

Differences in Governance Practices between U.S. and Foreign Firms: Measurement, Causes, and Consequences

Reena Aggarwal

Georgetown University

Isil Erel

Ohio State University

René Stulz

Ohio State University, NBER, and ECGI

Rohan Williamson

Georgetown University

We construct a firm-level governance index that increases with minority shareholder protection. Compared with U.S. matching firms, only 12.68% of foreign firms have a higher index. The value of foreign firms falls as their index decreases relative to the index of matching U.S. firms. Our results suggest that lower country-level investor protection and other country characteristics make it suboptimal for foreign firms to invest as much in governance as U.S. firms do. Overall, we find that minority shareholders benefit from governance improvements and do so partly at the expense of controlling shareholders. (*JEL* G32, 34, 38)

Using the well-known definition from Shleifer and Vishny (1997), governance consists of the mechanisms that ensure minority shareholders receive an appropriate return on their investment. Governance depends on both country-level as well as firm-level mechanisms. The country-level governance mechanisms

We are grateful for comments from Marcus Caylor, Stephen Deane, Art Durnev, Mara Faccio, Allen Ferrell, Wayne Guay, David Hirshleifer, Jon Karpoff, Christo Karuna, Florencio Lopez-de-Silanes, Pedro Matos, Antoinette Schoar, Jérôme Taillard, Mike Weisbach, Mark Weinstein, Marc Zenner, and an anonymous referee. We thank seminar participants at Case Western Reserve University, McMaster University, MIT, Northeastern University, Queen's University, the University of California at Irvine, the University of Iowa, the University of Texas at San Antonio, the University of South Florida, and the University of Southern California, as well as participants at the NYSE/World Bank/University of Virginia Conference on Emerging Markets, the Wharton Conference on Corporate Governance and Globalization, the 2007 Western Finance Association Meetings, and the NBER/RFS Conference on Corporate Governance. We thank ISS for providing the data used in this study and the Q-Group for a research grant. Javier Ayala provided excellent research assistance. Aggarwal and Williamson gratefully acknowledge support from the Stallkamp and Holowesko Faculty Fellowships, respectively. Aggarwal started this research while she was a visiting professor at MIT's Sloan School of Management. Send correspondence to Isil Erel, Fisher College of Business, Ohio State University, 832 Fisher Hall, 2100 Neil Avenue, Columbus, OH 43210; telephone: (614) 292-5174; fax: (614) 292-2418; E-mail: erel_1@fisher.osu.edu.

include a country's laws, its culture and norms, and the institutions that enforce the laws. Firm-level or internal governance mechanisms are those that operate within the firm. Firm-level governance mechanisms that increase the power of minority shareholders to receive a return on their investment are costly, so that the adoption of such mechanisms by a firm is an investment, and the payoffs from that investment differ across countries and across firms (see, e.g., Doidge, Karolyi, and Stulz 2007; Fulghieri and Suominen 2006; John and Kedia 2006).

The United States is recognized to have extremely high financial and economic development, to have strong investor protection, and to protect property rights well. Consequently, we would expect the internal governance of firms in the United States to come as close as possible to what the optimal internal governance of a firm would be in a foreign country if it were not constrained by weaker institutions and lower development than in the United States. The internal governance of firms in the United States therefore provides a benchmark that can be used to evaluate the impact of different institutions and development from the United States on governance choices and, through these choices, on firm value.

On theoretical grounds, it is not clear whether the characteristics of the United States make firm-level investment in governance mechanisms that increase the power of minority shareholders more or less advantageous for U.S. firms relative to firms from countries that do not have the same high level of development and investor protection. One possibility is that foreign firms would invest less in firm-level governance if they were in the United States because firm-level governance and country-level investor protection are substitutes. An alternative possibility is that investment in firm-level governance is less productive in countries with poor economic development and weak investor protection than it is in the United States, implying that firm-level governance and investor protection are complements. Though there is a considerable literature that compares the quality of institutions across countries, there is no systematic comparison of firm-level investment in governance between the United States and foreign countries. Furthermore, there is no investigation of whether differences in firm-level governance between foreign firms and comparable U.S. firms have implications for the valuation of foreign firms.

We find strong evidence that foreign firms invest less in internal governance mechanisms that increase the power of minority shareholders than comparable U.S. firms do. In other words, investment in firm-level governance is higher when a country becomes more economically and financially developed and better protects investor rights. Further, to the extent that institutional and development weaknesses reduce a foreign firm's investment in corporate governance compared to a U.S. firm, we would expect the value of the foreign firm to be lower. As expected, we find that the value of foreign firms, measured by Tobin's q , is negatively related to the magnitude of their governance investment shortfall relative to U.S. firms.

To conduct our investigation, we need information about firm-level corporate governance attributes that increase the power of minority shareholders for a large number of firms across a large number of countries. Additionally, we would like individual governance attributes to be assessed similarly across all these firms. Two widely known governance rankings include both U.S. and foreign firms. One of these rankings, the Standard and Poor's ranking, focuses on disclosure. The other one, produced by Institutional Shareholder Services (ISS), uses a comprehensive inventory of governance attributes that increase the power of minority shareholders.¹ We use the ISS governance attributes in this article. By doing so, we can analyze forty-four common governance attributes for 2234 non-U.S. firms and 5296 U.S. firms covering twenty-three developed countries. To compare firm-level governance between the United States and foreign countries, we need to create our own index making sure that the governance attributes included are relevant for both U.S. firms and foreign firms. We call it the *GOV* index. One can reasonably disagree both with the governance attributes ISS focuses on and with the index we compute. It is obviously true, as Jack and Suzy Welch argue, that "Good governance comes down to a lot more than a point system."² However, if the index were to convey no information, we would simply find that the index we use is not related to firm value.

The *GOV* index satisfies our requirement of providing a firm-level governance measure that is comparable across countries. To evaluate the governance a foreign firm would have if it were in the United States, we use a propensity score matching method in order to match each foreign firm with a comparable U.S. firm. We then show that foreign firms generally have a lower *GOV* index, so that they give less power to minority shareholders than if they were U.S. firms. We define the governance gap to be the difference between the governance index of a foreign firm and the governance index of a comparable U.S. firm. A firm with a positive governance gap has a higher value of the *GOV* index than its matching U.S. firm. Only 12.7% of foreign firms have a positive governance gap. Strikingly, 86.1% of these firms come from Canada and the United Kingdom, so that firms from countries with similar investor protection as in the United States are the ones that are most likely to invest more in governance than comparable U.S. firms. Such a result is inconsistent with the hypothesis that investor protection and internal governance mechanisms are substitutes.

Having compared the governance of foreign and U.S. firms, we turn to the question of whether the governance gap helps explain a firm's valuation. It could be that the governance differences are unrelated to firm value because the governance attributes we focus on are not value relevant for foreign countries.

¹ ISS was acquired by RiskMetrics Group in 2007.

² "A Dangerous Division of Labor," by Jack and Suzy Welch, *Business Week*, 6 November 2006. For an academic version of this argument, see Arcot and Bruno (2006).

Alternatively, the governance attributes we use might not capture the dimensions of governance that are important for shareholder wealth maximization. Our results are inconsistent with either of these hypotheses. We find that the value of foreign firms, measured by Tobin's q , increases as their *GOV* index shortfall relative to the index of matching U.S. firms falls.

A firm's governance is chosen by those who control the firm to maximize their welfare. Most foreign firms have a controlling shareholder (La Porta, Lopez-de-Silanes, and Shleifer 1999); therefore, we focus on the decisions of controlling shareholders for simplicity. Since investments in corporate governance reduce the controlling shareholder's ability to extract private benefits from the firm, investments in corporate governance are more costly for the controlling shareholder than they are for minority shareholders. The controlling shareholder's choice of governance mechanisms depends on firm and country characteristics. He will find investments in governance more valuable if he expects the firm to need external funds because investments in governance reduce the cost of external capital. It follows that the controlling shareholder's choice of an optimal governance mechanism raises an endogeneity issue. High q firms have greater investment opportunities and hence are more likely to raise external funds. As a result, high q firms might invest more in governance. Therefore, it is possible that a higher q would make the firm invest more in governance instead of investment in governance resulting in a higher q . Following prior literature, we control for growth opportunities, but there could still be a relation between q and governance because of other growth opportunities that we may fail to control for.

To address this issue, we use two distinct approaches. First, we use an instrumental variable approach. With this approach, the negative relation between a foreign firm's governance index shortfall and its q still holds. Second, we devise an experiment inspired by Rajan and Zingales (1998), who use the amount of external capital raised by firms in the United States as a benchmark for optimal external funding with good financial development. If firm-level governance is more costly for foreign firms than for U.S. firms, we expect that the foreign firms comparable to the U.S. firms that benefit the most from investing in internal governance will find it optimal to invest less in governance than matching U.S. firms do and will suffer a loss of value as a result. We can therefore use regression analysis to investigate whether a foreign firm's q is negatively related to the governance index value it would have in the United States. We find that this is the case. Such a coefficient is not subject to an endogeneity bias because we are measuring the governance of a U.S. firm and the valuation of a foreign firm.

In addition to investigating the value relevance of differences in the aggregate governance index between foreign firms and comparable U.S. firms, we also consider the value relevance of specific governance provisions. We focus on provisions that have attracted considerable attention in the literature and among policy makers. We find that firms that have an independent board, auditors that

are ratified annually, and an audit committee composed solely of outsiders have a higher value when their U.S. matching firm has these governance attributes. In contrast, neither board size nor separation of the chairman and CEO functions is value relevant.

Our article contributes to a growing literature on the determinants and value relevance of firm-level governance attributes. This literature has been reviewed extensively (see, for instance, Becht, Bolton, and Röell 2003; Denis and McConnell 2003). A subset of this literature uses corporate governance indices as we do. The authors have shown that in the United States, firm value is related to indices of firm-level governance attributes (e.g., Gompers, Ishii, and Metrick 2003; Bebchuk and Cohen 2005; Bebchuk, Cohen, and Ferrell forthcoming). Most important for our perspective, using the U.S. data, Brown and Caylor (2006) show that the ISS index is value relevant, and Aggarwal and Williamson (2006) demonstrate that changes in the index are associated with changes in firm value. In an international setting, Durnev and Kim (2005) use the Credit Lyonnais Securities Asia (CLSA) corporate governance ratings and demonstrate that they are value relevant. The CLSA ratings cover twenty-four emerging countries and newly emerging countries for 2000 and provide ratings for 494 companies. Francis, Khurana, and Pereira (2005) show that disclosure-related governance attributes measured by the Standard and Poor's rankings affect firms' cost of capital across the world. Doidge, Karolyi, and Stulz (2007) show that country characteristics are important determinants of firm-level governance indices for firms outside the United States.

Two contemporaneous papers examine the relation between firm-level governance provisions and firm value across countries using ISS data. Bruno and Claessens (2007) find that companies with strong corporate governance rely heavily on external finance. Chhaochharia and Laeven (2007) show that firms that adopt corporate governance provisions beyond those that are mandated by the country or corporate norms gain a positive valuation impact for their efforts. Though the results of many of these papers are complementary to the results of this article, no paper compares the internal governance of foreign firms to the internal governance of comparable U.S. firms and derives the implications of that comparison for the value of these foreign firms.

The article proceeds as follows. In Section 2, we derive the hypotheses to be tested. In Section 3, we describe the governance data used and the sample of firms. In Section 4, we show that, on average, firms in foreign countries invest less in governance than firms in the United States and investigate the determinants of this governance index shortfall. We report in Section 5 that firm value is positively related to the governance gap after controlling for firm characteristics and that the governance gap effect is not subsumed by other firm-level and country-level governance measures. In Section 6, we investigate how firms differ across the world in relation to specific governance attributes and show that these attributes are related to firm value. We report on the robustness of our results in Section 7 and conclude in Section 8.

1. Firm Value, Country Characteristics, and Firm-Level Governance

In this section, we first discuss the determinants of firm-level governance. We then draw implications for how firm-level governance differs across countries and how firm value is related to firm-level governance.

1.1 The determinants of firm-level governance

In this article, we follow a growing literature that uses a simple cardinal measure of internal governance, the number of governance attributes selected by a firm among a specified set of governance attributes that increase the rights of minority shareholders. For most firms, the controlling shareholder chooses the firm's governance attributes to maximize his welfare rather than the welfare of the firm's minority shareholders. The controlling shareholder extracts private benefits from the firm. The extent to which he can extract these benefits depends on the institutions in the firm's country as well as on the firm's choice of corporate governance attributes. By choosing stronger corporate governance attributes for the firm, the controlling shareholder reduces his ability to extract private benefits from the firm and therefore incurs private costs.

