

DOES A COUNTRY'S FINANCIAL AND LEGAL SYSTEMS CONTEMPORANEOUSLY IMPACT THE GOVERNANCE AND PERFORMANCE RELATIONSHIP: FURTHER EVIDENCE?

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Abstract

We investigate the impact of continuous measures of the financial system and investor protection on the corporate governance-performance relationship. We find that shareholder suits rights/stock market capitalization (disclosure rights/stock market capitalization) has monotonic (non-monotonic) relation with firm performance and that high-levels of stock market capitalization and investor protection generate valuation synergies. Besides interactions of financial and legal systems with corporate governance, market- (bank-) orientation and development and stronger (weaker) investor protection along with better (worse) corporate governance are associated with higher (lower) valuations. A country's migration to a developed stock market with enhanced investor protection is related to better corporate governance and firm performance.

Keywords: Financial/Legal System, Investor Protection, Corporate Governance, Firm Performance

JEL Classification: G15, G30, G34, K40

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1 Introduction

Since the financial scandals of Enron and WorldCom in U.S., Parmalat in Europe, Satyam in India and Olympus in Japan, corporate governance has become a hotly debated topic in global academic and practitioner circles alike. The business press while reporting on abusive management practices such as fraudulent financial reporting, egregious executive compensation, and excessive risk-taking often blames such failures on the lack of good governance at such companies. Corporate governance which is essentially a system of checks and balances attempts to mitigate agency problems that inherently exist between a firm's investors and managers due to asymmetric information, and adoption of good governance practices by a firm assures the investors that their investments will not be stolen and that they may even receive a return (Berle and Means, 1932; Jensen and Meckling, 1976; Shleifer and Vishny, 1997).

Market imperfections due to asymmetric information and market frictions such as transactions, information, and monitoring costs affect a firm's

choice of corporate governance practices and thus a firm's performance (Beck et al., 2005). Since greater market imperfections are characteristics of less developed financial and legal systems (La Porta et al. 2002; Beck et al., 2005), the structure and extent of the development of a country's financial and legal systems also exerts positive or negative pressure on how effectively a firm's chosen governance structure would impact its financial and market performance.

The magnitude of the losses arising out of these financial scandals and more recently the fallout from the global financial crisis has prompted a "knee-jerk" reaction in many countries across the globe in the form of additional laws and regulations designed to strengthen corporate governance by requiring all public companies to adopt certain without deliberately considering whether their countries' financial and legal systems would aid or abet corporate governance and enhance firm performance. Consequently, one of the key questions in international corporate governance that is still unsettled is how a country's financial orientation and the strength of its legal system impact firm-level

governance and consequently firm performance.¹ Stated differently, the question to consider is to what extent a country's financial and legal structure helps or hinders firm-level governance practices in mitigating the agency problem and consequently enhancing firm performance (Agarwal and Elston, 2001; Dahya et al., 2008). Our paper, motivated by this overriding and unresolved question, investigates how different types of financial structures (i.e., market vis-à-vis bank) and legal systems (i.e., common-law vis-a-vis civil-law) affect the level of corporate governance and the consequently impact firm performance using a set of continuous country-level variables. It is well-documented in the literature that the governance-performance relationship is plagued by endogeneity constraints (Durnev and Kim, 2005; Bhagat and Bolton, 2008). Our study tackles this issue by expanding on Anderson and Gupta (2009) by using a system of simultaneous equations and an instrumental variables analysis.

More specifically, our study addresses the following research questions: (1) Do countries with market or bank financial orientations and common or civil-law-oriented investor protection regimes exhibit differences in the optimal (i.e., shareholder value maximizing) levels of firm governance?, and (2) How can firms achieve their optimal governance levels, of course, keeping in view the orientation and development of their financial market and investor protection? To answer these questions, we test the following hypotheses:

- Do the host country's financial orientation and strength of investor protection exert any monotonic influence on firm performance?
- Do the host country's financial orientation and strength of investor protection interact positively with corporate governance and exert any monotonic influence on firm performance?
- Do financial orientation and strength of investor protection interact with corporate governance to exert any non-monotonic influence on firm performance?
- Do different combinations of financial orientation and strength of investor protection have varied impact on governance-performance relationship?

Consistent with prior studies (Klapper and Love, 2004; Anderson and Gupta, 2009), after compensating for endogeneity, we confirm that a country's financial orientation and its investor protection as well as the interactions with corporate governance significantly affect firm performance. These findings have implications for understanding what drives optimal levels of corporate governance and whether it is

always appropriate for a country to further strengthen firm-level governance irrespective of the extent to which its financial and legal systems can support such a move.

Consistent with Hermalin and Weisbach (2012) our findings also suggest that shareholder suits rights/stock market capitalization have a monotonic relation with Tobin's Q, while disclosure rights/stock market capitalization have a non-monotonic relation with Tobin's Q. We find that market value synergies accrue to firms operating in a more developed and market-oriented financial system that has stronger investor protection (i.e., common-law) and better corporate governance primarily due to the fact that an enhanced investor protection legal system regime is a precondition for a more developed and market-oriented financial system (i.e., larger stock market capitalization). Extending Anderson and Gupta (2009), the empirical evidence provided in this paper illustrates that firms operating in a market-oriented financial system with weaker investor protection (i.e., civil-law) tend to experience positive valuation effects. The significantly positive firm valuation effect with market-orientation and weaker investor protection is not as large as the valuation premium afforded to those firms operating in a more developed financial market with stronger investor protection. Further, firms operating in bank-dominated and less financially developed systems that have weaker disclosure rights but employ better corporate governance mechanisms amass certain valuation benefits due to the fact that the financiers in bank-based financial systems acting as "delegated monitors" (Levine, 2002) are already able to effectively address weaker disclosure practices. Yet firms operating in a country characterized with bank-orientation and less developed financial markets and weaker investor protection tend to experience valuation discounts compared to firms in a more financially and legally developed system. Based on the results from the different combinations, the adoption of better corporate governance practices exerts positive pressure on market values in bank-oriented countries with weak disclosure rights or with strong shareholder suits rights. The robustness tests show that as a country migrates toward market/common-law systems firms tend to align their corporate governance practices accordingly which enhances firm performance.

This paper draws on a sample of 1519 companies from 22 countries over the period 2005-2008 to test our main hypotheses. Given that financial systems help to "exogenously" monitor managers and exercise corporate control and legal systems protect investor rights, both of them play an essential role in determining firm-level corporate governance. Building on the equilibrium interpretation of the governance-performance relationship provided by Hermalin and Weisbach (2003), we use two continuous country-level variables: (1) the extent of

¹ Research to-date exploring relationship between corporate governance and firm performance has produced mixed findings. For example, see Anderson and Gupta (2009), Bhagat and Bolton (2008), Cremers and Nair (2005), Core et al. (2004) and Gompers et al. (2003).

financial orientation and development as a continuous proxy for the market/bank classification based on the actual data and as suggested by Boyd and Smith (1998) and Demirguc-Kunt and Levine (2001) and (2) the strength of investor protection proposed by Djankov et al. (2008) as a continuous proxy for the common/civil-law classification captured by the actual data and introduced by La Porta et al. (1998). Although a country's levels of investor protection and financial development are constantly changing, this evolution has largely been ignored by other researchers. Using continuous country-level variables, our study contributes to the literature in this area as other research studies have primarily relied on the bivariate classification of countries to explore research questions in this area. The continuous country variables are very relevant for cross-country studies because they provide a thorough and contemporaneous measure of the current state of an economy. This is supported by Goldsmith (1969) who points out that, when countries develop, their financial systems transition as well.

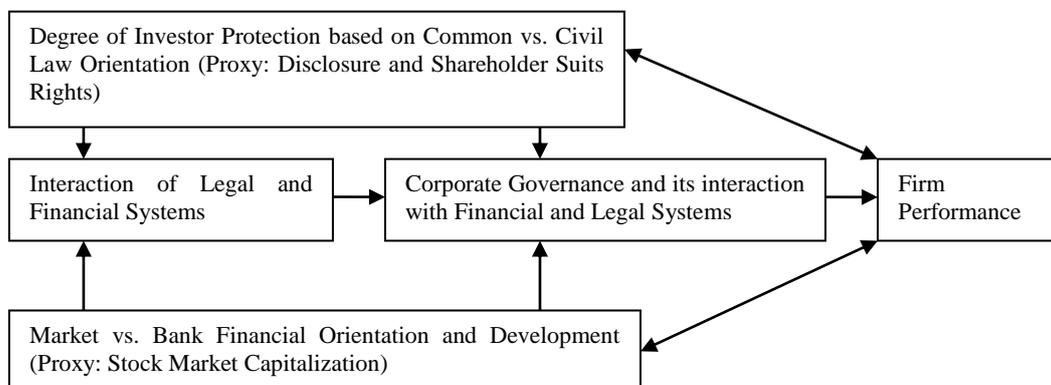
This paper contributes to the literature in several different ways. From a methodological viewpoint, first, we explicitly address the endogeneity confound through the use of simultaneous equations and instrumental variables models. Second, as opposed to using "dichotomous" variables to proxy for a country's financial and legal systems, we use continuous variables that enable us to explore the monotonic effect of financial orientation and development and investor protection on the governance-performance relationship. Third, our paper provides evidence on the governance-performance nexus in the setting of "transitioning" financial and legal systems typically characterized by a market/civil or a bank/common combination. Financial orientation and development and investor protection interact with corporate governance and play a significant role in determining the value maximizing level of corporate governance.

The remainder of the paper is organized as follows. Section II reviews the relevant literature and derives the hypotheses. Section III describes the data and the models used in the study. Section IV presents the empirical results, discusses the findings and reviews robustness checks. The last section concludes the paper including limitations of the study and avenues for future research.

2 The impact of legal and financial systems on the governance-performance nexus and hypotheses

Anderson and Gupta (2009) provide empirical evidence on the governance-performance nexus in the presence of host country's financial structure and legal system. Building on their model, Figure 1 illustrates how a country's financial and legal systems and their interaction influence firm-level corporate governance and consequently firm performance. To provide further evidence of this nexus, we employ firm-specific continuous measures instead of the bivariate measures used by them. Specifically, to proxy for the legal system we use two firm-specific continuous investor protection measures: disclosure practices and litigation by shareholders (Djankov et al. 2008). Similarly, to proxy for the financial structure of a country we use one continuous measure: stock market capitalization (Boyd and Smith (1998) and Demirguc-Kunt and Levine (2001)). Boyd and Smith (1998) illustrate that countries become more market-oriented as they go through various stages of financial development. Using a continuous measure such as stock market capitalization to proxy for the extent of financial deepening in a country allows us to capture changes in a country's financial orientation as its economy develops. Doidge et al. (2007) show that legal protections for minority investors and financial development have significant impact on adoption of corporate governance practices by affecting the costs associated with implementing corporate governance mechanisms.

