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ADR	-0.137	-0.081	-0.037	-0.044	-0.069
	(0.41)	(0.62)	(0.76)	(0.79)	(0.67)
CONSOL	**-0.513**	**-0.422**	0.104	-0.228	**-0.404**
	(0.00)	(0.00)	(0.47)	(0.15)	(0.01)
Wald-test statistics of joint significance	**1287.280**	**1248.080**	**1500.73**	**1330.270**	**1239.530**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Regression R^2	0.344	0.328	0.282	0.361	0.321
Number of Companies	344	344	438	344	344

Table X
Three-stage Least Squares Regression Estimation of the Relation between Valuation and CLSA Governance and S&P Transparency Scores

This table reports the results of three-stage least squares estimation of the following system of equations:

$$\begin{cases} CORP\_GOV_j^c = \alpha_1 + \beta_1 * Valuation_j^c + \gamma_{1,1} * INV\_OPP_j^c + \gamma_{1,2} * EXT\_FIN_j^c + \gamma_{1,3} * LEGAL^c + \gamma_{1,4} * SIZE_j^c + \gamma_{1,5} * R\&D_j^c + \gamma_{1,6} * EXPORT_j^c + \gamma_{1,7} * ADR_j^c + \gamma_{1,8} * CONSOL_j^c + \gamma_{1,9} * ALPHA_j^c + \gamma_{1,10} * BETA_j^c + \varepsilon_{1j} \\ Valuation_j^c = \alpha_1 + \beta_2 * CORP\_GOV_j^c + \gamma_{2,1} * INV\_OPP_j^c + \gamma_{2,3} * LEGAL^c + \gamma_{2,5} * R\&D_j^c + \gamma_{2,6} * EXPORT_j^c + \gamma_{2,7} * ADR_j^c + \gamma_{2,8} * CONSOL_j^c + \sum_{i=1}^{I-1} d_i + \varepsilon_{2j} \end{cases}$$

where *c* indexes country; *i* indexes industry; and *j* indexes firm. *Valuation* is 2000-to-2001 two-year average of Tobin's Q defined as total assets plus market value of equity less book value of equity over total assets, where the market value of equity is the number of common shares outstanding times year-end share price (winsorized at the 1st and 99th percentile); *CORP_GOV* is one of CLSA corporate governance scores (*COMP* or *PROTECT*), or S&P transparency ranking (*TRAN*) in 2000; *d* are industry dummies (coefficients are not reported); *LEGAL* is *INVESTOR* × *ENFORCE*, where *INVESTOR* is the anti-director index, and *ENFORCE* is rule of law; *INV_OPP* (investment opportunities) is 1998-to-2000 two-year geometric average of growth rate in net sales (winsorized at the 1st and 99th percentile); *EXT_FIN* (external financing needs) is the difference between 1998-to-2000 two-year geometric average growth rate in total assets minus 1998-to-2000 two-year geometric average maximum sustainable growth rate, where the latter is equal to *ROE* / (1 – *ROE)*, and *ROE* (return on equity) is net income over book value of equity (winsorized at the 1st and 99th percentile); *SIZE* is log of sales, 1999-to-2000 two-year average; *R&D* is research and development expenditures scaled by sales, 1999-to-2000 two-year average; *EXPORT* is export scaled by sales, 1999-to-2000 two-year average; *ADR* is a dummy variable, equal to one if a firm's shares are listed on U.S. stock exchanges in either 1999 or 2000, and zero, otherwise; and *CONSOL* is a dummy variable, equal to one if a firm consolidates its financial statements, and zero, otherwise. *ALPHA* and *BETA* values are obtained from Worldscope, which are computed using between 23 and 35 consecutive month end percentage price changes relative to a local market index during years from 1999 to 2001. Numbers in parentheses are probability levels at which the null hypothesis of zero coefficient can be rejected. Coefficients significant at least at the ten percent level (based on two-tailed test) are in boldface. Firms that belong to financial industries (SIC 60, 61, 62, 63, 65, 67) are excluded from the sample. We drop firms from the sample if they do not have one of the following items in a given year of interest: sales, total assets, book value of equity, net income, number of common shares outstanding, or year-end share price. If all items, except for R&D expenditures and export, are available, we set those two equal to zero. Regression R^2 is not reported because it has no statistical meaning in case of three-stage least squares estimation. Refer to Table V for definitions of variables. The Coefficient on *CORP_GOV* is multiplied with 100

.

	Panel A *CLSA Sample, COMP*		*Panel B* *CLSA Sample, PROTECT*		*Panel C* *S&P Sample, TRAN*	
	Governance Equation: Dep. Variable, COMP	*Valuation Equation: Dep. Variable, Q*	*Governance Equation: Dep. Variable, PROTECT*	*Valuation Equation: Dep. Variable, Q*	*Governance Equation: Dep. Variable, TRAN*	*Valuation Equation: Dep. Variable, Q*
Q	0.878	-	2.932	-	**-4.662**	-
	(0.59)		(0.42)		(0.03)	
CORP_GOV	-	**4.680**	-	**3.198**	-	**0.566**
		(0.00)		(0.00)		(0.04)
INV_OPP	**6.323**	**1.030**	1.859	**0.982**	**12.719**	0.105
	(0.05)	(0.00)	(0.15)	(0.00)	(0.01)	(0.27)
EXT_FIN	**2.098**	-	**9.208**	-	**11.272**	-
	(0.05)		(0.01)		(0.00)	
LEGAL	**0.339**	-0.002	**0.806**	-0.134	**0.307**	0.072
	(0.00)	(0.85)	(0.00)	(0.20)	(0.00)	(0.00)
SIZE	**-0.815**	-	**-2.475**	-	**1.010**	-
	(0.06)		(0.01)		(0.01)	
R&D	-8.045	4.273	-31.268	4.797	-26.396	4.051
	(0.81)	(0.21)	(0.68)	(0.23)	(0.31)	(0.20)
EXPORT	-4.356	**1.753**	-1.449	**1.186**	**-18.898**	-0.345
	(0.29)	(0.00)	(0.88)	(0.00)	(0.00)	(0.68)
ADR	**6.519**	**-0.318**	-3.252	0.099	-1.052	-0.240
	(0.00)	(0.09)	(0.38)	(0.64)	(0.49)	(0.24)
CONSOL	**6.511**	**-0.883**	2.164	**-0.580**	1.655	0.279
	(0.00)	(0.00)	(0.58)	(0.00)	(0.42)	(0.39)
ALPHA	0.251	-	0.442	-	0.480	-
	(0.38)		(0.40)		(0.18)	
BETA	**-5.450**	-	**-8.508**	-	-1.186	-
	(0.00)		(0.00)		(0.26)	
Industry dummies	no	yes	no	yes	no	yes
χ^2 *statistics*	**103.230**	**173.904**	**885.140**	**112.046**	**138.454**	**59.746**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Number of firms	302		302		396	

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