The costs and benefits for controlling shareholders resulting from the adoption of governance attributes depend both on firm and on country characteristics. In particular, investing more in governance will be more valuable for firms that require more external funding, since better governance makes it easier for the firm to access external funding on better conditions. In contrast, investing more in governance will be less valuable for firms that have more assets that could be used for the benefit of controlling shareholders at the expense of minority shareholders, since in that case better governance would lead to a wealth transfer from controlling shareholder to the minority shareholders. Therefore, we expect firms with better growth opportunities and fewer fixed assets to invest more in governance. For controlling shareholders, the benefits of investing in firm-level governance decrease and the costs increase if a country's institutions are weaker and its economic and financial development is lower. With better financial development, the transaction costs of accessing external finance are cheaper. Also, with good institutions, governance measures are more likely to be credible and commitments by the firm are more likely to be enforceable by minority shareholders. Finally, with poor economic development, it is more expensive to find individuals with the skills and training required to perform functions (such as high-quality auditing) that are essential for good internal governance.

Better governance has a positive impact on the present value of the cash flows that accrue to minority shareholders for several reasons. First, since better governance reduces the controlling shareholder's private benefits, the minority shareholders receive a larger fraction of the cash flows generated by the firm. Second, better governance increases the proceeds from issuing equity, so that equity can be used to finance more investments. Third, to the extent that

the discretion of the controlling shareholder to take actions that divert corporate assets is more limited as the firm adopts better corporate governance, the cost of debt may also fall for the firm. Finally, it is more likely that firm decisions will be made to maximize shareholder wealth.

Though adopting better governance has benefits for the minority shareholders, the adoption of governance attributes imposes costs on them as well. First, these costs include out-of-pocket costs resulting from the adoption of governance attributes. For instance, it is costly to change a firm's charter, to use external auditors, or to have outside directors. Second, a firm may have to incur expenses to ensure that its adoption of governance attributes is credible. Third, the adoption of governance attributes may limit the flexibility of management.

We denote by $B_{ij}(GOV_{ij}, H_j, F_i)$ the net benefit of the adoption of governance attributes for shareholders reflected in the firm's share price, where GOV_{ij} measures the number of governance attributes adopted by the firm, H_j is a vector of country characteristics, and F_i is a vector of firm characteristics. We assume that this net benefit is an increasing concave function of GOV_{ij} , that it falls as the cost of adopting governance attributes increases, and that it depends on firm and country characteristics. The adoption of more attributes reduces the value of the private benefits extracted by the controlling shareholder of the firm. We denote the controlling shareholder's private cost of investing in governance attributes by $PC_{ij}(GOV_{ij}, H_j, F_i)$. For simplicity, we assume that the only benefit the controlling shareholder receives from the adoption of more governance attributes is through the value of his stake in the firm. We assume that $PC_{ij}(GOV_{ij}, H_j, F_i)$ is an increasing convex function of GOV_{ij} , so that the private cost of adopting governance attributes for the controlling shareholder is an increasing convex function of the number of attributes adopted.

The controlling shareholder maximizes his own welfare and chooses the firm's investment in governance—that is, the firm's choice of GOV_{ij} —accordingly. With our notation, the market value of the firm's shares is higher because of the adoption of governance attributes. If the controlling shareholder holds a fraction α_{ij} of the firm's shares, his net benefit from investing in governance, SC_{ij} , is the contribution of the firm's investment in internal governance to the value of his shares in the firm, $\alpha_{ij}B_{ij}(GOV_{ij}, H_j, F_i)$, minus his private cost from the firm's investment in internal governance, $PC_{ij}(GOV_{ij}, H_j, F_i)$. The controlling shareholder's gain from the firm's investment in governance is less than what it would be if he were a minority shareholder with the same stake because he bears private costs from that investment. The controlling shareholder chooses GOV_{ij} to maximize SC_{ij} . With our assumptions, SC_{ij} is a concave function of GOV_{ij} , so that there is a unique value of the governance index that maximizes the contribution of internal governance to firm value. The optimal value of GOV_{ij} solves the following equation:

$$\alpha_{ij} \frac{B_{ij}(GOV_{ij}, H_j, F_{ij})}{GOV_{ij}} = \frac{PC_{ij}(GOV_{ij}, H_j, F_{ij})}{GOV_{ij}}. \quad (1)$$

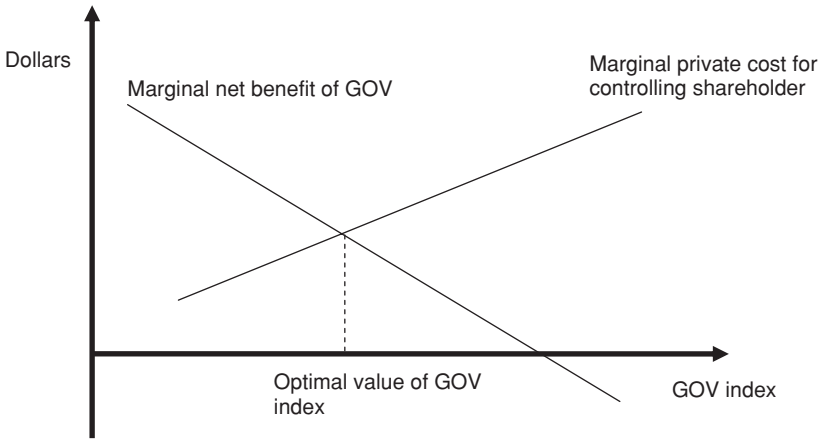


Figure 1
Determination of optimal value of GOV index

The “Marginal net benefit of GOV curve” shows the marginal net change in the value of the shares held by the controlling shareholder due to an increase in GOV. Though the controlling shareholder sees the value of his shares increase when GOV is increased, an increase in GOV reduces the private benefits enjoyed by the controlling shareholder. The “Marginal private cost of GOV” represents the marginal cost in private benefits lost from increasing GOV.

Figure 1 shows the intersection of the marginal benefit curve (the left-hand side of the equation) and marginal private cost curve (the right-hand side of the equation), which determines the controlling shareholder’s choice GOV_{ij} . It necessarily follows from Figure 1 that the controlling shareholder’s private cost of adopting governance attributes reduces the firm’s investment in governance.

1.2 Cross-country implications

We now consider the cross-country implications of our analysis of the determinants of internal governance for both the level of internal governance and also the relation between firm value and internal governance.

It is reasonable to view the United States as a country in which private benefits of control are smaller than in most countries. If lower private benefits of control simply shift the marginal cost function of governance attributes to the right in Figure 1, then everything else being equal, our analysis predicts that GOV is higher in countries with lower private benefits of control. To the extent that the private benefits of control are low in the United States, we would expect U.S. firms to have a higher value for GOV than comparable firms elsewhere. However, the minority shareholders’ net benefit from investment in governance could be lower or higher in the United States than elsewhere. Presumably, the fact that private benefits are low in the United States reduces the gain for shareholders from firm-level investments in governance since governance investments reduce private benefits less than they would in countries in which private benefits are high, but at the same time, the fact that the United States

is highly developed with good institutions may also mean that investments in governance are more productive.

In Figure 1, an improvement in investor protection has two effects. First, it shifts the marginal private cost curve of the controlling shareholder to the right because his ability to extract private benefits from the firm is lowered. This effect necessarily increases the firm's investment in internal governance. Second, an improvement in investor protection shifts the net marginal benefit curve to the right if internal governance and investor protection are complements and to the left if they are substitutes. Consider first the case where internal governance and investor protection are complements. La Porta et al. (2000) examine one aspect of internal governance—namely, dividend policy—and find that payout policy is more responsive to the interests of shareholders in countries with better institutions, so that there is a complementarity between payout policy and investor protection. If there is complementarity between internal governance and investor protection, it follows that an improvement in investor protection is associated with an increase in *GOV* as well as an increase in the contribution to firm value of internal governance. Hence, in this case, we expect that firm value is positively related to *GOV*. We consider next the case where internal governance and investor protection are substitutes. In this case, the net benefit curve moves to the left as investor protection increases, so that *GOV* may increase or fall as investor protection increases, but the contribution to firm value of internal governance necessarily falls. As a result, if investor protection and internal governance are substitutes, firm value and *GOV* may be negatively related in the cross-section. Such an outcome would occur if *GOV* increases as investor protection improves but the contribution of internal governance to firm value decreases as internal governance and investor protection are substitutes.

Following Doidge, Karolyi, and Stulz (2007), we would expect that greater financial and economic development increases the benefits of investing in internal governance because it reduces the transaction costs of external finance.³ Additionally, it decreases the costs of investing in internal governance by reducing the costs of the inputs to investment in internal governance. In Figure 1, economic and financial development shift the net benefit curve to the right, increase *GOV*, and increase the contribution of internal governance to firm value.

Countries partly dictate firms' internal governance through laws and regulations. First, to the extent that firms can undo the impact of regulation on their internal governance by investing less in internal governance to offset governance attributes imposed by the state, regulation is not an issue for this

³ The referee points out that a different definition of financial development would lead to a different result. Namely, if low financial development means that a small pool of external capital is available for firms in a country, it could be the case that firms would compete for funds by improving their governance, so that low financial development would be accompanied by good governance. However, we believe that in an open economy, intermediation costs are more important than limitations on the pool of capital.

study. Second, it could be that laws and regulations codify what is optimal within a country, so they make little difference to a firm's choice of the *GOV* index. Third, laws and regulations could require firms to have governance attributes they would not otherwise have because they do not benefit controlling shareholders but benefit minority shareholders. We would then expect minority shareholders to be better off. Finally, laws and regulations could restrict managerial discretion without requiring firms to adopt governance attributes included in *GOV* (for instance, a government could impose a costly and lengthy approval process for any sale of corporate assets to protect workers). In this case, it could be possible to conclude incorrectly that an improvement in *GOV* leads to a higher firm value. Suppose that country A is overregulated so that management has little discretion; then firms see no point in having a high *GOV*. In such a country, both q and *GOV* would be low. In contrast, suppose that country B is lightly regulated, so that firms find it optimal to have a high value of *GOV*. In country B, q could be high because regulation has a light touch and does not impose high costs. Consequently, q would be higher in country B than in country A, but mostly because there is less regulation in country B than in country A rather than because *GOV* is higher in country B than in country A. For this possibility to arise, it has to be that the regulation makes investment in governance less worthwhile for firms.

2. Firm-Level Governance Attributes and the Governance Index

In this section, we first describe the sample of firms covered by ISS. We then summarize the governance attributes used in our study and show how we aggregate these attributes to form an index.

2.1 Sample firms

ISS started providing the Corporate Governance Quotient (CGQ) for U.S. companies in 2002 and for international companies in 2003. The CGQ rankings are a relative measure of a firm's investment in internal governance—that is, its adoption of governance attributes that increase the power of minority shareholders—and indicate the firm's investment in governance relative to firms in its industry or within an index in which the firm is included. To compute these indices (which we do not use in this article), ISS collects information on governance attributes for a large number of U.S. and foreign companies. The information on governance attributes collected by ISS forms the raw material of this study.

The international coverage includes non-U.S. firms that are part of the following indices: (1) the MSCI EAFE index, which covers one thousand stocks in twenty-one developed countries outside North America and captures 85% of the total market capitalization for these countries; (2) the FTSE All Share index, which consists of the FTSE 100, FTSE 250, and FTSE SmallCap indices and captures 98% of the UK market; (3) the FTSE All World Developed index,

which includes the largest firms in the developed markets; and (4) the S&P/TSX index, which represents 71% of the market capitalization of the Toronto Stock Exchange. There is considerable overlap among the indices. In this article, we focus exclusively on the 2005 sample because it includes more firms and has fewer missing attributes for individual firms than the earlier periods. There are 2234 foreign firms in our sample. The three countries with the largest number of firms covered are Japan (589), the United Kingdom (530), and Canada (168). The three countries with the smallest number of firms covered are Portugal (14), Ireland (16), and New Zealand (18).

The U.S. coverage was substantially expanded in 2003. Firms are covered if they are included in any of the following indexes: the Standard and Poor's 500 index, the Standard and Poor's SmallCap 600 index, and the Russell 3000 index. The Russell 3000 index captures 98% of the market capitalization of the U.S. markets. In addition, a number of firms are covered if they file on EDGAR. ISS excludes firms that have not filed a proxy in 18 months. In order to be included, a company has to both be a U.S. company and also be incorporated in the United States. This means that companies like Tyco and Ingersoll-Rand that are part of the S&P 500 are not included because they are incorporated in Bermuda. There are 5296 U.S. companies covered in 2005. The U.S. sample is described in greater detail in Aggarwal and Williamson (2006).