Figure 1. The legal and financial systems and the corporate governance-performance nexus



A. Governance and Performance Nexus

There is a growing body of literature that focuses on how adopting better corporate governance practices impacts firm's access to external financing, its cost of capital and firm performance (Claessens, 2003; Gompers et al., 2003; Klapper and Love, 2004; Durnev and Kim, 2005; Brown and Caylor, 2004, 2006; Black and Kim, 2012). Corporate governance is concerned not only with the actual behavior of corporations (internal governance) such as board structure and allocation of decision and control rights among a firm's financiers but also with the demands placed on the firm by the normative structure (external governance) that includes demands driven by a country's legal system, financial structure, and its economic markets (Claessens, 2003).

Shleifer and Vishny (1997) conclude that there is inconclusive evidence on the extent to which corporate governance practices facilitate or impede firm performance. Concurrently, researchers have found substantial variability in the quality of corporate governance not only across countries but within a given country also (Shleifer and Vishny, 1997; Dallas, 2004; Klapper and Love, 2004; Brown and Caylor, 2006; Doidge et al., 2007; Anderson and Gupta, 2009). For example, firms operating within the Anglo-Saxon corporate governance system operate within a legal regime that provides higher-level of investor protection against expropriation by managers than firms operating in Continental Europe and Japan. According to Shleifer and Vishny (1997, p. 750), one of the primary reasons why corporate governance systems around the world vary is because managers have different legal obligations to financiers and different judicial systems interpret and enforce investor protection laws differently.

Besides taking into account different country-level factors, firms need to consider various costs associated with the implementation of corporate governance practices. First, there are "transaction costs associated with greater disclosure, including the cost of changing company charters, setting up nominating committees, paying outside directors and external auditors, and disseminating financial information to enhance corporate transparency" (Chhaochharia and Laeven, 2009, p. 406). Second, better governance imposes private costs for the controlling shareholders since they have limited ability to extract private benefits from the firm leading them to expropriate minority shareholders (Doidge et al. 2004).

Consistent with Claessens (2003), it is appropriate for cross-country corporate governance studies to investigate how differences in legal and financial systems affect the corporate governance-performance relationship. On one hand, firms could strive to improve their internal corporate governance practices to counterbalance the lack of their country's sophistication in financial and legal systems in the

hope of deriving value greater than the cost of implementing these governance practices. This suggests that after reaching an optimal level (i.e., ceiling) of corporate governance the firm will incur more costs than benefits with additional governance mechanisms. Under this scenario, firm-level corporate governance improvements send signals to markets that this is a better governed company which serves to act as a commitment device assuring investors of the firm's focus on high quality governance (Chhaochharia and Laeven, 2009). On other hand, firms might only expend the minimum resources to comply with the absolute minimal requirements imposed by their country's legal and financial systems and thus failing to adopt corporate governance mechanisms above and beyond those set by the law (Anderson and Gupta, 2009). This suggests that the host country's financial and legal systems jointly set the minimum level of corporate governance practices (i.e., floor) to be followed by a firm.

B. How Financial Systems impact Governance?

Studies show that cross-country differences in financial systems affect corporate governance, external financing and firm performance (Demircug-Kunt and Maksimovic, 1998; Anderson and Gupta, 2009). Financial orientation of a country refers the extent to which a country relies on financial instruments, markets and intermediaries to allocate capital (Demircug-Kunt and Levine, 2001).

Prior research (Beck et al., 2001) considers 4 possible explanations for the evolution of financial systems - a bank-based view, a market-based view, a law and finance view and a financial-services view. According to Levine (2002), banks have a crucial role in gathering savings, spotting superior investments and minimizing asymmetric information problems. First, banks enhance capital allocation and corporate governance by acquiring more corporate information, mitigating potential moral hazard through monitoring activities and reducing information asymmetry via establishing long-run relationships with companies. Second, banks improve investment efficiency by enhancing risk management, and third banks mobilize savings by taking advantage of greater scale economies. In bank-based countries, since the lending bank has ownership or other monopolistic power over the borrower company the bank is more likely to recover its principle along with the interest (Rajan and Zingales, 1998). Given that bank-based systems largely rely on self-governing relationships, borrower companies strive hard to honor their debt-covenants to preserve their market reputations. Doing so ensures that a firm is able to return to the markets for future financing needs. However, under this view a bank may extract more information and rents from the borrower firm resulting in a higher cost of capital that deviates from the true risk-adjusted cost for a project,

which has detrimental valuation effects for firm's shareholders.

Describing the market-based view, Levine (2002) notes that more developed stock markets are related to better capital allocation, risk-management devices and other essential functions. First, larger markets stimulate greater amount of corporate research by investors and the gathering of valuable information because investors can profit from the size and liquidity of the market. Second, stock markets provide incentives for better corporate governance practices since they facilitate the markets for takeovers of underperforming firms and link managerial compensation to firm performance. Third, stock markets enhance risk management suggested by Saint-Paul (1992) and Beck et al. (2001) and facilitate innovation. As a result, companies in market-based systems have incentives to take on larger risks and generate higher returns. Additionally, compared with banks, efficient capital markets transmit valuable information signals to investors and thus improve corporate performance. Since there is widespread information and more competition in market-based systems, this ensures a lower cost of capital for the firm.

According to Merton and Bodie (1995), the financial services view explains financial deepening in a country by underscoring the growth and development of financial contracts, markets and intermediaries designed to minimize market imperfections and improve corporate governance and control. The primary goal of the financial services view is to support both intermediaries and capital markets in the delivery of high quality financial services and in the better performance of their essential functions.

La Porta et al. (1998) describe the law and finance view as a special case of the financial services view in the context of bank-based versus market-based financial systems. Several research studies have used the law and finance view to analyze how differences in investor protection from expropriation by managers and controlling shareholders are linked to differences in financial systems (La Porta et al., 1997, 1998, 1999, 2000). Given that finance can also be viewed as a set of contracts that can be more or less effective, the financial deepening highly depends on the law and its enforcement in a country. Based on this view, a well-functioning legal system can augment the quantity and quality of financial services and matters for the adoption of sound governance practices by firms.

C. How Legal Systems impact Governance?

Cross-country differences in the degree of investor protection have an impact on governance, ownership structure, dividend policy, external financing and market valuations (Shleifer and Vishny, 1997; La

Porta et al., 1999, 2000, 2002). According to La Porta et al. (2000, p. 4) "protection of shareholders and creditors by the legal system is central to understanding the patterns of corporate finance in different countries." Given that a legal system deals with legal rights and the practices of law enforcement, a stronger legal system can improve the quality of investor protection and ameliorate investors' expropriation by corporate insiders.

While civil-law uses professional judges, written records and restrictive legal doctrines and is less flexible, common-law relies on jury trials, oral arguments and broader interpretations and is more responsive and flexible in creating new law when a country's statutes do not address a specific situation (Glaeser and Shleifer, 2002; Beck et al., 2003; Ergungor, 2004). According to Ergungor (2004), even if civil-law judges have rights to interpret law, they hardly ever exercise them. Doidge et al. (2007) and La Porta et al. (2002) contend that there are larger agency problems in countries with poor legal protection of investors because the controlling shareholders are able to extract a greater amount of wealth from minority shareholders. Earlier studies by La Porta et al. (1997, 1998) and Demirgüç-Kunt and Levine (2001) show that common-law countries tend to have better protection for shareholder rights and are increasingly associated with market-based systems, while civil-law countries tend to poorly protect shareholder rights, have weak law enforcement and are mostly associated with bank-based systems. Ergungor (2004) observes that common-law countries have flexibility in interpreting contracts which, in turn, reduces contracting costs and hence makes them more suitable to flourish under market-based systems. Compared to common-law countries, civil-law countries interpret law too literally and experience a greater likelihood of unfair verdicts, requiring banks or other financial intermediaries to more actively participate in the contracting and conflict resolution processes (Ergungor, 2004).

Concerning the relation between disclosure rights and corporate governance, the arguments by Berle and Means (1932) suggest that greater information disclosure reduces agency problems by reducing information asymmetry in the capital markets thereby allowing for lower cost of capital and increased firm value. But Hermalin and Weisbach (2012) warn that disclosure beyond a certain point can exert a downward drift on firm value as managers engage in "real-activities" manipulation to make themselves look better in the short-run than undertaking activities that would add long-term shareholder value. Further, Ball et al. (2000) argue that there exists a correlation between weaker corporate governance and weaker shareholder suits rights in civil law countries. In particular, managers in code-law jurisdictions experience greater discretion in incorporating information in their financial reports, they are monitored less by external entities, and there

is a lack of litigation costs to both managers and auditors.

D. How Financial and Legal Systems Jointly Impact Governance?

Additionally, Djankov et al. (2008, p. 431) explain that “differences in legal investor protection across countries shape the ability of insiders to expropriate outsiders, and thus determine investor confidence in markets and consequently market development” (i.e., differences in countries’ financial systems). Modigliani and Miller (1958) assess securities by their cash flows but ignore the investors’ value of the associated voting rights and the fact that these rights depend on the legal systems where the securities are issued (La Porta et al., 1998, p. 1114). Presupposing a country has a weak legal system with poor contract enforcement; investor voting rights alone will not bring about any improvements in the performance of the firm and are thus futile. Therefore, “the protection investors receive determines their readiness to finance firms” and the development of the entire financial system (La Porta et al., 1998, p. 1114).

Lending further support to the law and finance view, Beck et al., (2003) postulates that a country’s legal orientation affects developments of its financial markets through two channels: the political channel and the adaptability channel. Based on the political channel, a legal system pays more attention to the state’s power and less attention to the individual investors’ rights. The adaptability channel suggests that adaptive legal systems which can “minimize the gap between the contracting needs of the economy and the legal system’s capabilities will foster financial development more effectively than more rigid systems” (Beck et al., 2003, p. 655).

E. Hypotheses

Based on the above discussion and building on prior research we develop the following hypotheses:

- Do the host country’s level of financial development and strength of investor protection exert any monotonic influence on firm performance?
- Do the host country’s level of financial development and strength of investor protection interact positively with corporate governance and exert any monotonic influence on firm performance?
- Do degree of financial development and strength of investor protection interacted with corporate governance exert any non-monotonic influence on firm performance?
- Do different combinations of financial development and strength of investor protection

have varied impact on the corporate governance – firm performance relationship?

3 Data, Variables and Model

A. Data and Variables

We gather both firm-level and country-level data to test the hypotheses described in the previous section. We use the Corporate Governance Quotient (CGQ) published by RiskMetrics as the firm-level data source for corporate governance and Thomson Worldscope® as the firm-level financial data source. We investigate foreign firms that are based outside of the US for a number of reasons. First, RiskMetrics uses one methodology in its calculation of the corporate governance scores for foreign firms and a different methodology for US firms. So, combining the two data-sets would be less than ideal from a methodological viewpoint. Second, focusing on non-U.S. firms enables us to incorporate a wide range of countries in different continents to test our hypotheses. Third, we can directly compare and analyze the impact of corporate governance along with other variables on firm value because the RiskMetrics’ global CGQ scores are published on a consistent basis by the same organization. As a result, the study minimizes any potential bias in the CGQ scores in the assessment of cross-country governance practices of firms.

In the data collection process, we manually match the non-U.S. firms covered by RiskMetrics to the firms covered by the Thomson Worldscope® database. After performing the matching procedure, we identify 2729 companies in 22 countries. We exclude companies in five industries including utility, bank, and diversified financial, insurance and real estate because the firms in these industries operate in a different regulatory environment than other industries making it difficult to compare their financial data and governance practices to that of firms in other industries. This results in a total of 22 different industries for the sample. After eliminating companies with negative common equity and with unavailable financial data, we are left with a total of 1519 firms. Table 1, Panel A, shows the steps in the construction of our final sample of 1519 firms, covering 22 countries from 2005 to 2008. The two predominant industries are capital goods and materials and three dominant countries in the sample are Japan, U.K. and Canada. RiskMetrics issues global corporate governance scores on a monthly basis since November 2003, but we use the data from 2005 onwards because of change in the scoring scheme in the prior years. Additionally, Table 1, Panel B, gives a breakdown of the number of firms across countries.

Table 1. Sample of Firms and Number of Firms across Countries

This table reports the construction of the final sample of 1519 companies from 22 countries between 2005 and 2008 and a breakdown of the number of firms across countries.

Panel A. Sample of Firms

Number of firms covered in the CGQ database by RiskMetrics	2729
Less Banks	(109)
Less Diversified Financials	(90)
Less Insurance	(50)
Less Real Estate	(87)
Less Utilities	(64)
Less firms with negative total common equity	(56)
Less firms without corresponding financial data in Thomson One	(567)
<u>Less firms with missing some firm-level financial data in Thomson One</u>	<u>(187)</u>
Final sample of firms	1519

Panel B. Number of firms by country

	Country	N. Firms
1	Australia	62
2	Austria	17
3	Belgium	19
4	Canada	143
5	Denmark	23
6	Finland	23
7	France	63
8	Germany	70
9	Greece	24
10	Hong Kong	68
11	Ireland	12
12	Italy	41
13	Japan	428
14	Netherlands	33
15	New Zealand	12
16	Norway	20
17	Portugal	9
18	Singapore	45
19	Spain	30
20	Sweden	37
21	Switzerland	40
22	United Kingdom	300
	Total	1519

Consistent with prior studies (Hirsch and Seaks, 1993; Rountree et al., 2008; Black and Kim, 2012), we use the log of Tobin's Q as our dependent variable. As a frequently used measure of corporate valuation, Tobin's Q captures the market valuation of the firm including tangible and intangible assets such as firm's market power, patents and managerial effectiveness (Morck et al., 1988). We calculate Tobin's Q as the market value of assets divided by the book value of assets, where the market value of assets is calculated as the sum of the book value of assets and the market value of common equity less the sum of the book value of common stock and deferred taxes on the balance sheet, and where the market value of equity is the number of shares outstanding times the firm stock price at the end of the year (Kaplan and

Zingales, 1997; Gompers et al., 2003; Bebchuk and Cohen, 2005). Although the Tobin's Q ratio is an approximate Q, Cheng and Pruitt (1994) find that an approximate version of Tobin's Q accounts for more than 95% of the ratio's variability.

Our first independent variable, the composite CGQ (i.e., firm-level corporate governance score) aggregates eight different governance dimensions : (1) board, (2) audit, (3) charter/bylaws, (4) anti-takeover provisions, (5) executive and director compensation, (6) progressive practices, (7) ownership and (8) director education. RiskMetrics' rating scheme results in higher CGQ scores for firms with better corporate governance practices. Given that RiskMetrics collects corporate governance data for more than 8,000 firms in more than 31 countries, it is

the most widespread data source on corporate governance.² The CGQ scores are matched to the financial data from the previous month because RiskMetrics published new corporate governance ratings at the beginning of each month based on governance practices in place during the previous month.³

Additionally, we use three continuous country-level independent variables: one to proxy for the extent of development in a country's financial orientation and two to proxy for the strength of its legal system. Stock market capitalization as a percentage of GDP is the first proxy that represents the extent of financial orientation and development and captures the market-bank classification (Demirguc-Kunt and Levine 2001, p. 121) and Boyd and Smith (1998)). Since Levine (2002) contends that there is no universal definition of a bank- or market-based financial system, the continuous financial orientation and development variable covers both a time-variation and country-variation, which is an improvement over the dichotomous market-bank classification of countries used in previous research.

The two continuous country-level variables are a proxy for the strength of investor protection (i.e., legal system) as proposed by Djankov et al. (2008): (1) a disclosure index and (2) a shareholder suits index. The disclosure index captures the extent of transparency of related-party transactions, and the shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for corporate misconduct. Higher values on each of the two continuous variables indicate better disclosure by a firm of its related party transactions and better shareholders' ability to take a legal action against company's officers and directors. Both the disclosure and the shareholder suits index range from zero to 10, with 10 representing the highest level of investor protection through increased disclosure and better shareholders' ability to seek legal recourse. The two investor protection proxies capture the common-civil law dichotomous classification proposed by La Porta et al. (1998, pp. 1130-31). Combining French-, German-, and Scandinavian-origin in one civil-law group is consistent with La Porta et al. (2002, p. 1161).⁴ Each of the continuous investor protection variables has both time-variation and country-variation representing

an improvement over the bivariate classification of countries using common- and civil-law classification.

The advantage of four years of time-series data over cross-sectional data is that we can capture the time-variation in the variables which helps us to understand whether changes in the country level financial structure and investor protection are associated with changes in firm performance. Additionally, we use the median, consistent with Demirguc-Kunt and Levine (2001), to classify countries to different groups as follows: market-orientation with strong investor protection is "high-high", market-orientation with weak investor protection is "high-low", bank-orientation with strong investor protection is "low-high", and bank-orientation with weak investor protection is "low-low". The motivation to employ this classification scheme is to enable us to examine non-monotonic effects and differentiate between countries that are close to each other but still have important structural differences.

We also incorporate a number of additional firm-level variables that can potentially affect Tobin's Q to control for possible endogeneity problems. As a proxy for firm size, we use the log of the total value of assets in millions of U.S. dollars. Since larger firms have a greater likelihood of higher book-to-market ratios, we expect a negative sign on size (Durnev and Kim, 2005). Sales growth is the percentage growth in sales calculated as the ratio of the change in sales during the current period to the previous period's total sales. Sales growth controls for the growth rate of the firm and the profitability of its investment opportunities. We expect a positive sign on sales growth. Leverage is measured by the ratio of total liabilities to total assets, which indicates the amount of debt used by a firm. Consistent with Jensen and Meckling (1976), we expect a negative sign on leverage.

Consistent with Anderson and Gupta (2009), the pretax margin is a pretax profit margin calculated as earnings before taxes divided by total sales and controls for firm profitability because better performing firms may have better governance. Capital expenditures measures the firm's capital used to acquire or upgrade fixed assets divided by total sales and controls for the size and occurrences of firm investment opportunities. According to Durnev and Kim (2005) when firms have better investment opportunities, they tend to practice better corporate governance. External finance is calculated as the difference between the actual growth rate of total assets and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals ROE divided by one minus ROE. An earlier study by Demirguc-Kunt and Maksimovic (1998) claimed that profitable companies need less external financing since they generate more capital internally. In contrast, Durnev and Kim (2005) show that profitable firms could require greater external

² RiskMetrics Front Office Website: https://frontoffice.riskmetrics.com/wiki/index.php/Index_CGQ. A number of recent studies use CGQ data in their analysis including Doidge et al. (2007) and Chhaochharia and Laeven (2009).

³ For instance, the December 2007 financial data are matched to the corporate governance data from January 2008.

⁴ Additional details on the components of the indices can be found in the appendix.

financing to fund their lucrative investment opportunities. To successfully obtain the external funds, those firms will need to have better corporate governance structures. Using the above variables, we isolate the degree of external financing from the occurrences of investments and the profitability of the firm and its investment opportunities.