2.2 Governance attributes

In 2005, ISS compiled sixty-four governance attributes for U.S. firms and fifty-five attributes for foreign firms. How a firm fares for each attribute is determined by an examination of the firm's regulatory filings, annual reports, and its website. Firms do not pay to get rated but can access their ratings and check for accuracy. Firms can change their ratings only by making and publicly disclosing changes to their governance structure. For each attribute, ISS evaluates whether a firm meets a threshold level of implementation of the attribute and considers the firm to have that attribute if it meets the threshold. We exclude eleven of the fifty-five foreign firm attributes from our analysis because either none of the firms satisfied minimally accepted criteria for these attributes or ISS replaced them with other attributes for the U.S. sample in 2005. We use forty-four attributes that are common for both U.S. and foreign firms. Some of the firm-level governance attributes may be required by regulation in certain countries. As we explain in Section 2, regulation might lead us to conclude that the governance attributes are not valuable if regulation imposes suboptimal choices of attributes from the perspective of minority shareholders.

The forty-four attributes we select cover four broad subcategories: (1) *Board* (twenty-five attributes), (2) *Audit* (three attributes), (3) *Anti-takeover* (six attributes), and (4) *Compensation and Ownership* (ten attributes). *Board* attributes attempts to capture the aspects of the functioning of the board of directors that relate to board independence, composition of committees, size, transparency, and how work is conducted; *Audit* includes questions regarding the

independence of the audit committee and the role of auditors; *Anti-takeover* provisions are from the firm's charter and bylaws and refer to dual-class structure, role of shareholders, poison pill, and blank check preferred; and *Compensation and Ownership* deals with executive and director compensation issues related to options, stock ownership, and loans, and how they are determined and monitored.

Table 1 provides a description of the threshold used by ISS for each of the forty-four governance attributes for the full sample of non-U.S. firms and also shows the percentage of firms meeting the threshold. The governance attributes are arranged by subcategories. There are several minimally accepted standards that are met by most firms. For example, seven of the twenty-five board-related criteria are met by more than 80% of the non-U.S. firms in our sample. These standards include: the CEO serves on the board of two or fewer companies, board size is greater than 5 but less than 16, the CEO is not listed as having a related-party transaction, the chairman and the CEO are separated or there is a lead director, shareholders vote on directors selected to fill vacancies, the board typically cannot amend bylaws without shareholder approval, and the board does not ignore shareholder proposals. For the three audit-related attributes, 83.9% of the firms in our sample pay lower consulting fees to auditors than audit fees; for 35.3% of the firms the audit committee is composed solely of independent outsiders; and for 58.4% of the firms auditors are ratified at the most recent meeting.

More than 90% of the firms meet four of the six antitakeover provisions: a single class of common stock, shareholders can call special meetings, the company either has no poison pill or has a poison pill that was approved by shareholders, and the company is not authorized to issue blank check preferred. Only 7% of the firms require a simple majority to approve mergers, implying that the remaining 93% of firms require a supermajority. Shareholders can act by written consent in 11.5% of our sample firms. More than half the firms meet four of the ten attributes related to compensation and ownership: no interlocks among compensation committee members (98.9%), all stock-incentive plans adopted with shareholder approval (92.8%), all directors with more than one year of service own stock (55.4%), and repricing is prohibited (54%).

2.3 Corporate governance index construction

We use the forty-four individual attributes to create our *GOV* index for each company. The index assigns a value of 1 to a governance attribute if the company meets the threshold level for that standard and 0 otherwise. In contrast to prior studies in the literature, our index is computed for U.S. firms and foreign firms using the same criteria. It is common in the literature to use additive indices (e.g., Gompers, Ishii, and Metrick 2003; Bebchuk and Cohen 2005; Bebchuk, Cohen, and Ferrell forthcoming). Brown and Caylor (2006) use this approach to construct a governance index based on ISS governance attributes for the United States. We express our index as a percentage. If a firm satisfies all

Table 1
Foreign firms satisfying minimally acceptable governance standards

	Minimally acceptable corporate governance standard	% of foreign firms meeting criterion
BOARD		
1.	All directors attended 75% of board meetings or had a valid excuse	77.8
2.	CEO serves on the boards of two or fewer public companies	91.7
3.	Board is controlled by more than 50% independent outside directors	32.6
4.	Board size is greater than 5 but less than 16	84.3
5.	CEO is not listed as having a related-party transaction	93.5
6.	No former CEO on the board	75.1
7.	Compensation committee composed solely of independent outsiders	28.9
8.	Chairman and CEO are separated or there is a lead director	89.8
9.	Nominating committee composed solely of independent outsiders	15.8
10.	Governance committee exists and met in the past year	14.0
11.	Shareholders vote on directors selected to fill vacancies	83.5
12.	Governance guidelines are publicly disclosed	53.9
13.	Annually elected board (no staggered board)	24.9
14.	Policy exists on outside directorships (four or fewer boards is the limit)	4.0
15.	Shareholders have cumulative voting rights	1.6
16.	Shareholder approval is required to increase/decrease board size	56.8
17.	Majority vote requirement to amend charter/bylaws (not supermajority)	3.5
18.	Board has the express authority to hire its own advisors	44.7
19.	Performance of the board is reviewed regularly	44.7
20.	Board-approved succession plan in place for the CEO	21.5
21.	Outside directors meet without CEO and disclose number of times met	10.1
22.	Directors are required to submit resignation upon a change in job	1.9
23.	Board cannot amend bylaws without shareholder approval or can do so only under limited circumstances	98.1
24.	Does not ignore shareholder proposal	100.0
25.	Qualifies for proxy contest defenses combination points	0.2
AUDIT		
26.	Consulting fees paid to auditors are less than audit fees paid to auditors	83.9
27.	Audit committee composed solely of independent outsiders	35.3
28.	Auditors ratified at most recent annual meeting	58.4
ANTI-TAKEOVER		
29.	Single class, common	93.2
30.	Majority vote requirement to approve mergers (not supermajority)	7.0
31.	Shareholders may call special meetings	99.7
32.	Shareholder may act by written consent	11.5
33.	Company either has no poison pill or a pill that was shareholder approved	98.6
34.	Company is not authorized to issue blank check preferred	95.0
COMPENSATION & OWNERSHIP		
35.	Directors are subject to stock ownership requirements	12.2
36.	Executives are subject to stock ownership guidelines	15.0
37.	No interlocks among compensation committee members	98.9
38.	Directors receive all or a portion of their fees in stock	17.5
39.	All stock-incentive plans adopted with shareholder approval	92.8
40.	Options grants align with company performance and reasonable burn rate	78.5
41.	Company expenses stock options	42.6
42.	All directors with more than one year of service own stock	55.4
43.	Officers' and directors' stock ownership is at least 1% but not over 30% of total shares outstanding	28.1
44.	Repricing is prohibited	54.0

The forty-four governance attributes in the *GOV₄₄* index are divided into four subcategories: *Board*, *Audit*, *Anti-takeover*, and *Compensation & Ownership*. For each attribute we report the percentage of firms that satisfy the minimally acceptable governance standard in 2005. The sample consists of 2234 foreign firms.

forty-four governance attributes, its *GOV* index would equal 100%. If an attribute is missing, the attribute is eliminated and the value of the index represents the percentage of nonmissing attributes that the firm satisfies.

We also consider the individual governance attributes that have received the most attention in the academic literature and from observers. Admittedly, these attributes are arbitrary. We include *Board Independence*: the board is controlled by more than 50% independent outside directors; *Board Size*: the board has more than five members but less than sixteen; *Chairman/CEO Separation*: chairman and CEO are separated or there is a lead director; *Board Structure*: annually elected board (no staggered board); *Audit Committee Independence*: audit committee composed solely of independent outsiders; *Auditor Ratification*: auditors ratified at most recent annual meeting; and *Stock Classes*: only one class of common stock (no dual class).

3. Cross-Country Comparisons of Firm-Level Governance

We first describe the sample of firms for which the firm-level governance attributes are available. We then investigate how investment in governance differs across countries focusing on a comparison between the U.S. and foreign firms.

3.1 Characteristics of sample firms

Table 2 provides descriptive statistics (medians) on a number of firm-specific variables by country including market capitalization (*Mkt. Cap.*) in millions of U.S. dollars, total assets (*Assets*) in millions of U.S. dollars, whether a firm is cross-listed in the United States (*ADR* is a dummy variable that takes a value of 1 if the firm is cross-listed in the United States), and Tobin's *q*. Tobin's *q* is defined as $(\text{total assets} + \text{market value of equity} - \text{total common equity} - \text{deferred taxes}) / \text{total assets}$. All foreign firm-level data are obtained from Worldscope and Datastream, while U.S. firm-level data are from Compustat. We use stock prices at the end of 2004 and financial statement data for the 2004 fiscal year, taking the perspective that the governance attributes published by ISS in 2005 were in effect in 2004.

The median market capitalization and total assets are \$1767 million and \$2561 million, respectively, for the non-U.S. sample. There is considerable variation in the average size of the firms based on these two size proxies. Firms in Greece, New Zealand, the United Kingdom, and the United States are the smallest. However, the United Kingdom and the United States have low median size values because the coverage for these two countries is much broader and, therefore, captures a much more diverse set of firms compared with other countries where mostly large firms are covered. On average, French and Swedish firms are the largest based on market capitalization; French and Italian firms are the largest based on total assets. The median *q* for the non-U.S. sample ranges from a low of 1.10 for Italy to a high of 1.49 for both Norway

Table 2
Descriptive statistics

Country	No. of firms	q	<i>Mkt. Cap.</i>	<i>Assets</i>	% <i>ADR</i>	% of <i>WScope Mkt. Cap.</i>
Australia	119	1.41	1513	1846	27	77
Austria	19	1.21	1874	4542	53	81
Belgium	25	1.16	2831	4010	16	80
Canada	168	1.38	1864	2443	64	77
Denmark	22	1.39	2314	1481	9	80
Finland	31	1.24	1634	2363	16	87
France	83	1.27	6593	9295	39	84
Germany	85	1.27	3954	7524	29	74
Greece	44	1.14	719	779	9	79
Hong Kong	110	1.28	1780	2497	45	60
Ireland	16	1.24	4376	3553	56	85
Italy	71	1.10	4216	12,222	14	82
Japan	589	1.15	2019	3795	13	81
The Netherlands	47	1.28	2702	3124	40	52
New Zealand	18	1.48	817	741	17	71
Norway	21	1.49	1343	1335	43	77
Portugal	14	1.13	3400	5168	29	86
Singapore	67	1.11	1033	1368	16	95
Spain	54	1.34	3822	4049	17	88
Sweden	43	1.49	4461	4293	21	85
Switzerland	58	1.31	2824	3253	28	89
United Kingdom	530	1.51	690	907	18	88
United States	5296	1.52	317	386	–	–
World excluding United States	2234	1.28	1767	2561	24	–

The table provides descriptive statistics for each country. The first column, No. of firms, is the number of firms from each country that are in the sample in 2005. Median values are reported for market capitalization (*Mkt. Cap.*) and total assets (*Assets*) in millions of U.S. dollars, and q is Tobin's q defined as ((total assets + market value of equity – total common equity – deferred taxes)/total assets). %*ADR* is the percentage of firms that are cross-listed. % of *WScope Mkt. Cap.* is the percentage of the market capitalization of all firms in Worldscope for a country represented by our sample firms. The last row refers only to non-U.S. firms in the sample.

and Sweden and 1.51 for the United Kingdom. The United States has the largest median q of 1.52. In our sample, more than half the firms from Austria, Canada, and Ireland are cross-listed. Our sample covers more than 70% of the Worldscope market capitalization for all countries except Hong Kong (60%) and the Netherlands (52%).

3.2 Differences in investment in governance across countries: Comparison of country averages

The average values of *GOV* for non-U.S. firms and for U.S. firms are 50% and 59%, respectively, as seen in Table 3. Figure 2 and Table 3 show that Canada (68%), the United States (59%), Finland (56%), Switzerland (55%), and the United Kingdom (55%) are the countries with the highest average governance index. Countries with the lowest average governance index are Belgium (39%), Portugal (39%), Italy (41%), and Norway (41%). These results indicate that there is a wide degree of variation in the average value of *GOV* across countries. Every country except Canada has a lower average index than the United States, and the difference is statistically significant at the 1% level.