Further, the quick ratio is calculated as current assets minus inventories divided by current liabilities and captures the ability of a firm to meet its short-term liabilities with liquid assets. As a proxy for short-term liquidity, the quick ratio measures the amount of internal funds available to the firm. Investors normally prefer larger quick ratios because they measure the firm's ability to pay off its short term debt obligations and still fund its operations. The research and development expenses variable divided by sales variable controls for differences in the use of intangible assets. Durnev and Kim (2005) demonstrate that the size of intangible resources have a relation to the cost of diversion. As intangible resources are associated with more opportunistic behavior and are more difficult to monitor, firms using those resources may implement more or less corporate governance mechanisms. Dividend per share, as explained by Banerjee et al. (2007), accounts for the market liquidity of the firm. The above control variables mitigate the time-varying performance effects associated with Tobin's Q.⁵

In addition to the variables discussed above, we incorporate several other country-level independent variables. Foreign national debt represents the risk rating for foreign national debt in a given year provided by ICRG (International Country Risk Guide), where higher rating values indicate lower risk. ICRG first calculates the annual gross foreign debt in U.S. dollars as a percentage of GDP in U.S. dollars, and then it assigns risk points on a scale from zero (most risk) to 10 (less risk). The corruption index by ICRG measures the degree of corruption within the political system, ranging from zero (high risk of corruption) to 6 (low risk). Log (GDP per capita constant 2000 U.S. dollars) and GDP growth are from the World Bank's WDI (World Development Indicators) database. The national variables control for differences in the relative risk and institutional profiles of countries. With the exception of log of assets, dividend per share and most of the country variables, the other control variables are expressed as ratios. Given that firms may report an identical business operation following different accounting standards, using ratios can ameliorate the effect of country specific differences in accounting standards.⁶

Descriptive statistics of the variables are reported in Table 2. Panel A presents summary financial statistics, Panel B presents firm performance and corporate governance statistics and Panel C presents economic and country variables. Based on the descriptive statistics, the average firm in our sample has total assets of \$9.65 billion dollars, a sales growth of 12.50%, a leverage ratio of 53.17%, a pretax margin of 6.17%, a ratio of capital expenditure to sales of 11.40%, external financing needs of 0.021%, a quick ratio of 135%, a ratio of research and development to sales of 5.21% and pays approximately \$0.99 per share in dividends. As reported in Panel B, the mean of the log of Tobin's Q is 0.3643 with substantial variation from -0.17 in the 10th percentile to 1.01 in the 90th percentile, and the average CGQ score is roughly 32.71 with large variations between 9.00 in the 10th percentile to 59.00 in the 90th percentile. The CGQ scores for different combinations of high- or low-level of stock market capitalization and high- or low-level of disclosure index or shareholder suits index are also reported in Table 2, Panel B. The CGQ scores for various high-low combinations of stock market capitalization and disclosure index follow the expected trend with highest scores (46.75) for high levels of both stock market capitalization and disclosure index and lowest scores (17.75) for low levels of both stock market capitalization and disclosure index. However, the CGQ scores for various high-low combinations of stock market capitalization and shareholder suits index do not follow the expected pattern as highest CGQ (49.22) relates to high level of stock market capitalization but a low level of shareholder suits index. Similarly, the lowest CGQ score (14.59) is associated with low level of stock market capitalization but a high level of shareholder suits index.

Table 2, Panel C, presents the economic and country-level variables. For the 22 countries represented in our sample, the average stock market capitalization as a percentage of GDP is 135.89%, and the average values for the disclosure index and the shareholder suits index are 7.501 and 7.048, respectively. However, the degree of variation in the disclosure index is more (5.0 for the 10th percentile to 10.0 for the 90th percentile) than the degree of variation in the shareholder suits index (5.0 for the 10th percentile to 8.0 for the 90th percentile). According to ICRG, the average ratio foreign national debt to GDP is 7.08 and the average corruption index is 4.05. For the sample period, the 22 countries have a mean per capita GDP in constant 2000 U.S. dollars of about \$29,365, and their economies grew at an annual average rate of 2.22%.

⁵ When R&D expenses, dividend per share, and deferred taxes on the balance sheet are not available, the three variables are set equal to zero.

⁶ A complete list of variables and their definitions can be found in the appendix.

Table 2. Summary Statistics

This table reports summary statistics of firm characteristics, performance, corporate governance, and country-level variables for 1519 companies between 2005 and 2008. Log (assets) is the log of the total value of assets in millions of USD. Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period. Leverage is the ratio of total liabilities to total assets. Pretax margin is the pre-tax profit margin calculated as [EBT / total sales]. Capital expenditure / Sales are the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales. External finance is calculated as the difference between the actual growth rate of total assets and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals $[ROE/(1-ROE)]*100$ and assuming constant ratios of short-term and long-term debt to assets. Quick ratio is calculated as $[(\text{current assets} - \text{inventories}) / \text{current liabilities}]$. R&D / Sales are the research and development expenses divided by sales. Dividend per share is the amount of dividend per share. Log (Tobin's Q) is the log of the market value of assets divided by the book value of assets, where the market value of assets is calculated as the sum of the book value of assets and the market value of common equity less the sum of the book value of common stock and deferred taxes on the balance sheet. CGQ score is the RiskMetrics corporate governance quotient. Stock market cap. is the stock market capitalization divided by GDP and is a proxy for the financial orientation and development of the country. The disclosure index represents the extent of transparency of related-party transactions, and the shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better disclosure index and a better shareholder suits index. Foreign national debt is the risk rating for foreign national debt in a given year from ICRG, where higher rating values indicate lower risk. The corruption index by ICRG measures the degree of corruption within the political system, where higher values indicate less corruption. Log (GDP per capita constant 2000 US\$) and GDP growth are from the World Bank's WDI database. When R&D expenses, dividend per share, and deferred taxes on the balance sheet are not available, the three variables are set equal to zero.

Variable	N. obs.	Mean	Std. Dev.	10th Percentile	90th Percentile
<i>Panel A. Financial Statistics</i>					
Log (assets)	4902	7.9075	1.5764	5.9752	9.9487
Sales growth	4902	12.5026	35.0498	-12.4689	36.2648
Leverage	4902	53.1733	19.0135	25.8091	77.0972
Pretax margin	4902	6.1747	236.5834	0.0603	24.5295
Capital expenditure / Sales	4902	11.3988	136.7322	1.2230	17.4559
External finance	4902	0.0207	509.5102	-33.5632	24.5959
Quick ratio	4902	1.3552	1.3855	0.5472	2.3080
R&D / Sales	4902	0.0521	0.7529	0.0000	0.0603
Dividend per share	4902	0.9911	5.4950	0.0000	1.4620
<i>Panel B. Firm Performance and Corporate Governance</i>					
Log (Tobin's q)	4902	0.3643	0.5027	-0.1740	1.0140
CGQ score	4902	32.7132	20.5658	9.0000	59.0000
CGQ of high levels of stock market cap. and disclosure index	2018	46.7542	15.8181	24.8000	63.7000
CGQ of low levels of stock market cap. and disclosure index	2102	17.7546	14.6099	5.7000	39.9000
CGQ of low level of stock market cap. and high level of disclosure index	325	33.7640	18.2214	11.7000	53.2000
CGQ of high level of stock market cap. and low level of disclosure index	457	38.7676	16.6803	16.1000	58.0000
CGQ of high levels of stock market cap. and shareholder suits index	759	36.3798	16.6256	14.1000	56.1000
CGQ of low levels of stock market cap. and shareholder suits index	1055	26.8076	19.8942	0.3000	49.3000
CGQ of low level of stock market cap. and high level of shareholder suits index	1372	14.5856	9.4307	6.9000	20.5000
CGQ of high level of stock market cap. and low level of shareholder suits index	1716	49.2159	14.4702	30.5000	64.0000
<i>Panel C. Economic and Country Variables</i>					
Stock market cap.	4902	135.8855	90.5552	60.8387	174.4164
Disclosure index	4902	7.5010	2.4346	5.0000	10.0000
Shareholder suits index	4902	7.0475	1.3444	5.0000	8.0000
Foreign national debt	4902	7.0843	1.3018	5.0000	8.5000
Corruption Index	4902	4.0490	0.8529	3.0000	5.0000
Log (GDP per capita constant 2000 US\$)	4902	10.2876	0.2651	10.0659	10.6086
GDP growth	4902	2.2237	1.7707	-0.7000	3.8252

B. Models

We use different econometric models to test our hypotheses. Country-year clustered standard errors are used in the models to control for time-series dependence (Petersen, 2009). To test the first

$$y_{it} = \alpha + \beta_1 CG_{it} + \beta_2 F_{it} + \beta_3 FL_{it} + \beta_4 L_{it} + \beta_5 X_{it} + \gamma_k + \mu_j + \nu_t + e_{it} \quad (1)$$

where y_{it} represents the vector of the log of Tobin's Q, α is the constant term, β_i are vectors of coefficients, CG_{it} is a vector of corporate governance scores, F_{it} is a vector of financial orientation, L_{it} is a vector of the legal system, FL_{it} is a vector of the interaction term between F_{it} and L_{it} , X_{it} is a matrix of explanatory variables including both firm-level and country-level variables, γ_k ($k = 1 \dots 22$) represents the industry fixed effects, μ_j ($j = 1 \dots 22$) represents the country fixed effects, ν_t ($t = 1 \dots 4$) represents the

hypothesis, whether a host country's level of financial orientation and strength of investor protection exerts any monotonic influence on firm performance, we employ the following regression model:

yearly fixed effects, e_{it} is the error term, i represents a firm and t is a year.

To test hypothesis 2, whether host country's financial orientation and strength of investor protection interact positively with corporate governance and exert any monotonic influence on firm performance, and hypothesis 3, whether financial orientation and strength of investor protection interacted with corporate governance exert any non-monotonic influence on firm performance, we employ the following regression model:

$$y_{it} = \alpha + \beta_1 CG_{it} + \beta_2 CGL_{it} + \beta_3 CGF_{it} + \beta_4 CGFL_{it} + \beta_5 F_{it} + \beta_6 FL_{it} + \beta_7 L_{it} + \beta_8 X_{it} + \gamma_k + \mu_j + \nu_t + e_{it} \quad (2)$$

where y_{it} represents the vector of the log of Tobin's Q, α is the constant term, β_i are vectors of coefficients, CG_{it} is a vector of corporate governance scores, F_{it} is a vector of the financial orientation and development without or with dummies, L_{it} is a vector of the legal system without or with dummies, FL_{it} is a vector of the interaction term between F_{it} and L_{it} , CGL_{it} is a vector of the interaction term between CG_{it} and L_{it} , CGF_{it} is a vector of the interaction term between CG_{it} and F_{it} , $CGFL_{it}$ is a vector of the interaction term among CG_{it} , F_{it} , and L_{it} , X_{it} is a matrix of explanatory variables including both firm-

level and country-level variables, γ_k ($k = 1 \dots 22$) represents the industry fixed effects, μ_j ($j = 1 \dots 22$) represents the country fixed effects, ν_t ($t = 1 \dots 4$) represents the yearly fixed effects, e_{it} is the error term, i represents a firm and t is a year.

To test hypothesis 4, whether different combinations of financial orientation and strength of investor protection interacted with corporate governance exert any non-monotonic influence on firm performance, we employ the following regression model:

$$y_{it} = \alpha + \beta_1 CG_{it} + \beta_2 FLHH_{it} + \beta_3 FLLH_{it} + \beta_4 FLLL_{it} + \beta_5 CGFLHH_{it} + \beta_6 CGFLLH_{it} + \beta_7 CGFLLL_{it} + \beta_8 X_{it} + \gamma_k + \mu_j + \nu_t + e_{it} \quad (3)$$

where y_{it} represents the vector of the log of Tobin's Q, α is the constant term, $\beta_{1 \dots 8}$ are vectors of coefficients, CG_{it} is a vector of corporate governance scores, $FLHH_{it}$ is a vector of the interaction of higher market-orientation and stronger legal system dummies, $FLLH_{it}$ is a vector of the interaction of lower market-orientation and stronger legal system dummies, $FLLL_{it}$ is a vector of the interaction of lower market-orientation and weaker legal system, $CGFLHH_{it}$ is a vector of the interaction of CG_{it} and $FLHH_{it}$, $CGFLLH_{it}$ is a vector of the interaction of CG_{it} and $FLLH_{it}$, $CGFLLL_{it}$ is a vector of the interaction of CG_{it} and $FLLL_{it}$, X_{it} is a matrix of explanatory variables including both firm-level and country-level variables, γ_k ($k = 1 \dots 22$) represents the industry fixed effects, μ_j ($j = 1 \dots 22$) represents the country fixed effects, ν_t ($t = 1 \dots 4$) represents the

yearly fixed effects, e_{it} is the error term, i represents a firm and t is a year.

We introduce industry, country and yearly dummies to deal with potential endogeneity concerns of omitted variables bias. The industry dummies are included in the regression models because they control for industry fixed effects. Country dummies control for country specific fixed effects that are correlated with the country and firm-level variables of interest. Yearly dummies control for factors associated with possible year-specific changes in the explanatory variables, such as the annual business cycle effects, annual changes in the inflation rate or other time trend effects. The two reasons for using industry, country and yearly fixed effects in the regressions models are that (a) these fixed effects control variables help to reduce the statistical noise and increase the power of our tests and that (b) they

provide consistent results for panel data. Yet compared to random effects models, fixed effects models may not offer the most efficient results. The inclusion of industry, country and yearly dummy variables is important to accurately determine the direction of the relationships between the variables of interest.

$$y_{it} = \alpha + \beta_1 CG_{it} + \beta_2 F_{it} + \beta_3 FL_{it} + \beta_4 L_{it} + \beta_5 X_{it} + \gamma_k + \mu_j + \nu_t + e_{it} \quad (4)$$

where y_{it} represents the vector of the log of Tobin's Q, α is the constant term, β_i are vectors of coefficients, CG_{it} is a vector of corporate governance scores, F_{it} is a vector of financial orientation, L_{it} is a vector of the legal system, FL_{it} is a vector of the interaction term between F_{it} and L_{it} , X_{it} is a matrix of explanatory variables including both country-level and firm-level variables, γ_k ($k = 1 \dots 22$) represents the industry fixed effects, μ_j ($j = 1 \dots 22$) represents the country fixed effects, ν_t ($t = 1 \dots 4$) represents the yearly fixed effects, e_{it} is the error term, i represents a firm and t is a year. In the two-stage least squares regression model, the one year lag of the four year geometric average of quick ratio is used as an instrumental variable for CG. Given that the one year lag of the four year geometric average of quick ratio is strongly tied to the firm's corporate governance scores but does not reflect the current market performance of the firm, it is obviously an exogenous instrument.

Jensen (1986) argues that amount of cash holdings are highly related to the degree of

Further, we estimate two-stage least squares instrumental variables regressions and a system of simultaneous equations using three-stage least squares instrumental variables regressions in the robustness checks section. We use the following two-stage least squares regression model:

monitoring and managerial performance of the firm. Since CGQ also incorporates ratings for capital structure and certain aspects of corporate loans, it accounts for the amount of debt and debt covenants. Debt covenants of corporate loans oblige the borrower to have a certain amount of cash or cash equivalents, equity capital or other accounting metrics to assure solvency to the lender. Therefore, the quick ratio is a plausible instrumental variable for corporate governance (Pae, 2010). On the one hand, firms with low quick ratios may undertake risky projects, spend cash faster and have worse corporate governance mechanisms (Dittmar and Mahrt-Smith, 2007, p. 599). Since firms with high quick ratio can more easily ride out any downturn in their businesses, we assume that firms with higher quick ratios are less risky and practice better corporate governance. Alternatively, firms with low quick ratios may have adequate cash holding, take less risk and implement good corporate governance provisions.

Lastly, the three-stage least squares analysis is performed using the following regression model:

$$\begin{cases} y_{it} = \alpha_1 + \delta_{11} CG_{it} + \delta_{12} CGF_{it} + \delta_{13} CGL_{it} + \delta_{14} CGFL_{it} + \delta_{15} F_{it} + \delta_{16} FL_{it} + \delta_{17} L_{it} + \delta_{18} X_{it} \\ \quad + \gamma_{1k} + \mu_{1j} + \nu_{1t} + e_{1it} \\ CG_{it} = \alpha_2 + \delta_{21} y_{it} + \delta_{22} F_{it} + \delta_{23} L_{it} + \delta_{24} X_{it} + \mu_{2j} + \nu_{2t} + e_{2it} \end{cases} \quad (4)$$

where y_{it} represents the vector of the log of Tobin's Q, α_1 and α_2 are the constant terms, and δ_i are vectors of coefficients, CG_{it} is a vector of corporate governance scores, F_{it} is a vector of the financial orientation indicator, L_{it} is a vector of the legal system indicator, FL_{it} is a vector of the interaction of F_{it} and L_{it} , CGF_{it} is a vector of the interaction of CG_{it} and F_{it} , CGL_{it} is a vector of the interaction of CG_{it} and L_{it} , $CGFL_{it}$ is a vector of the interaction of CG_{it} and FL_{it} , X_{it} is a matrix of explanatory variables including both country-level and firm-level variables, γ_{1k} ($k = 1 \dots 22$) represent the industry fixed effects, μ_{1j} and μ_{2j} ($j = 1 \dots 22$) represent the country fixed effects, ν_{1t} and ν_{2t} ($t = 1 \dots 4$) represent the yearly fixed effects, e_{1it} and e_{2it} are the error terms, i represents a firm and t is a year. In the three-stage least squares regression models, the three year lag of the log of assets is used as instrumental variable for CG, the interaction terms of the stock market capitalization and disclosure or shareholder suit indicators with or without CGQ, and

the industry dummies are used as instrumental variables for Tobin's Q.

We assume that the three year lag of the log of assets is exogenous to the current level of Tobin's Q because the current value of Tobin's Q is not impacted by historical asset values. It is possible that larger companies are more likely to attract greater public attention and are more likely to be monitored both by the markets and the regulators alike. Therefore, the bigger size of a firm may positively influence its corporate governance practices as in Durnev and Kim (2005), and we expect positive influence of firm size on corporate governance. Alternatively, since small firms may have more growth opportunities and need more external sources of finance, they may be tempted to practice better governance (Klapper and Love, 2004; Doidge et al., 2007). We also assume that the interaction terms of the stock market capitalization and disclosure or shareholder suit indicators with or without CGQ do not reflect the current governance practices of any

particular firm. Lastly, we separately test for the joint insignificance of industry dummies for corporate governance.

4 Results and Discussion

A. Hypothesis 1: Monotonic effect of financial and legal systems

The first hypothesis that we address is whether, after controlling for corporate governance, financial orientation and development and strength of investor protection exert any monotonic influence on firm performance. Table 3 reports Models I with the two investor protection indices, Model II with only the disclosure index, and Model III with only the shareholder suits index. Model I illustrates that the sum of the coefficients of the continuous measures of stock market capitalization, investor protection, and the interaction terms is positive and significant for Tobin's Q (In all tables, corporate governance, stock market capitalization, disclosure index, shareholder suits index and the interaction term coefficients are bold when the sum of the variables is significant). This highlights synergies between higher market-orientation and stronger investor protection, primarily in a common-law country. According to the chi-squared tests, the sum of the coefficients of stock market capitalization, disclosure, and their interactions has a smaller positive and significant influence on Tobin's Q than the sum of the coefficients of stock market capitalization, shareholder suits, and their interactions. The coefficients of Model I suggest that the stock market and shareholder suits rights are driving most of the results.

Model II indicates that the coefficients of the continuous measures of stock market capitalization and disclosure index alone are insignificant. In contrast, Model III shows that the sum of the

coefficients of the continuous measures of stock market capitalization and shareholder suits, and their interaction term is positive and significant. Individually stock market capitalization and the shareholder suits index have positive coefficients on Tobin's Q while their interaction coefficient is significant and negative. Model III indicates that the continuous enlargement of the stock market and strengthening of shareholder rights contribute to better firm performance. This result is consistent with Dahya et al. (2008) who show that better legal shareholder protection is correlated with higher Tobin's Q. The findings suggest that a more developed stock market with stronger shareholder suits rights is associated with higher market values within a country, while a bank system with weaker shareholder suits rights exerts negative pressure on market values.

In relation to the evidence in Table 3, La Porta et al. (1997) and Rajan and Zingales (2001) explain that market/common-law systems tend to develop together and have synergistic effects for firm performance. In the models, CGQ is insignificant for firm performance. The log of assets and the quick ratio have significant negative impacts on Tobin's Q, while sales growth and research and development expenditures have positive impacts on Tobin's Q. The negative coefficients on GDP growth suggest that periods of higher growth rates of the economy may be weakly correlated with lower firm values. On the surface, this may appear to be a counter-intuitive result. But, one possible explanation of the negative coefficients on GDP growth is that before and at the beginning of the financial crisis, firms in our sample undertook riskier projects that are correlated with more non-performing assets and financial distress. As a result, our sample firms experienced lower market values towards the end of the sample period.