Table 3
Quality of governance by country and relative to U.S. matched firms

Country	Country averages			p-score and industry matching				
	<i>GOV</i>	<i>GOV GAP</i>	<i>t-stat</i>	<i>GOV GAP</i>	<i>t-stat</i>	<i>No. of Neg. Gap</i>	<i>No. of Pos. Gap</i>	<i>% of firms with Pos. Gap</i>
Australia	48%	-11%	-18.00***	-16%	-16.13***	78	4	4.88
Austria	46%	-13%	-18.41***	-18%	-5.47***	9	0	0.00
Belgium	39%	-20%	-11.40***	-27%	-10.24***	18	1	5.26
Canada	68%	9%	14.42***	6%	6.34***	31	81	72.32
Denmark	45%	-14%	-1.79*	-20%	-5.11***	11	2	15.38
Finland	56%	-3%	-7.73***	-5%	-2.98***	17	7	29.17
France	48%	-11%	-11.91***	-21%	-17.36***	62	0	0.00
Germany	50%	-9%	-15.92***	-18%	-18.05***	62	2	3.13
Greece	45%	-14%	-19.32***	-18%	-7.32***	16	1	5.88
Hong Kong	44%	-15%	-27.13***	-21%	-17.50***	72	2	2.70
Ireland	51%	-8%	-3.06***	-10%	-3.16***	9	1	10.00
Italy	41%	-18%	-25.88***	-27%	-19.45***	38	0	0.00
Japan	43%	-16%	-82.05***	-23%	-59.64***	481	1	0.21
The Netherlands	51%	-8%	-6.19***	-16%	-11.34***	38	2	5.00
New Zealand	43%	-16%	-9.79***	-18%	-5.90***	11	1	8.33
Norway	41%	-18%	-13.64***	-24%	-10.81***	13	0	0.00
Portugal	39%	-20%	-13.50***	-26%	-9.36***	7	0	0.00
Singapore	45%	-14%	-17.74***	-21%	-12.51***	46	2	4.17
Spain	46%	-13%	-13.28***	-17%	-10.80***	33	0	0.00
Sweden	43%	-16%	-17.25***	-21%	-12.00***	34	0	0.00
Switzerland	55%	-4%	-3.56***	-11%	-7.49***	43	3	6.52
United Kingdom	55%	-4%	-10.79***	-7%	-13.37***	307	99	24.38
United States	59%							
Total (w/o United States)	50%	-9%		-15%	-47.82***	1436	209	12.68

The governance score for a firm is the percentage of governance attributes for which the firm meets or exceeds the minimum satisfactory standard on the forty-four ISS attributes (described in Table 1) for 2005. The sample consists of 1714 non-U.S. firms (the number reduces to 1648 after *p*-score and industry matching) and 4070 U.S. firms from nonregulated industries. The *t*-statistic measures the difference between the governance index for firms in a country relative to the United States. Firms are compared using (1) country averages of sample firms and (2) averages with firms matched with propensity score (*p*-score) and industry affiliation. *GOV GAP* is the difference in the *GOV* score of the foreign firm and the U.S. matched firm, and the average for all firms in a country is reported above. *No. of Pos. Gap* and *No. of Neg. Gap* represent the number of firms that are better/worse than the U.S. matched firm in terms of the quality of governance. The last column represents the percentage of firms in each country whose quality of governance is better than its U.S. match. *, **, and *** reflect significance at the 10%, 5%, and 1% levels, respectively.

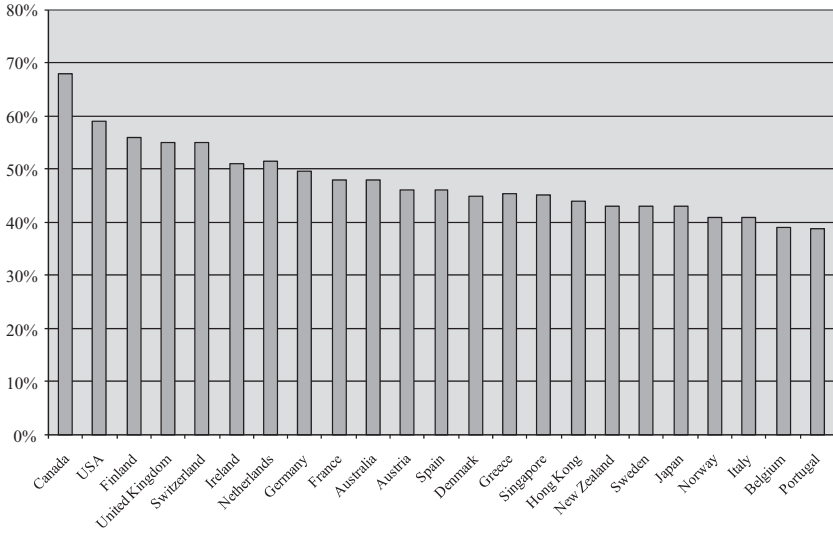


Figure 2
Governance scores by country

Values on the vertical axis represent the mean of the firm-level governance index for a particular country. *GOV* is the percentage of forty-four governance attributes that a firm meets based on the attributes that have nonmissing data. Mean governance scores are reported for each of the twenty-three countries as of 2005. The information is based on 1714 non-U.S. firms and 4070 U.S. firms from nonregulated industries.

3.3 Differences in governance across countries: Comparison using matched pairs

There is an obvious problem of interpretation when we compare country averages of the *GOV* index: we are comparing governance for firms with different characteristics. As shown in Table 2, median firm size differs widely across countries. Differences in firm size can result from differences in country-level governance attributes. Perhaps more important, firm-level governance attributes have costs and benefits. If costs of governance attributes have a fixed component but benefits are proportional to firm size, one would expect larger firms to invest more in firm-level governance. In fact, in the United States, there is a strong correlation between *GOV* and firm size measured by assets (approximately 0.50). Consequently, by comparing *GOV* across countries with different types of firms, we may be comparing apples to oranges.

To make our comparison of the governance of U.S. firms with the governance of foreign firms more precise, we match firms based on industry and closest propensity scores (*p*-scores). Drucker and Puri (2005) argue that this econometric method is superior because it employs fewer restrictions. Rosenbaum and Rubin (1983); Rubin (1997); and Conniffe, Gash, and O’Connell (2000), among others, have shown this approach to be more accurate. In order to implement this method, we calculate each firm’s

propensity score, which is simply equal to the probability that a firm with given characteristics is a foreign firm. This probability is calculated by using observable firm characteristics of both U.S. and non-U.S. firms—namely, log of total assets (*SIZE*); two-year average sales growth (*SGROWTH*); two-year average research and development expense to sales (*R&D/SALES*); cash to assets (*CASH/ASSETS*); capital expenditures to assets (*CAPEX/ASSETS*); property, plant, and equipment to sales (*PPE/SALES*); earnings before interest and taxes to sales (*EBIT/SALES*); long-term debt plus short-term debt to assets (*DEBT/ASSETS*), as well as industry dummies, in a probit regression.

Of the 2138 foreign firms that could be matched to U.S. counterparts based on industry and *p*-scores, 490 firms that operate in regulated industries (specifically, in Utilities, Transportation, Telecommunication Service, Insurance, Energy, and Banking) are excluded from the analysis.

We define a foreign firm's governance gap, *GOV GAP*, as the difference between its *GOV* index value and the index value of its matching U.S. firm. Table 3 also shows the average difference between the *GOV* index of foreign firms and their matching U.S. counterparts using the *p*-score matching procedure. It is immediately clear that matching has an impact on the size of the governance gap. For instance, the only country with a positive difference with the United States when comparing averages is Canada. The difference in the index average between the United States and Canada drops from 9% to 6% when Canadian firms are matched with U.S. firms based on *p*-scores and industry. Further, when we match firms, the governance gap of foreign firms is worse than when we simply compare averages of the *GOV* index across countries. Part of the reason is that the U.S. sample contains a large number of smaller firms, and smaller firms typically have worse governance when measured by an index like *GOV*.

We also show in Table 3 the number of firms in each country that invest less in governance than their matching U.S. firm, the number of firms in each country that invest more in governance than their matching U.S. firm, and, finally, the percentage of firms in a country that invest more in governance than their matching U.S. firm based on the propensity score method. Across the world, 87.3% of firms invest less in governance than their matching U.S. firm. Strikingly, 86.1% of the firms that invest more in governance than their matching U.S. firm are in two countries, Canada and the United Kingdom. Our sample has twenty-two non-U.S. countries. Only fifteen countries have at least one firm that has better governance than its matching U.S. firm. There are only three countries with more than five firms that have a positive index gap: Canada, Finland, and the United Kingdom. Canada is the country with the largest fraction of firms investing more in governance than their U.S. counterpart. It is the only country with a majority of firms with a positive gap (72.3% of the firms have a positive gap with the propensity score matching method). In the case of Finland, 29.2% of the firms have a positive gap. Finally, for the United

Kingdom, the percentage is 24.4%. Interestingly, two of the three countries with the largest percentage of firms with a positive gap are common law countries.

3.4 Firm and country characteristics and the GAP

We discussed in Section 2 that the governance gap, *GOV GAP*, defined as the difference between a foreign firm's *GOV* index value and the index value of its matching U.S. firm, depends on firm and country characteristics. We expect firms that are more in need of access to external finance to have a lower gap. Also, we expect a firm's gap to be lower if its country is more economically and financially developed. Finally, depending on whether internal governance and investor protection are substitutes or complements, we expect the gap to be decreasing or increasing with investor protection.

For each firm, we measure its *GOV* index and the *GOV* index of its matching U.S. firm. Before we turn to the governance gap, it is useful to look at the relation between these two indices. If firm characteristics make it optimal for some firms to invest more in governance than others, we would expect a positive relation between a firm's *GOV* index and the *GOV* index of its U.S. matching firm. We find that this is the case. In unreported regressions, we regress the foreign firm's *GOV* index on the *GOV* index of the matching U.S. firm, a constant, and country fixed effects. We find that the *GOV* index of the matching firm has a coefficient of 0.043 significant at the 10% level and the regression has an adjusted *R*-square of 65%. As expected from Doidge, Karolyi, and Stulz (2007), most of the explanatory power of the regression comes from the country fixed effects.

Table 4 compares firm and country characteristics for firms with a positive governance gap versus firms with a negative governance gap. This analysis requires additional information in order to compute Tobin's *q*, which reduces the sample size slightly (only by forty-six observations). The first two columns of Table 4es report the medians for the firms with a negative governance gap—i.e., firms that invest less in internal governance as measured by *GOV* than their U.S. counterpart—and for the firms with a positive governance gap. Similar to previous work in the corporate governance literature (e.g., Gompers, Ishii, and Metrick 2003; Doidge, Karolyi, and Stulz 2004; Durnev and Kim 2005), we use Tobin's *q* as the measure of firm value. It has the interpretation of the value created in excess of the cost of the assets. We find that the *q* of firms that invest more in governance than their matching U.S. firms is significantly greater than the *q* of firms that invest less. In the next section, we examine this valuation difference in greater detail.

The firms with a positive gap differ from those with a negative gap in many other ways besides having a higher *q*. In particular, the firms with a positive gap have a market capitalization and total assets that are smaller than the firms with worse governance. They also have greater sales growth, R&D to sales, cash to assets, debt/assets, and closely held ownership, but their capital expenditures are significantly lower.

Table 4
Comparison of firms with better governance than U.S. matching firms

	Descriptive statistics			Probit regressions		
	Negative Gov. GAP no. of firms = 1393	Positive Gov. GAP no. of firms = 206	Difference between Neg. and Pos. Gap	LHS: Positive Gap dummy (N = 1555)		
<i>q</i>	1.28	1.57	-0.29 (0.00)***			
<i>MKT. CAP</i> (\$ millions)	1565.25	1173.45	391.80 (0.01)***			
<i>GOV</i>	0.46	0.64	-0.18 (0.00)***			
<i>SIZE, assets</i> (\$ millions)	2197.94	1187.47	1010.47 (0.00)***	-0.007 (1.19)	-0.011 (2.03)**	-0.022 (4.99)***
<i>SGROWTH</i>	0.05	0.08	-0.03 (0.00)***	0.010 (0.40)	0.019 (1.00)	0.041 (2.60)***
<i>PPE/SALES</i>	<i>j</i> 0.00	0.00	0.00 (0.38)	0.001 (0.55)	0.001 (0.36)	0.002 (0.89)
<i>R&D/SALES</i>	0.24	0.35	-0.10 (0.00)***	0.201 (2.72)***	0.215 (2.93)***	0.220 (2.44)**
<i>FOREIGN SALES/SALES</i>	0.11	0.06	0.05 (0.29)	0.023 (0.87)	0.025 (0.90)	0.036 (1.11)
<i>CASH/ASSETS</i>	0.03	0.04	-0.01 (0.00)***	-0.209 (5.05)***	-0.223 (4.88)***	-0.294 (5.00)***
<i>CAPEX/ASSETS</i>	0.26	0.24	0.02 (0.05)**	-0.038 (0.63)	-0.029 (0.42)	-0.056 (0.71)
<i>EBIT/SALES</i>	0.08	0.09	-0.01 (0.13)	0.001 (0.83)	0.000 (0.16)	0.001 (0.35)
<i>DEBT/ASSETS</i>	0.21	0.24	-0.04 (0.05)**	0.010 (0.29)	0.019 (0.64)	0.014 (0.35)

<i>CLOSELY HELD</i>	0.40	0.48	-0.08 (0.00)***	-0.045 (1.14)	-0.042 (1.34)	-0.008 (0.19)
<i>ADR</i>	0.00	0.00	0.00 0.01***	0.018 (1.12)	0.043 (1.50)	0.070 (1.59)
<i>GDPPC</i>	10.19	10.19	0.00 0.000	0.013 (0.15)	-0.066 (0.69)	-0.096 (0.90)
<i>MarketCap/GDP</i>	94.88	131.53	-36.65 0.00***	-0.000 (2.15)**	-0.000 (1.59)	-0.000 (1.18)
<i>Common Law</i>	0	1	-1 (0.00)***	0.235 (4.29)***		
<i>Rule of Law*Anti-Director</i>	31.43	40.00	-8.57 0.00***		0.013 (5.14)***	
<i>Anti-Self-Dealing Index</i>	0.48	0.86	-0.38 (0.00)***			0.224 (3.25)***
Pseudo <i>R</i> -squared				0.26	0.23	0.18

The median values of firm characteristics are reported for negative and positive gap firms based on industry and propensity score matching. Estimates of probit regressions are for nonregulated firms in which the dependent variable takes a value of 1 for positive gap firms. *SGROWTH* (sales growth), *R&D/SALES*, *FOREIGN SALES/SALES* are two-year averages and are winsorized at 1% and 99%; *SIZE* (natural log of total assets), *CASH/ASSETS*, *CAPEX/ASSETS*, *PPE/SALES*, *EBIT/SALES*, *DEBT/ASSETS*, *CLOSELY HELD*, *ADR* dummy, *GDPPC* (GDP per capita), and *MarketCap/GDP* are included. *Common Law* dummy equals 1 for a country with common law; the *Rule of Law* and the *Anti-Director* indices are from LLSV (1998) and DLLS (2008), respectively; the *Anti-Self-Dealing Index* is also from DLLS (2008). *p*-values obtained from chi-squared tests for differences in medians are in parentheses for the descriptive statistics. Probit regressions include industry dummies, and standard errors are corrected for country-level clustering (*t*-statistics are in parentheses). *, **, and *** reflect significance at 10%, 5%, and 1% levels, respectively.