Table 3. Multivariate Analysis of Corporate Governance, Degree of Stock Market Capitalization and Investor Protection, and Performance

This table reports firm random effects regression results. The dependent variable is the log of Tobin's Q, and the explanatory variables follow. Firm-level data are from Thomson Worldscope, and country-level data are from the World Bank and ICRG. CGQ score is the RiskMetrics corporate governance quotient. Stock market cap. is the stock market capitalization divided by GDP and is a proxy for the financial orientation and development of the country. The disclosure index represents the extent of transparency of related-party transactions, and the shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better disclosure index and a better shareholder suits index. Log (assets) is the log of the total value of assets in millions of USD. Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period. Leverage is the ratio of total liabilities to total assets. Pretax margin is the pre-tax profit margin calculated as [EBT / total sales]. Capital expenditure / Sales is the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales. External finance is calculated as the difference between the actual growth rate of total asset and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals $[\text{ROE}/(1-\text{ROE})]*100$ and assuming constant ratios of short-term and long-term debt to assets. Quick ratio is calculated as $[(\text{current assets} - \text{inventories}) / \text{current liabilities}]$. R&D / Sales is the research and development expenses divided by sales. Dividend per share is the amount of dividend per share. Foreign national debt is the risk rating for foreign national debt in a given year from ICRG, where higher rating values indicate lower risk. Log (GDP per capita constant 2000 US\$) and GDP growth are from the World Bank's WDI database. The corruption index by ICRG measures the degree of corruption within the political system, where higher values indicate less corruption. When R&D expenses, dividend per share, and deferred taxes on the balance sheet are not available, the three variables are set equal to zero. All models are based on a sample that excludes utilities, banks, diversified financials, insurance and real estate firms. The chi-squared tests indicate when the sum of the coefficients of the stock market cap., the disclosure or shareholder suits variable, and the interaction terms are significant. The stock market cap., disclosure, shareholder suits variables and the interaction term coefficients are bold when the sum of the coefficients is significant. The values in parentheses are t-statistics based on standard errors that are clustered by country and year. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Model I	Model II	Model III
Corporate governance	0.0002 (0.47)	0.0007 (1.14)	0.0005 (0.95)
Stock market cap. (β_1)	0.0107** (2.47)	0.0008 (0.74)	0.0050* (1.76)
Disclosure index (β_2)	-0.1023** (-2.37)	-0.0040 (-0.28)	
Shareholder suits index (β_3)	0.9837*** (2.71)		0.3596** (2.09)
Interaction of Stock market cap. and Disclosure index (β_4)	0.0009** (2.28)	-0.0001 (-0.96)	
Interaction of Stock market cap. and Shareholder suits index (β_5)	-0.0023** (-2.51)		-0.0006** (-1.98)
Log (assets)	-0.0523*** (-2.84)	-0.0514*** (-2.84)	-0.0511*** (-2.82)
Sales growth	0.0007*** (3.46)	0.0007*** (3.37)	0.0007*** (3.41)
Leverage	-0.0006 (-0.72)	-0.0007 (-0.80)	-0.0007 (-0.81)
Pretax margin	0.0000 (0.77)	0.0000 (0.76)	0.0000 (0.77)
Capital expenditure / Sales	0.0000 (0.25)	0.0000 (0.16)	0.0000 (0.19)
External finance	0.0000 (0.34)	0.0000 (0.26)	0.0000 (0.29)
Quick ratio	-0.0157** (-2.30)	-0.0154** (-2.23)	-0.0156** (-2.27)
R&D / Sales	0.0362*** (3.36)	0.0384*** (3.40)	0.0382*** (3.43)
Dividend per share	-0.0021 (-0.93)	-0.0019 (-0.85)	-0.0020 (-0.86)
Foreign national debt	-0.0010 (-0.10)	-0.0072 (-0.71)	-0.0040 (-0.39)
Log (GDP per capita)	0.7558 (0.89)	0.2233 (0.24)	-0.0669 (-0.07)
GDP growth	-0.0214** (-1.97)	-0.0141 (-1.52)	-0.0147 (-1.52)
Corruption index	-0.0439 (-0.90)	0.0172 (0.46)	-0.0025 (-0.07)
Intercept	-13.2094 (-1.50)	-1.6482 (-0.17)	-1.1675 (-0.13)
Year dummies	yes	yes	yes
Industry dummies	yes	yes	yes
Country dummies	yes	yes	yes
Observations	4,902	4,902	4,902
R-squared	0.2641	0.2639	0.2643
Chi-squared (1) (Stock market cap., Disclosure index, and their interactions)	$\beta_1 + \beta_2 + \beta_4 + \beta_5$ 5.40**		
Chi-squared (1) (Stock market cap., Shareholder suits index, and their interactions)	$\beta_1 + \beta_3 + \beta_4 + \beta_5$ 7.32***		

B. Hypothesis 2: Monotonic effect of financial and legal systems interacted with corporate governance

With hypothesis 2 we test whether financial orientation and strength of investor protection interact positively with corporate governance and exert any monotonic influence on firm performance. The results with the interaction variables are reported in Table 4. Models I uses the both investor protection indices while Models II and III respectively use the disclosure index and the shareholder suits index. Model I illustrates that the sum of the coefficients of the continuous measures of stock market capitalization,

investor protection, and the interaction terms with and without corporate governance is positive and significant for Tobin's Q. The first chi-squared test suggests synergies between market-orientation and stronger investor protection and their positive effect on firm performance. According to the other two chi-squared tests, the sum of the coefficients of stock market capitalization, disclosure, and their interactions with and without CGQ has a smaller positive but significant influence on Tobin's Q than the sum of the coefficients of stock market capitalization, shareholder suits, and their interactions with and without CGQ. Model I results are

attributable to the large impacts of the stock market size and shareholder suits rights.

Model II of Table 4 shows that the continuous measures of the stock market and disclosure are insignificant for Tobin's Q. Conversely, Model III shows that the sum of the coefficients of CGQ, the continuous measures of stock market capitalization and shareholder suits, and their interactions with and without corporate governance is positive and significant for Tobin's Q. Based on the chi-squared test in Model III, the sum of the coefficients of stock

market capitalization, shareholder suits index, and their interaction terms has a positive and significant effect on firm performance, implying synergies. Although stock market capitalization and the shareholder suits index have a small negative interaction coefficient, the sum of the variables has a large positive effect on Tobin's Q. Model III points out that higher market values of firms are attributable to the continuous development of the stock market and strengthening of shareholder suits rights.

Table 4. Multivariate Analysis of Corporate Governance, Different Levels of Stock Market Capitalization and Investor Protection, and Performance

This table reports firm random effects regression results. The dependent variable is the log of Tobin's Q, and the explanatory variables follow. Firm-level data are from Thomson Worldscope, and country-level data are from the World Bank and ICRG. CGQ score is the RiskMetrics corporate governance quotient. Stock market cap. is the stock market capitalization divided by GDP and is a proxy for the financial orientation and development of the country. The disclosure index represents the extent of transparency of related-party transactions, where higher values are associated with a better disclosure index. The shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better shareholder suits index. Log (assets) is the log of the total value of assets in millions of USD. Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period. Leverage is the ratio of total liabilities to total assets. Pretax margin is the pre-tax profit margin calculated as [EBT / total sales]. Capital expenditure / Sales is the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales. External finance is calculated as the difference between the actual growth rate of total assets and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals [ROE/(1-ROE)]*100 and assuming constant ratios of short-term and long-term debt to assets. Quick ratio is calculated as [(current assets - inventories) / current liabilities]. R&D / Sales is the research and development expenses divided by sales. Dividend per share is the amount of dividend per share. Foreign national debt is the risk rating for foreign national debt in a given year from ICRG, where higher rating values indicate lower risk. Log (GDP per capita constant 2000 US\$) and GDP growth are from the World Bank's WDI database. The corruption index by ICRG measures the degree of corruption within the political system, where higher values indicate less corruption. When R&D expenses, dividend per share, and deferred taxes on the balance sheet are not available, the three variables are set equal to zero. All models are based on a sample that excludes utilities, banks, diversified financials, insurance and real estate firms. The chi-squared tests indicate when the sum of the coefficients of the stock market cap., the disclosure and/or shareholder suits variable(s), and the interaction terms are significant. Corporate governance, stock market cap., disclosure and/or shareholder suits variable(s), and the interaction terms coefficients are bold when the sum of the coefficients is significant. The values in parentheses are t-statistics based on standard errors that are clustered by country and year. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Model I	Model II	Model III
Corporate governance (β_1)	0.0012 (0.27)	0.0006 (0.31)	0.0026 (0.76)
Interaction of Corporate governance and Stock market cap. (β_2)	-0.0001* (-1.66)	0.0000 (0.07)	-0.0000 (-0.78)
Interaction of Corporate governance and Disclosure index (β_3)	0.0007 (1.58)	0.0001 (0.47)	
Interaction of Corporate governance, Stock market cap. and Disclosure index (β_4)	-0.0000** (-2.22)	-0.0000 (-0.71)	
Interaction of Stock market cap. and Disclosure index (β_5)	0.0014*** (3.03)	-0.0000 (-0.09)	
Stock market cap. (β_6)	0.0139*** (2.92)	0.0007 (0.52)	0.0059 (1.64)
Disclosure index (β_7)	-0.1508*** (-3.12)	-0.0137 (-0.67)	
Shareholder suits index (β_8)	1.2375*** (3.15)		0.3845* (1.88)
Interaction of Stock market cap. and Shareholder suits index (β_9)	-0.0031*** (-3.10)		-0.0007 (-1.63)
Interaction of Corporate governance and Shareholder suits index (β_{10})	-0.0006 (-0.64)		-0.0002 (-0.37)
Interaction of Corporate governance,	0.0000*		0.0000