We also investigate how country characteristics differ between firms with a positive gap and firms with a negative gap. The firms that invest more in governance than their U.S. counterparts come from countries with greater stock market capitalization to GDP, with common law, with a better judicial system, and with better laws and regulations to curb self-dealing by insiders. This result is completely inconsistent with the view that firm-level governance and country-level investor protection are substitutes and is supportive of the role of financial development (but not economic development) discussed in Section 2. For comparison with Durnev and Kim (2005), we use the product of the index of rule of law and the antidirector index of La Porta et al. (LLSV) (1998) (as revised in Djankov et al. (DLLS) 2008) as a measure of the quality of the judicial system. We also use the anti-self-dealing index from DLLS. Firms with a positive governance gap come from countries in which these variables have higher values.

We report in Table 4 estimates of probit regressions in which the dependent variable takes a value of 1 if a foreign firm has better governance than its matching U.S. counterpart and equals 0 otherwise. Few firm characteristics are systematically related to the probability that a firm has a positive governance gap. We find that firms with high R&D and low cash-to-asset ratios are more likely to have a positive gap. When we control for the anti-self-dealing index, we also find that larger firms are less likely to have a positive governance gap. Not surprisingly, firms with greater sales growth are more likely to have a positive gap. We find that in these regressions the measures of investor protection are significant predictors of a firm's governance relative to its U.S. matching firm, so that firms in countries with higher investor protection are more likely to have a positive gap. By far, the most important variable in predicting whether a firm will have a positive *GOV GAP* is the common law dummy variable. Though we do not report the probit regression in a table, we find that adding common law to a regression without investor protection variables doubles the pseudo *R*-square of the regression. In other words, the legal origin of the country in which a firm is incorporated explains more than all other variables in the regression about whether the firm will invest more in governance than its matching U.S. firm.

We also investigate, but do not report, the determinants of the size of a firm's *GOV GAP* for firms that have a negative gap. We find that variables that make it more likely that a firm will have a positive governance gap reduce the size of the governance index shortfall for firms that have a shortfall.

4. Firm Value and Internal Governance

We have now seen that the typical foreign firm invests less in governance than a comparable U.S. firm, but some foreign firms invest more than comparable U.S. firms. We show that firms that invest more in governance than their matching U.S. firm have higher value, in the sense that they have a higher Tobin's *q*,

than the firms that invest less. In this section, we examine the relation between firm value and the index more deeply. Specifically, we test the prediction in Section 2 that there should be a positive relation between *GOV* and Tobin's q in the cross-section given that internal governance and investor protection are complements, as shown in Section 3. Further, we would like to understand whether there is a linear relation between firm value and the governance gap, so that any increase in the governance gap is associated with a higher firm value. Alternatively, it could be that firm value falls as a firm's governance index shortfall relative to its U.S. matching firm increases but that the value of a firm with a positive gap does not increase, and possibly even falls, as the size of the gap increases. Such an outcome would occur if, for instance, regulations force firms to have a positive gap when the *GOV* index of the matching U.S. firm is the index level that would be optimal for the firm.

A relation between firm value and the governance gap raises many questions. First, it could simply be that the governance index is correlated with observable firm characteristics that explain q (firm characteristics omitted variable problem). To address this issue, we need to examine the relation between firm value and the governance gap controlling for firm characteristics. Second, it could be that each firm has optimal internal governance given its characteristics, so that a relation between firm value and the governance gap just indicates that variables that affect a firm's choice of internal governance also affect the firm's value (endogeneity problem). Third, if good investor protection and greater economic and financial development make greater investment in internal governance optimal, a relation between firm value and the governance gap could be due to the impact of these country characteristics on firm value (country characteristics omitted variable problem). We address the first two problems in the first subsection and the third problem in the second subsection.

4.1 Firm value, the governance GAP, and firm characteristics

In this section, we relate firm value to the governance gap. We use the governance index of the U.S. matching firm as a regressor. If the relation between q and a firm's governance index is due to the firm characteristics that explain the governance index, we would expect much of that effect to be captured by the governance index of the U.S. matching firm. Tobin's q can differ across firms because of industry and country characteristics rather than because of differences in firm characteristics. To account for industry and country sources of heterogeneity, we use industry and country fixed effects. We employ an estimator that allows for clustering of the residuals at the country level.

Regression (1) of Table 5 shows estimates when we regress Tobin's q on the governance index a firm would have if it were a U.S. firm, *GOV_US*; the governance index gap, *GOV GAP*; and firm size measured by the log of total assets, *SIZE*. The regression estimates show a strong positive relation between a firm's *GOV GAP* and its q . A firm's Tobin's q is positively related to *GOV_US*,

Table 5
Tobin's *q*, firm governance, and firm characteristics

	(1)	(2)	(3)	(4)	(5)	(6)
<i>GOV_US</i>	2.023 (4.48)***	2.031 (4.55)***	1.777 (2.85)***	0.959 (2.15)**	0.967 (2.23)**	0.806 (1.27)
<i>GOV_GAP</i>	1.307 (3.91)***		1.114 (1.80)*	1.235 (3.70)***		1.046 (1.82)*
<i>NEGATIVE GAP</i>		1.358 (3.53)***			1.283 (3.51)***	
<i>POSITIVE GAP</i>		1.063 (0.98)			1.009 (1.10)	
<i>SIZE</i>	-0.161 (5.92)***	-0.161 (5.92)***	-0.171 (8.71)***	-0.085 (3.37)***	-0.085 (3.36)***	-0.107 (5.78)***
<i>SGROWTH</i>				0.246 (1.46)	0.246 (1.46)	0.272 (1.48)
<i>R&D/SALES</i>				2.179 (2.94)***	2.172 (2.85)***	2.196 (2.75)**
<i>FOREIGN SALES/SALES</i>				0.120 (1.34)	0.119 (1.29)	0.179 (1.91)*
<i>CASH/ASSETS</i>				2.353 (7.34)***	2.355 (7.31)***	2.168 (7.52)***
<i>CAPEX/ASSETS</i>				3.057 (3.83)***	3.060 (3.84)***	3.567 (4.69)***
<i>PPE/Sales</i>				-0.010 (1.16)	-0.010 (1.17)	-0.015 (1.87)*
<i>EBIT/SALES</i>				0.027 (8.64)***	0.027 (8.45)***	0.027 (6.98)***
<i>DEBT/ASSETS</i>				0.062 (0.23)	0.062 (0.23)	0.173 (0.71)
<i>Constant</i>	2.844 (7.35)***	2.850 (7.35)***	3.106 (5.35)***	1.658 (4.97)***	1.663 (4.98)***	1.972 (4.14)***
Adjusted <i>R</i> -squared	0.24	0.24	0.24	0.37	0.37	0.34
Observations	1599	1599	1527	1599	1599	1527

The table shows estimates of regressions of firm value (Tobin's *q*, winsorized at 1% and 99%) on differences in governance between a foreign firm and a matched U.S. firm based on industry and propensity scores obtained from a probit analysis. *GOV_US* is the governance index for the matched U.S. firm. *NEGATIVE GAP* and *POSITIVE GAP* are the governance gap of a firm from its matching U.S. counterpart if negative and if positive, respectively. *GOV_GAP* includes both negative and positive gap. *SGROWTH* (sales growth), *R&D/SALES*, *FOREIGN SALES/SALES* are two-year averages and winsorized at 1% and 99%; *SIZE* (natural log of total assets), *CASH/ASSETS*, *CAPEX/ASSETS*, *PPE/SALES*, *EBIT/SALES*, and *DEBT/ASSETS* are included for control. All regressions include industry and country dummies (except for the two-stage least squares regressions that do not have country dummies), and standard errors are corrected for clustering of observations at the country level (*t*-statistics are in parentheses). In regressions (3) and (6), *GOV_GAP* is instrumented with the average *GOV_GAP* of the other firms in the same industry in the same country. *, **, and *** reflect significance at the 10%, 5%, and 1% levels, respectively.

but the coefficient on *GOV_US* is much larger than the coefficient on *GOV_GAP*. Finally, *q* is negatively related to firm size.

To evaluate whether the relation to firm value depends on the sign of the *GOV_GAP*, regression (2) separates *GOV_GAP* into a negative *GAP* and a positive *GAP*. We find that the coefficient on negative *GAP* is positive and significant at the 1% level. Consequently, firms with a greater index shortfall relative to their U.S. matching firm have lower value. In contrast, the coefficient on positive *GAP* is positive but insignificant.

In regression (1), *GOV_US* should capture the relation between governance and firm value if the firm were a U.S. firm. As a result, the significance of

GOV GAP has to be explained by the fact that the firm does not make the governance choices that a U.S. firm would make or because there is a matching error. If all firms choose *GOV* optimally given that firm characteristics and country characteristics do not matter, perfect matching would imply that each firm would choose *GOV* equal to the *GOV* of the U.S. matching firm. Hence *GOV GAP* would be equal to 0 for each firm. Matching errors would imply that in some cases a foreign firm is matched with a U.S. firm that chooses optimally a higher *GOV* index than the foreign firm because of differences in firm characteristics, and in other cases it is matched with a U.S. firm that chooses a lower *GOV* index. As a result, matching errors would be expected to lead to an average of *GOV GAP* close to 0. Since the average *GOV GAP* is significantly negative for all countries but Canada, it is implausible that matching mistakes explain the relation between *GOV GAP* and firm value.

In light of the endogeneity concerns that are endemic in the governance literature, a more plausible explanation for the relation between q and *GOV GAP* than matching errors is that we do not observe important firm-specific characteristics that affect the foreign firm's choice of governance as well as its q .⁴ However, in our setting, such an explanation seems less likely than is typical in regressions that have q as an explanatory variable. Since we control for a firm's governance if it were a U.S. firm, a relation between *GOV GAP* and q induced by unobserved firm characteristics would have to result from systematic unobserved firm characteristics correlated with q for foreign firms but not for U.S. firms. Such a systematic bias seems to stretch belief. Nevertheless, we address this endogeneity problem by instrumenting *GOV GAP*. A good instrument would be one that is uncorrelated with unobserved firm characteristics that affect the firm's *GOV GAP* but has a highly significant regression coefficient in a regression of *GOV GAP* on the instrument, *GOV_US*, and other control variables included in the second-stage regression.⁵ We use as our instrument the average *GOV GAP* of the other firms in the same industry and in the same country.⁶ Since we already control for the effect of industry on q through industry fixed effects, there is no reason to believe that the instrument will be correlated with unobserved firm characteristics that affect the choice of internal governance. However, the regression used to test if the instrument is a useful instrument yields a t -statistic on the instrument in excess of 10, so that the instrument is useful. We reproduce regression (3) using the instrumental variable. The regression treats each country as a cluster but does not use country fixed effects since the instrumental variable is the intersection of an industry

⁴ See Hermalin and Weisbach (2003).

⁵ See Wooldridge (2002), p. 84.

⁶ For the use of a similar instrument in a different context, see John, Litov, and Yeung (2008).

and a country. The coefficient on *GOV GAP* is close in value to the coefficient in the OLS regression, and the coefficient is significant at the 10% level.

In regressions (1)–(3), we estimate the coefficient on *GOV GAP* controlling only for *GOV_US* and size. Having few variables in the second-stage regressions makes it easier for the instrument to have a high *t*-statistic in the first-stage regression, but it could be that the success of the instrumental variable regression is simply explained by the fact that *GOV GAP* proxies for firm characteristics. We also would expect firm characteristics to be related to *q* directly rather than through the governance variables. In regression (4), we control for other firm characteristics generally used in the literature in *q* regressions. We control for two-year average sales growth (*SGROWTH*); two-year average research and development expense to sales (*R&D/SALES*); two-year average foreign sales to total sales (*FOREIGN SALES/SALES*); cash to assets (*CASH/ASSETS*); capital expenditures to assets (*CAPEX/ASSETS*); property, plant, and equipment to sales (*PPE/SALES*); earnings before interest and taxes to sales (*EBIT/SALES*); and a measure of leverage corresponding to long-term debt and debt due in less than a year to assets (*DEBT/ASSETS*). Similar to prior work we winsorize extreme percentiles (1st and 99th) of *q*, *SGROWTH*, *R&D/SALES*, and *FOREIGN SALES/SALES*.

Regression (4) shows that adding these control variables does not affect the coefficient on *GOV GAP*, but it reduces the coefficient on *GOV_US*. The control variables have the signs one would generally expect based on the previous literature. In regression (5), we split *GOV GAP* into a positive and a negative component. The values of the coefficients on the two components of *GOV GAP* are not meaningfully different from their values in regression (2). It follows that the coefficient on *GOV GAP* as well as the coefficients on the positive and negative components of *GOV GAP* are robust to controlling for firm characteristics. In regression (6), we estimate regression (4) instrumenting *GOV GAP* as we did in regression (3). The coefficient on *GOV GAP* is positive and significant at the 10% level. Interestingly, the coefficient on *GOV_US* is no longer significant.

To evaluate the economic significance of the coefficient on *GOV GAP* in regression (6), it is useful to note that the average *q* in the United States is 1.52. From Table 3, the average of *GOV GAP* is 9%. Consequently, decreasing the governance of the average U.S. firm by the average *GOV GAP* would reduce its *q* by 0.09×1.046 , or 0.094, which would represent a *q* reduction of 6.2% ($0.094/1.52$). Such a reduction is economically significant, but it also does not seem unreasonable since the average *q* of foreign firms is 1.28, or 15.78% lower than the average *q* of U.S. firms.

The evidence in this subsection shows that there is a robust relation between *GOV GAP* and *q* as well as a robust relation between negative *GAP* and *q*. These relations hold when we control for the index value the foreign firm would have in the United States and for firm characteristics as well as when we allow for the endogenous determination of the foreign firm's governance. Our results are

consistent with the hypothesis that foreign firms with a negative governance gap invest less in governance than would be required to maximize the wealth of their minority shareholders if they were U.S. firms, so that firm characteristics alone cannot explain these firms' underinvestment in governance relative to U.S. firms.

4.2 Country characteristics and the relation between firm value and *GOV GAP*

We saw in Section 2 that, for firms with controlling shareholders, a foreign firm's internal governance is not chosen to maximize the wealth of minority shareholders but rather to maximize the welfare of the controlling shareholder. The ability of the controlling shareholder to extract private benefits is strongly determined by a country's investor protection, so that if investor protection is weaker, improvements in firm-level governance will be costlier for the controlling shareholder. Our evidence in Section 4 showing that firms in countries with better investor protection are less likely to have a negative governance *GAP* is consistent with this hypothesis. However, with this perspective, it could be that a country's institutions lead to an optimal firm ownership structure as well as an optimal firm-level governance regime. With this view, therefore, a firm in a given country with a given governance index would have the optimal governance index for that firm. It would follow that, even though the firm could increase its value for minority shareholders by choosing more governance attributes, keeping ownership by the controlling shareholder unchanged, the firm does not really have this option because if it increases its investment in internal governance, it makes the controlling shareholder worse off and its existing ownership structure suboptimal. This would imply that there is an optimal level of *GOV* that would be explained by country-level variables given the firm's other governance attributes. We explore the implications of this view in this subsection.

We first address the issue that country characteristics are known to affect the use of other governance mechanisms. In particular, the literature shows that both insider ownership (see La Porta, Lopez-de-Silanes, and Shleifer 1999; Stulz 2005 for further references) and the adoption of ADR programs depend on country characteristics. Cross-listing enables a firm to have better governance by borrowing external governance attributes from the United States (e.g., Stulz 1999). It is well known that there is a positive relation between firm value and whether a firm has adopted an ADR program (Doidge, Karolyi, and Stulz 2004). In regression (1) of Table 6, we therefore add these governance mechanisms to our regression (4) of Table 5 to make sure that internal governance has a distinct role to play. Adding these two additional governance measures has no impact on the coefficient of *GOV GAP* even though both measures have positive significant coefficients. In other words, internal governance as measured by our *GOV* index has a distinct role in a corporation and does not proxy for the presence of other governance mechanisms. In regression (2), we split *GOV*

Table 6
Firm value, governance, and country characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>GOV_US</i>	0.911 (2.08)**	0.910 (2.13)**	-0.358 (1.72)*	0.520 (1.11)	0.562 (1.37)	0.224 (0.41)	0.267 (0.55)	0.386 (0.80)	0.437 (1.08)
<i>GOV_GAP</i>	1.279 (3.76)***			0.872 (2.48)**		0.542 (1.34)		0.727 (1.98)*	
<i>NEGATIVE GAP</i>		1.273 (3.55)***			1.031 (3.56)***		0.694 (2.27)**		0.911 (3.91)***
<i>POSITIVE GAP</i>		1.310 (1.23)			0.243 (0.23)		-0.025 (0.02)		0.021 (0.02)
<i>SIZE</i>	-0.101 (3.27)***	-0.101 (3.24)***	-0.092 (3.33)***	-0.108 (4.15)***	-0.107 (4.09)***	-0.094 (3.42)***	-0.093 (3.39)***	-0.105 (4.33)***	-0.105 (4.31)***
<i>SGROWTH</i>	0.278 (1.63)	0.278 (1.62)	0.273 (1.61)	0.283 (1.68)	0.286 (1.71)	0.263 (1.52)	0.266 (1.55)	0.278 (1.64)	0.282 (1.68)
<i>PPE/SALES</i>	-0.010 (1.08)	-0.010 (1.09)	-0.010 (1.08)	-0.014 (1.75)*	-0.015 (1.82)*	-0.016 (1.99)*	-0.016 (2.05)*	-0.015 (1.79)*	-0.015 (1.84)*
<i>R&D/SALES</i>	2.023 (2.79)**	2.024 (2.74)**	2.027 (2.75)**	2.195 (3.48)***	2.161 (3.23)***	2.192 (3.44)***	2.162 (3.20)***	2.210 (3.50)***	2.173 (3.24)***
<i>FOREIGN SALES/SALES</i>	0.082 (0.89)	0.082 (0.86)	0.094 (0.97)	0.070 (0.72)	0.066 (0.67)	0.080 (0.80)	0.077 (0.75)	0.064 (0.65)	0.059 (0.58)
<i>CASH/ASSETS</i>	2.294 (6.89)***	2.294 (6.82)***	2.299 (6.75)***	2.229 (6.88)***	2.235 (6.85)***	2.271 (6.90)***	2.276 (6.86)***	2.233 (6.92)***	2.238 (6.90)***
<i>CAPEX/ASSETS</i>	3.051 (3.90)***	3.050 (3.90)***	3.040 (3.82)***	2.967 (3.58)***	2.977 (3.60)***	2.991 (3.70)***	2.999 (3.71)***	2.966 (3.60)***	2.976 (3.62)***
<i>EBIT/SALES</i>	0.026 (8.53)***	0.026 (8.36)***	0.027 (8.63)***	0.027 (7.66)***	0.027 (7.65)***	0.028 (7.59)***	0.028 (7.59)***	0.027 (7.79)***	0.027 (7.74)***
<i>DEBT/ASSETS</i>	0.072 (0.27)	0.072 (0.27)	0.081 (0.31)	0.093 (0.36)	0.092 (0.36)	0.086 (0.33)	0.086 (0.33)	0.097 (0.38)	0.097 (0.38)

<i>CLOSELY HELD</i>	0.217 (1.76)*	0.217 (1.75)*	0.181 (1.36)	0.202 (1.45)	0.201 (1.44)	0.137 (1.03)	0.136 (1.02)	0.205 (1.48)	0.205 (1.47)
<i>ADR</i>	0.172 (2.58)**	0.172 (2.57)**	0.181 (2.87)**	0.151 (2.66)**	0.151 (2.67)**	0.134 (2.20)**	0.134 (2.22)**	0.143 (2.57)**	0.144 (2.61)**
<i>GDPPC</i>				-0.439 (3.72)***	-0.438 (3.81)***	-0.413 (3.17)***	-0.410 (3.21)***	-0.402 (3.37)***	-0.400 (3.44)***
<i>Market CAP/GDP</i>				0.000 (0.08)	0.000 (0.06)	-0.000 (1.02)	-0.000 (1.03)	-0.000 (0.04)	-0.000 (0.02)
<i>COMMON LAW</i>				-0.126 (1.38)	-0.127 (1.40)				
<i>Rule of Law*Anti Director</i>						0.002 (0.38)	0.002 (0.33)		
<i>Anti-Self-Dealing</i>								-0.194 (1.28)	-0.206 (1.40)
<i>Constant</i>	1.840 (3.95)***	1.840 (3.96)***	2.339 (4.95)***	6.691 (4.72)***	6.673 (4.80)***	6.274 (4.30)***	6.253 (4.34)***	6.410 (4.50)***	6.392 (4.59)***
Adjusted <i>R</i> -squared	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36
Number of observations	1581	1581	1584	1581	1581	1581	1581	1581	1581

The table shows estimates of regressions of firm value (Tobin's q , winsorized at 1% and 99%) on differences in governance between a foreign firm and a matched U.S. firm based on industry and propensity scores obtained from a probit analysis. *GOV_US* is the governance index for the matched U.S. firm. *NEGATIVE GAP* and *POSITIVE GAP* are the governance gap of a firm from its matching U.S. counterpart if negative and if positive, respectively. *GOV GAP* includes both negative and positive gap. *SGROWTH* (sales growth), *R&D/SALES*, *FOREIGN SALES/SALES* are two-year averages and winsorized at 1% and 99%; *SIZE* (natural log of total assets), *CASH/ASSETS*, *CAPEX/ASSETS*, *PPE/SALES*, *EBIT/SALES*, and *DEBT/ASSETS* are included for control. *CLOSELY HELD* is the percentage of shares closely held, and *ADR* dummy equals 1 if for firms cross-listed in the United States. *Common Law* dummy equals 1 for a country with common law; the *Rule of Law* and the *Anti-Director* indices are from LLSV (1998) and DLLS (2008), respectively; the *Anti-Self-Dealing Index* is also from DLLS (2008). All regressions include industry fixed effects, and the first three regressions also include country fixed effects. Standard errors are corrected for clustering of observations at the country level (t -statistics are in parentheses). *, **, and *** reflect significance at the 10%, 5%, and 1% levels, respectively.

GAP into a positive and a negative value. We find that the negative value has a positive significant coefficient, but the positive value does not.

To establish better the unique role of internal governance, we reestimate the regression without *GOV GAP*. If firm fundamentals in a country with good investor protection make high investment in internal governance valuable for a firm, the same firm will be at a disadvantage in a country with poor investor protection in which such a high investment in internal governance is not optimal. Hence, we expect the value of firms that would have high governance in the United States to be lower abroad. We find that this is the case with regression (3). Such a result is reminiscent of the result of Rajan and Zingales (1998) that industries that raise more external capital in the United States grow less in countries with poor financial development. In that paper, they use the amount of external capital raised in the United States as a benchmark for optimal external funding with good financial development, and then show that industries that optimally would raise more external funding if their country were financially developed are at a disadvantage if their country is not as financially developed as the United States. Here, we conduct a similar experiment. The results of this experiment are not subject to an endogeneity problem since we are using as our regressor the governance index of a different firm than the governance index of the firm whose q we are measuring. Not surprisingly, the result only holds provided that we include all the control variables used in regression (1). This is not surprising since, if we control for few firm characteristics, *GOV_US* proxies for firm characteristics that we know are positively related to q .