Stock market cap. and Shareholder suits index (β_{11})	(1.89)	-	(0.51)
Log (assets)	-0.0517*** (-2.81)	0.0514*** (-2.83)	-0.0512*** (-2.82)
Sales growth	0.0007*** (3.45)	0.0007*** (3.39)	0.0007*** (3.40)
Leverage	-0.0007 (-0.74)	-0.0007 (-0.83)	-0.0007 (-0.83)
Pretax margin	0.0000 (0.77)	0.0000 (0.76)	0.0000 (0.77)
Capital expenditure / Sales	0.0000 (0.25)	0.0000 (0.16)	0.0000 (0.19)
External finance	0.0000 (0.30)	0.0000 (0.29)	0.0000 (0.31)
Quick ratio	-0.0160** (-2.35)	-0.0156** (-2.25)	-0.0156** (-2.27)
R&D / Sales	0.0353*** (3.40)	0.0383*** (3.41)	0.0381*** (3.43)
Dividend per share	-0.0022 (-0.98)	-0.0020 (-0.86)	-0.0020 (-0.89)
Foreign national debt	-0.0025 (-0.24)	-0.0081 (-0.79)	-0.0041 (-0.40)
Log (GDP per capita)	0.9909 (1.14)	0.4293 (0.46)	-0.0228 (-0.02)
GDP growth	-0.0218* (-1.84)	-0.0181* (-1.72)	-0.0165 (-1.56)
Corruption index	-0.0470 (-0.99)	0.0149 (0.40)	-0.0050 (-0.13)
Intercept	-17.1604* (-1.89)	-3.7502 (-0.39)	-1.8225 (-0.20)
Year dummies	yes	yes	yes
Industry dummies	yes	yes	yes
Country dummies	yes	yes	yes
Observations	4,902	4,902	4,902
R-squared	0.2649	0.2637	0.2638
Chi-squared (1) (Stock market cap., Investor protection indices, and their interactions)	$\beta_2+\beta_3+\beta_4+\beta_5+\beta_6+\beta_7+\beta_8+\beta_9+\beta_{10}+\beta_{11}$		$\beta_2+\beta_6+\beta_8+\beta_9+\beta_{10}+\beta_{11}$
	9.50***		3.55*
Chi-squared (1) (Stock market cap., Disclosure index, and their interactions)	$\beta_2+\beta_3+\beta_4+\beta_5+\beta_6+\beta_7+\beta_9+\beta_{11}$		
	9.37***		
Chi-squared (1) (Stock market cap., Shareholder suits index, and their interactions)	$\beta_2+\beta_4+\beta_5+\beta_6+\beta_8+\beta_9+\beta_{10}+\beta_{11}$		
	9.92***		

C. Hypothesis 3: Non-monotonic effect of financial and legal systems interacted with corporate governance

The third hypothesis examines whether financial orientation and the investor protection indices interacted with CGQ exert any non-monotonic influence on firm performance. Allowing for the possibility of non-monotonic effect, consistent with Hermalin and Weisbach (2012), we use high-level dummies for the disclosure index, shareholder suits

index, and financial orientation.⁷ The results with the interaction variables are reported in Table 5. Model I uses the disclosure and shareholder suits dummies, Model II uses the disclosure dummy, and Model III uses the shareholder suits dummy. Looking at Model I, the sum of the coefficients of the stock market

⁷ In all models, “high-level” indicates above the median value, and “low-level” indicates below or equal to the median value. We don’t include country fixed effects in the models with country-level dummies because countries with higher levels of stock market capitalization and disclosure index tend to have those values for the entire period of the study.

capitalization and disclosure dummies, and their interaction terms with and without corporate governance is positive and significant for Tobin's Q. This result is supported by Hermalin and Weisbach (2012) who find a non-monotonic effect of disclosure practices and show that beyond a certain point greater disclosure can exacerbate agency problems and corporate governance issues. The positive interaction term between market-orientation and stronger home country disclosure practices suggests synergies for market/common-law systems. Based on the coefficients of the stock market capitalization and disclosure index, firms in bank-oriented countries with stronger disclosure index have significantly lower market values. This result underscores the idea that firms in bank-oriented countries with stronger disclosure rights experience lower market valuations because banks acting as "delegated monitors" negate the need for stronger disclosure laws. Thus, these countries may be misaligned because the requirement for a stronger disclosure in bank systems adds more to the costs of firms. The evidence also implies that firms in countries with greater market-orientation and development and weaker disclosure index are associated with higher market values. One

explanation is that the stock market size more than offsets the lack of transparency of related-party transactions.

To analyze the non-monotonic interactions of the disclosure and stock market dummies with CGQ, we use Model II of Table 5. The evidence shows that the sum of the coefficients of the stock market dummy as well as its interaction terms with the disclosure dummy and corporate governance has a positive and significant effect on firm performance. According to the results, firms in countries with bank-orientation and stronger disclosure index do not experience larger market values, while firms in countries with market-orientation and weaker disclosure index have larger market values. Last but not least, Models III analyzes the non-monotonic interactions of the shareholder suits and stock market dummies with CGQ. The results show that the sum of the coefficients of the stock market dummy along with its interaction terms with shareholder suits dummy and CGQ is insignificant for Tobin's Q. Although stock market size significantly impacts Tobin's Q, shareholder suits rights don't have any non-monotonic effect.

Table 5. Multivariate Analysis of Corporate Governance, Degree of Stock Market Capitalization and Investor Protection, and Performance

This table reports firm random effects regression results. The dependent variable is the log of Tobin's Q, and the explanatory variables follow. Firm-level data are from Thomson Worldscope, and country-level data are from the World Bank and ICRG. CGQ score is the RiskMetrics corporate governance quotient. Stock market cap. is the stock market capitalization divided by GDP and is a proxy for the financial orientation and development of the country. The disclosure index represents the extent of transparency of related-party transactions, and the shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better disclosure index and a better shareholder suits index. The high level dummies of stock market cap., disclosure index, and shareholder suits index take a value of one if a country has above the median value, and zero otherwise. Log (assets) is the log of the total value of assets in millions of USD. Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period. Leverage is the ratio of total liabilities to total assets. Pretax margin is the pre-tax profit margin calculated as [EBT / total sales]. Capital expenditure / Sales is the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales. External finance is calculated as the difference between the actual growth rate of total asset and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals $[ROE/(1-ROE)]*100$ and assuming constant ratios of short-term and long-term debt to assets. Quick ratio is calculated as $[(\text{current assets} - \text{inventories}) / \text{current liabilities}]$. R&D / Sales is the research and development expenses divided by sales. Dividend per share is the amount of dividend per share. Foreign national debt is the risk rating for foreign national debt in a given year from ICRG, where higher rating values indicate lower risk. Log (GDP per capita constant 2000 US\$) and GDP growth are from the World Bank's WDI database. The corruption index by ICRG measures the degree of corruption within the political system, where higher values indicate less corruption. When R&D expenses, dividend per share, and deferred taxes on the balance sheet are not available, the three variables are set equal to zero. All models are based on a sample that excludes utilities, banks, diversified financials, insurance and real estate firms. The stock market cap., disclosure, shareholder suits variables and the interaction term coefficients are bold when the sum of the coefficients is significant. The values in parentheses are t-statistics based on standard errors that are clustered by country and year. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Model I	Model II	Model III
Corporate governance	0.0011 (1.14)	0.0022** (2.26)	0.0008 (1.02)
Interaction of Stock market cap. and Disclosure index high level dummies (β_1)	0.0753 (0.99)	0.0204 (0.23)	
Stock market cap. high level dummy (β_2)	0.1017* (1.92)	0.1406** (2.39)	0.1266*** (2.91)
Disclosure index high level dummy (β_3)	-0.0680 (-0.85)	-0.0351 (-0.42)	
Interaction of Corporate governance and Stock market cap. high level dummy (β_4)	-0.0013 (-1.08)	-0.0021* (-1.66)	-0.0017 (-1.64)
Interaction of Corporate governance and Disclosure index high level dummy (β_5)	-0.0005 (-0.35)	-0.0010 (-0.71)	
Interaction of Corporate governance and high level dummies of Stock market cap. and Disclosure index (β_6)	-0.0006 (-0.35)	0.0002 (0.09)	
Interaction of Stock market cap. and Shareholder suits index high level dummies (β_7)	0.1220 (1.04)		0.1016 (0.86)
Shareholder suits index high level dummy (β_8)	-0.2518*** (-2.79)		-0.2256** (-2.18)
Interaction of Corporate governance and Shareholder suits index high level dummy (β_9)	0.0063*** (2.59)		0.0059*** (2.68)
Interaction of Corporate governance and high level dummies of Stock market cap. and Shareholder suits index (β_{10})	-0.0059*** (-2.62)		-0.0060*** (-2.75)
Log (assets)	-0.0493** (-2.47)	-0.0525** (-2.56)	-0.0484** (-2.22)
Sales growth	0.0006*** (3.27)	0.0007*** (3.45)	0.0006*** (3.25)
Leverage	-0.0007 (-0.77)	-0.0004 (-0.51)	-0.0007 (-0.81)
Pretax margin	0.0000 (0.74)	0.0001 (0.92)	0.0000 (0.76)
Capital expenditure / Sales	0.0000 (0.14)	0.0000 (0.19)	0.0000 (0.15)
External finance	0.0000 (0.31)	0.0000 (0.35)	0.0000 (0.29)
Quick ratio	-0.0159** (-2.22)	-0.0157** (-2.24)	-0.0159** (-2.22)
R&D / Sales	0.0358*** (3.33)	0.0397*** (3.77)	0.0359*** (3.33)
Dividend per share	-0.0020 (-0.87)	-0.0017 (-0.75)	-0.0019 (-0.86)
Foreign national debt	-0.0058 (-0.67)	-0.0052 (-0.61)	-0.0064 (-0.73)
Log (GDP per capita)	0.0498 (0.52)	-0.1161 (-0.90)	0.0577 (0.60)
GDP growth	-0.0126 (-1.34)	-0.0140 (-1.42)	-0.0128 (-1.33)
Corruption index	0.0145 (0.64)	0.0183 (0.67)	0.0192 (0.83)
Intercept	0.0131 (0.02)	1.6113 (1.31)	-0.1063 (-0.12)
Year dummies	yes	yes	yes
Industry dummies	yes	yes	yes
Country dummies	no	no	no
Observations	4,902	4,902	4,902
R-squared	0.2503	0.2376	0.2492

D. Hypothesis 4: Corporate governance and high-level and/or low-level of financial and legal systems

Given the significant interactions of CGQ with stock market capitalization and investor protection in Tables 4, we further examine whether different combinations of financial orientation and strength of

investor protection have varied impact on the corporate governance - firm performance relationship as posited in hypothesis 4. Table 6 provides the results of four regression models relating to this hypothesis. While Models I and II do not include interaction with corporate governance, Models III and IV do include this interaction.