In the next regression, regression (4), we add to regression (1) a measure of economic development, GDP per capita, a measure of financial development, the stock market's capitalization divided by GDP, and a proxy for investor protection, a dummy variable that takes value 1 if a country is a common law country. These measures have been widely used in the literature. The only added variable with a significant coefficient is GDP per capita, which has a negative coefficient. The coefficient on *GOV GAP* falls from 1.279 to 0.872, but that fall is due to the removal of the country fixed effects rather than to the addition of development and investor protection variables. The significance of the *GOV GAP* coefficient falls as well, from the 1% level to the 5% level. Regression (5) shows, however, that the reason for the decrease in the coefficient on *GOV GAP* is the dramatic decrease in the coefficient on the positive component of *GOV GAP*. The coefficient on the negative component of *GOV GAP* is little affected by the change in regression specification, but the coefficient on the positive component of *GOV GAP* falls from 1.310 to 0.243. In the next two regressions, we reestimate regression (5) using first the legal variable used by Durnev and Kim (2005), which is the product of the index of rule of law and of the anti-director index of LLSV (1998) (as revised in DLLS), instead of the common law dummy variable, and then the anti-self-dealing index of DLLS. We see that the same results hold—namely, the coefficient on the negative component of *GOV GAP* remains large in absolute value and significant at the

1% level, but now the coefficient on the positive component of *GOV GAP* even becomes insignificantly negative. We also estimate the regressions without the development variables since these variables are obviously correlated with the legal variables. When we do so, the self-dealing index becomes closer to being significant (t -statistic of 1.50), but this has no impact on the coefficient on *GOV GAP*. Similarly, our results hold when we exclude the legal variables and include only the development variables.

Our regressions suggest that when country-level investor protection is good, there is no independent relation between internal governance mechanisms and firm value. However, investor protection fails to explain the relation between the negative governance gap and firm value. Our regressions do not support the hypothesis that there is an optimal level of internal governance determined by a country's level of investor protection alone after controlling for firm characteristics. All the results in this section suggest that firm value increases when a firm's governance index shortfall relative to its matching U.S. firm falls. The interpretation of this result is that firms are worth more when their controlling shareholders find it optimal to invest more in governance and that the amount they choose to invest in governance is not determined by their country's investor protection alone. This result is consistent with the hypothesis that how much controlling shareholders choose to invest in governance depends on their wealth and preferences as well as on firm and country characteristics. Our results do not imply that a greater investment in governance would make controlling shareholders better off, but they are consistent with the hypothesis that minority shareholders would be better off if firms with controlling shareholders were to invest more in corporate governance.

5. Individual Governance Attributes

So far, we have focused on the governance index and the relation between firm value and that index. When academics and other observers focus on corporate governance, they do not pay close attention to forty-four attributes. Instead, they tend to focus on a handful of attributes that draw considerable attention. Therefore, we also consider individual governance attributes that we believe have received the most attention in the academic literature and from observers. Admittedly, the choice of these attributes is arbitrary. The seven attributes include *Board Independence*: board is controlled by more than 50% independent outside directors; *Board Size*: the board has more than five members but less than sixteen; *Chairman/CEO Separation*: chairman and CEO are separated or there is a lead director; *Board Structure*: annually elected board (no staggered board); *Audit Committee Independence*: audit committee composed solely of independent outsiders; *Auditor Ratification*: auditors ratified at most recent annual meeting; and *Stock Classes*: only one class of common stock (no dual class).

Table 7
Individual attributes by country and differences from the United States

Country	Board Independence	Board Size	Chairman/CEO Separation	Board Structure	Audit Committee Independence	Auditor Ratification	Stock Classes
Australia	39%	88%	97%	1%	24%	12%	98%
Austria	0%	67%	100%	0%	0%	100%	100%
Belgium	25%	85%	60%	0%	20%	5%	95%
Canada	91%	94%	95%	98%	91%	98%	68%
Denmark	71%	79%	100%	64%	7%	100%	57%
Finland	64%	80%	100%	84%	40%	100%	68%
France	28%	78%	49%	2%	22%	35%	38%
Germany	40%	82%	100%	0%	3%	100%	100%
Greece	3%	90%	90%	3%	7%	97%	100%
Hong Kong	8%	89%	63%	4%	56%	100%	100%
Ireland	30%	70%	90%	0%	20%	90%	100%
Italy	0%	87%	77%	0%	3%	33%	100%
Japan	1%	80%	0%	42%	2%	2%	100%
The Netherlands	83%	73%	98%	7%	54%	51%	68%
New Zealand	17%	92%	100%	0%	8%	75%	100%
Norway	69%	46%	100%	23%	15%	0%	100%
Portugal	43%	100%	43%	0%	0%	14%	86%
Singapore	34%	100%	84%	0%	40%	100%	100%
Spain	6%	80%	60%	3%	6%	89%	100%
Sweden	60%	97%	100%	100%	17%	14%	66%
Switzerland	75%	81%	98%	19%	58%	98%	98%
United Kingdom	32%	90%	96%	8%	68%	99%	99%
United States	89%	81%	41%	52%	88%	68%	94%

The table represents the percentage of firms in each country that meet or exceed the minimum satisfactory threshold for each governance attribute. The seven attributes are: *Board Independence*: board is controlled by more than 50% independent outside directors; *Board Size*: board size is at greater than 5 but less than 16; *Chairman/CEO Separation*: chairman and CEO are separated or there is a lead director; *Board Structure*: annually elected board (no staggered board); *Audit Committee Independence*: audit committee composed solely of independent outsiders; *Auditor Ratification*: auditors ratified at most recent annual meeting; and *Stock Classes*: only single class, common stock (no dual class). Italics are used if the mean difference in the attribute for a country with the United States is negative and statistically significant at the 5% level. If the difference is positive and significant, it is shown in bold. Significance is not reported if 0% or 100% of firms satisfy an attribute in a country.

We report in Table 7 the country averages for the seven governance attributes. We see in that table that U.S. firms rate highly on board independence and audit committee independence. In contrast, as expected, U.S. firms tend to rate poorly compared with most countries on the separation of the functions of the chairman of the board and of the CEO. Though most countries have a lower proportion of firms without a staggered board than the United States, four countries (Canada, Denmark, Finland, and Sweden) have a much higher proportion of such firms than the United States. More than half of the countries have a higher proportion of firms than the United States meeting the minimum satisfactory threshold for board size. Finally, fifteen countries have a higher percentage of firms with one class of stock than the United States.

Are these governance attributes related to firm value? Or, to put it differently and to use an example, are the foreign firms that separate the functions of chairman of the board and of CEO worth more? To examine this issue, we reestimate the second regression of Table 6 in two different ways. First, we reestimate the regression substituting individual governance attributes for *GOV*.

Table 8
Individual governance attributes and differences in firm value based on U.S. matched firms

	<i>Board Independence</i>	<i>Board Size</i>	<i>Chairman/CEO Separation</i>	<i>Board Structure</i>	<i>Audit Committee Independence</i>	<i>Audit Ratification</i>	<i>Stock Classes</i>
Panel A: Regressions using individual governance attributes							
<i>ATTRIBUTE_US</i>	0.086 (0.95)	0.239 (0.83)	-0.012 (0.21)	0.028 (0.26)	0.004 (0.02)	0.097 (1.67)*	0.095 (0.52)
<i>NEGATIVE GAP</i>	0.225 (6.27)***	-0.037 (0.61)	-0.039 (0.66)	-0.004 (0.04)	0.171 (3.00)***	0.145 (2.02)*	0.084 (1.22)
<i>POSITIVE GAP</i>	0.107 (0.75)	0.286 (0.91)	0.057 (1.03)	0.077 (0.87)	0.384 (2.00)*	0.066 (0.75)	0.158 (0.86)
Adjusted <i>R</i> -squared	0.37	0.37	0.37	0.37	0.38	0.37	0.37
Panel B: Regression using all seven attributes							
<i>ATTRIBUTE_US</i>	0.069 (0.74)	0.191 (0.68)	0.014 (0.16)	-0.002 (0.04)	-0.053 (0.31)	0.133 (2.23)**	0.102 (0.52)
<i>NEGATIVE GAP</i>	0.190 (4.22)***	-0.038 (0.61)	-0.005 (0.05)	-0.032 (0.62)	0.111 (1.76)*	0.171 (2.08)**	0.076 (0.93)
<i>POSITIVE GAP</i>	0.040 (0.34)	0.246 (0.80)	0.058 (0.72)	0.046 (0.96)	0.340 (1.79)*	0.098 (1.05)	0.146 (0.74)
Adjusted <i>R</i> -squared	0.37						

The table shows the relation between firm value (Tobin's *q*, which is winsorized at 1% and 99%) and differences in individual governance attributes between a foreign firm and a matched U.S. firm based on industry and propensity scores obtained from a probit analysis. The seven attributes are: *Board Independence*: board is controlled by more than 50% independent outside directors; *Board Size*: board size is at greater than 5 but less than 16; *Chairman/CEO Separation*: chairman and CEO are separated or there is a lead director; *Board Structure*: annually elected board (no staggered board); *Audit Committee Independence*: audit committee composed solely of independent outsiders; *Auditor Ratification*: auditors ratified at most recent annual meeting; and *Stock Classes*: only one class of common stock. Panel A reports results from seven different models that include one attribute at a time. Panel B reports results from one model that includes all seven attributes at the same time. *ATTRIBUTE_US* is the governance attribute for the matched U.S. firm. *NEGATIVE GAP* and *POSITIVE GAP* are the governance gap of a firm from its matching U.S. counterpart if negative and if positive, respectively. The following control variables are included but their coefficients are not reported here: *SIZE* (natural log of total assets); *SGROWTH* (sales growth), *R&D/SALES*, *FOREIGN SALES/SALES* are two-year averages and are winsorized at 1% and 99%; *CASH/ASSETS*, *CAPEX/ASSETS*, *PPE/SALES*, *EBIT/SALES*, and *DEBT/ASSETS* are also included. *CLOSELY HELD* is the percentage of shares closely held, and *ADR* dummy equals 1 if the firm is cross-listed in the United States. All regressions include industry dummies and country fixed effects, and standard errors are corrected for country-level clustering. *, **, and *** reflect significance at the 10%, 5%, and 1% levels, respectively. Number of observations is 1584 for each model.

Second, we reestimate the regression including all the individual governance attributes. As in Table 6, we use the governance attribute of the matching firm, the positive governance gap, and the negative governance gap.

Panel A of Table 8 shows the regression estimates when we introduce one individual attribute at a time. We see that separation of the functions of chairman of the board and CEO is not related to firm value. Neither are board size and stock classes. Board independence is significantly related to firm value. A firm whose board does not meet the board independence requirement is worth less when its matching U.S. firm meets that requirement. Our evidence is related to the evidence of Dahya, Dimitrov, and McConnell (2008). They find that board independence is positively related to firm value in the countries with poor investor protection when firms have a controlling shareholder. However, their

sample includes less developed countries in contrast to ours.⁷ We find that board independence is positively related to firm value for developed countries as well. The strength of the board independence result is surprising in light of the U.S. evidence, which fails to find a strong relation between board independence and firm value.⁸ However, one should view the strength of the relation with caution since the estimate could be biased because of endogeneity. Unfortunately, the two-stage least squares approach implemented in the previous section does not seem practical with the regressions used in this section because the variable we would be instrumenting can take only a value of 0 or 1. Not having a staggered board when the matching U.S. firm has a staggered board is also associated with higher value. Bebchuk and Cohen (2005) document the costs associated with entrenched boards. We also find that audit committee independence is associated with higher value. Finally, not having auditors ratified at the most recent annual meeting when the matching U.S. firm has is costly, but having auditors ratified at the most recent annual meeting when the matching U.S. firm has not does not lead to higher firm value. Panel B of Table 8 shows the estimates for the coefficients of the individual governance attributes when all the attributes are included as explanatory variables. The same coefficients are significant as in the regressions with the individual attributes.

6. Alternative Specifications

In this section, we investigate the robustness of the results presented so far. We present some of the results of the investigation in Table 9.

Our analysis has focused on comparing the governance of foreign firms to the governance of matching U.S. firms. An alternative approach would be to compare the governance/value relation for foreign and U.S. firms. In columns (1) and (2), we report regression (1) of Table 6, in which *GOV* is the governance variable for foreign firms, and the same regression without *Closely-held*, *ADR*, and *Foreign Sales* for U.S. firms. Since the regression controls for firm characteristics, the coefficient of *GOV* is a measure of the value relevance of internal governance given firm characteristics. We see that the coefficient of *GOV* is positive and significant in both regressions.

A concern is that only selected firms have a *GOV* index. We investigate (but do not report regression estimates) whether the significance of the *GOV* index could be accounted for by a selection bias. Using all firms for which data are available on Worldscope to estimate regression (1), we estimate a probit regression for which the dependent variable is 1 if the firm has a *GOV* index. The

⁷ Our sample differs from theirs also because we do not limit firms to those with a controlling shareholder and because we have many more firms than they do.

⁸ See Bhagat and Black (2002).

Table 9
Robustness estimations

	(1) Foreign firms	(2) U.S. firms	(3) Foreign firms	(4) Size & Ind Matched	(5) Foreign Ex. Japan	(6) Foreign Ex. U.K.	(7) Foreign Ex. Canada	(8) Median Industry q
<i>GOV</i>	1.269 (3.75)***	1.094 (3.35)***						
<i>GOV GAP</i>			0.515 (2.64)***					
<i>GOV US</i>			0.383 (1.13)	1.248 (1.98)*	1.170 (2.71)**	0.595 (1.18)	0.904 (1.91)*	0.874 (2.16)**
<i>NEGATIVE GAP</i>				1.162 (3.10)***	1.578 (4.53)***	1.184 (2.17)**	1.090 (3.38)***	1.284 (3.52)***
<i>POSITIVE GAP</i>				2.264 (3.48)***	1.382 (1.23)	0.222 (0.26)	2.687 (3.75)***	1.285 (1.15)
Median Industry q								0.606 (5.38)***
Adjusted R-squared	0.37	0.29	0.38	0.37	0.34	0.38	0.38	0.36
Number of observations	1584	2325	1584	1584	1104	1183	1473	1584

The relationship between firm value and differences in governance between a foreign firm and a matched U.S. firm is estimated. *GOV* is the governance index for the foreign firm, and *GOV_US* is the index for the matched U.S. firm based on forty-four governance attributes. *NEGATIVE GAP* and *POSITIVE GAP* are the governance gap from the U.S. matched firm if negative and if positive, respectively. *GOV₇ GAP* is the governance gap of a foreign firm from its matching U.S. counterpart based on seven governance attributes. The regressions include firm-specific controls. Firm-level controls are (coefficients not reported): *SIZE* (natural log of total assets); *SGROWTH* (sales growth), *R&D/SALES*, *CASH/ASSETS*, *CAPEX/ASSETS*, *PPE/SALES*, *EBIT/SALES*, *DEBT/ASSETS* for all regressions. In addition, for the foreign firms, we include *FOREIGN SALES/SALES*, *CLOSELY HELD*, and the *ADR* dummy as controls. *Median Industry q* is global median q for the firm's industry. All regressions include industry dummies (except for regression (8)) and country fixed effects (except for regression (2)). Standard errors are corrected for country-level clustering (t -statistics are in parentheses). *, **, and *** reflect significance at the 10%, 5%, and 1% levels, respectively.

explanatory variables are a firm's asset size and its number of employees. Using Heckman's two-stage approach, we find that the *GOV* index is still significant when we account for selection.

In regression (3), we use an index which adds up the seven governance attributes discussed in Section 6 as our governance index and call this index *GOV*₇. *GOV*₇ *GAP* is defined as the difference between a firm's *GOV*₇ index value and the index value of its matching U.S. firm. We see that the coefficient on *GOV*₇ *GAP* is positive and significant, but smaller than the coefficient on *GOV GAP*, as reported in Table 6, using all forty-four governance attributes.

All the results discussed so far on the relation between internal governance and firm value used a specific propensity score model. In regression (4), we use an alternative matching approach that does not rely on the propensity score. For each foreign firm, we choose as a matching firm the U.S. firm in the same industry that has the closest amount of assets. We see that the results are similar to the results obtained when we use propensity matching. We also estimate different propensity score models but do not report the results in the table. In particular, the literature has used different measures of leverage when comparing firms across countries (see, for instance, Rajan and Zingales 1995). Using different measures of leverage does not alter our conclusions. It is important to note, however, that the significance and magnitude of the coefficient on the *positive* governance gap in our *q* regressions are sensitive to the matching procedure. In contrast, the significance of the coefficient on the negative governance gap is robust across all our investigations. It follows that one should be cautious in making too much of the results that there is no positive relation between a positive governance gap and firm value.

A legitimate concern is whether our results depend on the inclusion of some countries with a large number of firms in our sample. In particular, the three countries with the largest number of firms, in descending order, are Japan, the United Kingdom, and Canada. We estimate our regressions removing one of these countries at a time (in columns (5)–(7) of Table 9). It is immediately clear that removing one of these countries has no impact on our conclusions.

So far, our regressions have not controlled for a valuation benchmark. We would expect a firm to be worth more if it is in an industry that has a higher *q*. We add as an explanatory variable the median *q* of the firm's industry globally in column (8). We find that our results are essentially the same with that added variable.

7. Conclusion

In this article, we compare the governance of foreign firms to the governance of comparable U.S. firms using propensity scores. We find that it is quite important, when comparing the governance of foreign firms and U.S. firms, to do so by comparing apples to apples—namely, firms with similar characteristics. Comparisons based on country averages of firm-level governance indices

understate the magnitude of the differences in investment in firm-level governance across countries because small firms, which typically invest less in internal governance, are overweighted in the United States. We call the difference in governance between a foreign firm and its matching U.S. firm the governance gap. For the typical foreign firm, the governance gap is negative, meaning that the foreign firm invests less in internal governance than its matching U.S. firm. A foreign firm is much less likely to have a negative governance gap in a country with good investor protection. In other words, there is clear evidence that investment in internal governance and investor protection are complements rather than substitutes.

We find that the governance gap is strongly related to firm value. Firms that invest less in internal governance than their matching U.S. firm are worth less, and their value shortfall increases with their internal governance investment shortfall. We conclude that a firm's underinvestment in governance compared with its matching U.S. firm cannot be explained by unobserved firm characteristics that would make it optimal for the foreign firm to invest less in internal governance. With our experimental design, an endogeneity explanation for our result based on firm characteristics would require a systematic bias in the ability of observed firm characteristics to explain internal governance and firm value in foreign countries compared with the firms in the United States. In other words, foreign firms that invest less in internal governance than U.S. firms would have some unobserved characteristics not present in their matching U.S. firms that make such a lower investment optimal. Such an explanation seems implausible. A more plausible explanation is that the underinvestment in governance is driven by country characteristics.

Country characteristics therefore play an extremely important role in explaining why the typical foreign firm invests less in internal governance than its matching U.S. firm. Our results suggest that country-level investor protection is a crucial determinant in the intensity of investment in internal governance, so that the ability of controlling shareholders to extract private benefits from firms plays a critical role in their evaluation of the benefits and costs of investments in internal governance. However, neither investor protection nor other country characteristics completely explain the relation between a firm's internal governance investment and its value. It could be that our proxies and regression specifications fail to identify the channel through which country characteristics exogenously lead to an optimal level of internal governance. As discussed earlier, it might be that laws and regulations imposing specific choices of governance attributes explain why a firm in a given country has certain governance attributes. Most likely, culture and norms play a role in a firm's governance practices and, more important, could to some extent, with reputation, substitute for some formal governance attributes.⁹ Ultimately,

⁹ See, for instance, Coffee (2001) for the role of norms, Stulz and Williamson (2003) for the role of culture, and Allen, Qian, and Qian (2005) for the role of reputation.

however, firms underinvest in internal governance because doing so is optimal for their controlling shareholder and suboptimal for their minority shareholders. An increase in a typical foreign firm's investment in internal governance would make minority shareholders better off but would not make its controlling shareholder better off. Further, in countries that place greater weight on the interests of nonshareholder stakeholders, an improvement in internal governance might also adversely affect these stakeholders.

The findings of this article raise a number of additional questions for future research. The article documents that there is large variation in governance around the world. In future research it will be interesting to examine whether firms that have stronger governance make better investment decisions and if this strength is reflected in the quality and quantity of investments made. There is also the issue of examining differences in financing methods between firms that have strong versus weak governance.

References

- Aggarwal, R., and R. Williamson. 2006. Did New Regulations Target the Relevant Corporate Governance Attributes? Working Paper, Georgetown University.
- Allen, F., J. Qian, and M. Qian. 2005. Law, Finance, and Economic Growth in China. *Journal of Financial Economics* 77:57–116.
- Arcot, S., and V. Bruno. 2006. One Size Does Not Fit All, after All: Evidence from Corporate Governance. Working Paper, London School of Economics.
- Bebchuk, L., and A. Cohen. 2005. The Costs of Entrenched Boards. *Journal of Financial Economics* 78:409–33.
- Bebchuk, L., A. Cohen, and A. Ferrell. Forthcoming. What Matters in Corporate Governance? *Review of Financial Studies*.
- Becht, M., P. Bolton, and A. Roëll. 2003. Corporate Governance and Control. In G. Constantinides, M. Harris, and R. Stulz (eds.), *Handbook of the Economics of Finance*. Amsterdam: North-Holland.
- Bhagat, S., and B. Black. 2002. The Non-correlation between Board Independence and Long-Term Firm Performance. *Journal of Corporation Law* 27:231–73.
- Brown, L., and M. Caylor. 2006. Corporate Governance and Firm Valuation. *Journal of Accounting and Public Policy* July–Aug.:409–34.
- Bruno, V., and S. Claessens. 2007. Corporate Governance and Regulation: Can There Be Too Much of a Good Thing? Working Paper #WPS 4140, World Bank Policy Research.
- Chhaochharia, V., and L. Laeven. 2007. The Invisible Hand of Corporate Governance. Working Paper, International Monetary Fund.
- Coffee, J. 2001. Do Norms Matter? A Cross-Country Evaluation. *University of Pennsylvania Law Review* 2151–77.
- Conniffe, D., V. Gash, and P. O'Connell. 2000. Evaluating State Programmes: "Natural Experiments" and Propensity Scores. *Economic and Social Review* 31:283–308.
- Dahya, J., O. Dimitrov, and J. McConnell. 2008. Dominant Shareholders, Corporate Boards and Corporate Value: A Cross-Country Analysis. *Journal of Financial Economics* 87:73–100.
- Denis, D., and J. McConnell. 2003. International Corporate Governance. *Journal of Financial and Quantitative Analysis* 38:1–36.

- Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer. 2008. The Law and Economics of Self-Dealing. *Journal of Financial Economics* 88:430–65.
- Doidge, C., G. Karolyi, and R. Stulz. 2004. Why Foreign Firms That List in the U.S. Are Worth More. *Journal of Financial Economics* 71:205–38.
- Doidge, C., A. Karolyi, and R. Stulz. 2007. Why Do Countries Matter so Much for Corporate Governance? *Journal of Financial Economics* 86:1–39.
- Drucker, S., and M. Puri. 2005. On the Benefits of Concurrent Lending and Underwriting. *Journal of Finance* 60:2763–99.
- Durnev, A., and E. Kim. 2005. To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation. *Journal of Finance* 60:1461–93.
- Francis, J., I. Khurana, and R. Pereira. 2005. Disclosure Incentives and Effects on Cost of Capital around the World. *Accounting Review* 80:1125–62.
- Fulghieri, P., and M. Suominen. 2006. Corporate Governance, Finance, and the Real Sector. Working Paper, University of North Carolina, Chapel Hill.
- Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate Governance and Equity Prices. *Quarterly Journal of Economics* 118:107–55.
- Hermalin, B., and M. Weisbach. 2003. Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature. *Economic Policy Review* 9:7–26.
- John, K., and S. Kedia. 2006. Institutions, Markets and Growth: A Theory of Comparative Corporate Governance. Working Paper, New York University.
- John, K., L. Litov, and B. Yeung. 2008. Corporate Governance and Risk Taking. *Journal of Finance* 63:1679–728.
- La Porta, R., F. Lopez-De-Silanes, and A. Shleifer. 1999. Corporate Ownership around the World. *Journal of Finance* 54:471–517.
- La Porta, R., F. Lopez-De-Silanes, A. Shleifer, and R. Vishny. 1998. Law and Finance. *Journal of Political Economy* 106:1113–55.
- La Porta, R., F. Lopez-De-Silanes, A. Shleifer, and R. Vishny. 2000. Agency Problems and Dividend Policies around the World. *Journal of Finance* 55:1–33.
- Rajan, R., and L. Zingales. 1995. What Do We Know about Capital Structure? Some Evidence from International Data. *Journal of Finance* 50:1421–60.
- Rajan, R., and L. Zingales. 1998. Financial Dependence and Growth. *American Economic Review* 88:559–86.
- Rosenbaum, P., and D. Rubin. 1983. The Central Role of the Propensity Score in Observational Studies for Causal Effects. *Biometrika* 70:41–55.
- Rubin, D. 1997. Estimating Causal Effects from Large Data Sets Using Propensity Scores. *Annals of Internal Medicine* 127:757–63.
- Shleifer, A., and R. Vishny. 1997. A Survey of Corporate Governance. *Journal of Finance* 52:737–83.
- Stulz, R. 1999. Globalization, Corporate Finance and Cost of Capital. *Journal of Applied Corporate Finance* 12:8–25.
- Stulz, R. 2005. The Limits of Financial Globalization. *Journal of Finance* 60:1595–638.
- Stulz, R. M., and R. Williamson. 2003. Culture, Openness, and Finance. *Journal of Financial Economics* 70:313–49.
- Wooldridge, J. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.