Table 6. Multivariate Analysis of the Level of Stock Market Capitalization and Investor Protection, Corporate Governance, and Performance

This table reports OLS firm random effects regression results. The dependent variable is the log of Tobin's Q, and the explanatory variables follow. Firm-level data are from Thomson Worldscope, and country-level data are from the World Bank and ICRG. CGQ score is the RiskMetrics corporate governance quotient. Stock market cap. is the stock market capitalization divided by GDP and is a proxy for the financial orientation and development of the country. The disclosure index represents the extent of transparency of related-party transactions, and the shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better disclosure index and a better shareholder suits index. The high level dummies of stock market cap., disclosure index, and shareholder suits index take a value of one if a country has above the median value, and zero otherwise. The low level dummies of stock market cap., disclosure index, and shareholder suits index take a value of one if a country has less than or equal to the median value, and zero otherwise. Log (assets) is the log of the total value of assets in millions of USD. Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period. Leverage is the ratio of total liabilities to total assets. Pretax margin is the pre-tax profit margin calculated as [EBT / total sales]. Capital expenditure / Sales is the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales. External finance is calculated as the difference between the actual growth rate of total assets and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals [ROE/(1-ROE)]*100 and assuming constant ratios of short-term and long-term debt to assets. Quick ratio is calculated as [(current assets - inventories)/ current liabilities]. R&D / Sales is the research and development expenses divided by sales. Dividend per share is the amount of dividend per share. Foreign national debt is the risk rating for foreign national debt in a given year from ICRG, where higher rating values indicate lower risk. Log (GDP per capita constant 2000 US\$) and GDP growth are from the World Bank's WDI database. The corruption index by ICRG measures the degree of corruption within the political system, where higher values indicate less corruption. When R&D expenses, dividend per share, and deferred taxes on the balance sheet are not available, the three variables are set equal to zero. All models are based on a sample that excludes utilities, banks, diversified financials, insurance and real estate firms. The chi-squared test indicates when the sum of the coefficients of corporate governance and its interaction terms is significant. The coefficients of high or low level dummy of stock market cap., disclosure index, shareholder suits index, and their interaction terms with corporate governance are bold when high and/or low level dummies of the variables are significant. The values in parentheses are t-statistics based on standard errors that are clustered by country and year. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Model I	Model II	Model III	Model IV
Corporate governance (β_1)	0.0008 (1.17)	0.0003 (0.58)	0.0001 (0.07)	-0.0009 (-1.11)
Combination of Stock market cap. and Disclosure index high level dummies	-0.0595 (-0.84)		-0.0147 (-0.18)	
Combination of low level dummy of Stock market cap. and high level dummy of Disclosure index	-0.1319* (-1.87)		-0.1756** (-2.02)	
Combination of Stock market cap. and Disclosure index low level dummies	-0.0806** (-2.21)		-0.1406** (-2.39)	
Combination of Stock market cap. and Shareholder suits index high level dummies		-0.1196 (-1.35)		-0.1240 (-1.41)
Combination of low level dummy of Stock market cap. and high level dummy of Shareholder suits index		-0.1830 (-1.39)		-0.3523*** (-3.51)
Combination of Stock market cap. and Shareholder suits index low level dummies		-0.0611* (-1.73)		-0.1266*** (-2.91)
Interaction of Corporate governance and the combination of high level dummies of Stock market cap. and Disclosure index			-0.0008 (-0.55)	
Interaction of Corporate governance and the combination of low level dummy of Stock market cap. and high level dummy of Disclosure index			0.0012 (0.74)	
Interaction of Corporate governance and the combination of low level dummies of Stock market cap.			0.0021* (1.66)	

and Disclosure index				
Interaction of Corporate governance and the combination of high level dummies of Stock market cap. and Shareholder suits index (β_2)				-0.0001 (-0.09)
Interaction of Corporate governance and the combination of low level dummy of Stock market cap. and high level dummy of Shareholder suits index (β_3)				0.0076***
Interaction of Corporate governance and the combination of low level dummies of Stock market cap. and Shareholder suits index (β_4)				(3.23) 0.0017 (1.64)
Log (assets)	-0.0516** (-2.50)	-0.0489** (-2.21)	-0.0525** (-2.56)	-0.0484** (-2.22)
Sales growth	0.0007*** (3.35)	0.0007*** (3.25)	0.0007*** (3.45)	0.0006*** (3.25)
Leverage	-0.0004 (-0.57)	-0.0007 (-0.90)	-0.0004 (-0.51)	-0.0007 (-0.81)
Pretax margin	0.0001 (0.93)	0.0000 (0.81)	0.0001 (0.92)	0.0000 (0.76)
Capital expenditure / Sales	0.0000 (0.21)	0.0000 (0.19)	0.0000 (0.19)	0.0000 (0.15)
External finance	0.0000 (0.29)	0.0000 (0.27)	0.0000 (0.35)	0.0000 (0.29)
Quick ratio	-0.0155** (-2.24)	-0.0155** (-2.16)	-0.0157** (-2.24)	-0.0159** (-2.22)
R&D / Sales	0.0406*** (3.69)	0.0384*** (3.32)	0.0397*** (3.77)	0.0359*** (3.33)
Dividend per share	-0.0015 (-0.68)	-0.0017 (-0.74)	-0.0017 (-0.75)	-0.0019 (-0.86)
Foreign national debt	-0.0061 (-0.66)	-0.0078 (-0.88)	-0.0052 (-0.61)	-0.0064 (-0.73)
Log (GDP per capita)	-0.1276 (-0.96)	0.0105 (0.10)	-0.1161 (-0.90)	0.0577 (0.60)
GDP growth	-0.0093 (-0.95)	-0.0099 (-1.04)	-0.0140 (-1.42)	-0.0128 (-1.33)
Corruption index	0.0206 (0.74)	0.0165 (0.63)	0.0183 (0.67)	0.0192 (0.83)
Intercept	1.8285 (1.45)	0.4761 (0.52)	1.7519 (1.42)	0.0203 (0.02)
Year dummies	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes
Country dummies	no	no	no	no
Observations	4,902	4,902	4,902	4,902
R-squared	0.2388	0.2443	0.2376	0.2492
Chi-squared (1) (Corp. gov.)				$\beta_1+\beta_2+\beta_3+\beta_4$ 4.97**

Model I shows that countries with low-levels of stock market capitalization and high-levels of disclosure index and countries with low-levels of stock market capitalization and low-levels of disclosure exerts negative and significant effect on firm performance compared with countries with high-levels of stock market capitalization and low-levels of disclosure. The results imply that bank-oriented countries with stronger disclosure are correlated with the lower Tobin's Q and could be misaligned. Model II illustrates that countries with low-levels of stock market capitalization and shareholder suits index exert significant negative pressure on firm performance compared with countries with high-

levels of stock market capitalization and low-levels of shareholder suits. This means that bank-based systems with weaker investor protection are correlated with lower Tobin's Q. After incorporating interactions with CGQ in Model III, we find that firms in countries with low-levels of stock market capitalization and high-levels of disclosure and in countries with low-levels of stock market capitalization and disclosure have significantly lower market values. In Model III, CGQ has a significantly positive effect for the combination of low-levels of stock market capitalization and disclosure index, but the sum of the CGQ coefficients (i.e., $0.0026 = 0.0001 - 0.0008 + 0.0012 + 0.0021$) is insignificant for firm

performance. The finding of a significant positive interaction between CGQ and low-level of the disclosure index is consistent with Durnev and Kim (2005, p. 1461) who find that the positive corporate governance - market value associations are stronger in countries with weaker investor protection environments and that “firms adapt to poor legal environments to establish efficient governance practices.” This is also consistent with Klapper and Love (2004) who point out that firm-level corporate governance practices matters more in countries with weaker legal systems.

Further, Model IV using interactions with CGQ shows that firms in countries with low-levels of stock market capitalization and high-levels of shareholder suits and in countries with low-levels of stock market capitalization and shareholder suits have significantly lower market values. The evidence shows that bank-oriented countries with stronger shareholder suits are correlated with the lower Tobin’s Q and could be misaligned. The chi-squared test in Model IV indicates that the sum of the CGQ coefficients (i.e., $0.0083 = -0.0009 - 0.0001 + 0.0076 + 0.0017$) is significantly positive for Tobin’s Q. CGQ also exerts a significant and positive pressure for the combination of low-level of stock market capitalization and high-level of shareholder suits index (In unreported tests, we regress Tobin’s Q on the four CGQ subcategories scores in each group of financial orientation and investor protection. The empirical results show that higher corporate governance scores exert positive impacts on firm performance for the group with a bank system and weaker disclosure index and the group with a bank system and stronger shareholder suits index. These additional tests confirm the results presented herein.). Dahya et al. (2008) support the result that better corporate governance has a strong

positive relation with Tobin’s Q in countries with weaker legal protection of shareholders.

The results show that the combinations of bank/common-law systems and bank/civil-law systems are associated with lower values for Tobin’s Q, partially supported by Anderson and Gupta (2009). Based on these models, firms operating in bank systems with stronger investor protection experience large negative drifts on Tobin’s Q. Therefore one plausible way to interpret these results is that the financial and legal systems of bank-based economies need to be aligned since the combination of bank/common-law countries is associated with larger valuation discounts when compared to bank/civil-law combination. Lastly, the results indicate that country-level variables dominate the effect of corporate governance on Tobin’s Q.

E. Robustness checks

We perform additional tests to mitigate effects of potential omitted variables and simultaneous reverse causality issues. To address potential endogeneity problems, we employ two-stage least squares regression models and a system of simultaneous equations using three-stage least squares regression models both of which are using instrumental variables in the analysis. Table 7 presents the two-stage least squares regression results. Following Jensen (1986) and Pae (2010) we use the cash holdings of the firm as instrumental variable for managerial performance and corporate governance. Specifically, we instrument corporate governance with the one year lag of the four year geometric average of quick ratio since the variable is significant in the first stages of the two models and a valid instrument for CGQ.

Table 7. Instrumental Variables Analysis of Corporate Governance, Stock Market Capitalization, Investor Protection, and Performance

This table presents two-stage least squares instrumental variables regression results. The dependent variable is the log of Tobin’s Q, and the explanatory variables follow. Firm-level data are from Thomson Worldscope, and country-level data are from the World Bank and ICRG. CGQ score is the RiskMetrics corporate governance quotient. The dependent variable in the first stage is the CGQ score. Stock market cap. is the stock market capitalization divided by GDP and is a proxy for the financial orientation and development of the country. The disclosure index represents the extent of transparency of related-party transactions, and the shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better disclosure index and a better shareholder suits index. Quick ratio is calculated as [(current assets - inventories)/ current liabilities]. The one year lag of four year geometric average of quick ratio is used as an instrumental variable for CGQ in the two regression models. Log (assets) is the log of the total value of assets in millions of USD. Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period. Leverage is the ratio of total liabilities to total assets. Pretax margin is the pre-tax profit margin calculated as [EBT / total sales]. Capital expenditure / Sales is the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales. External finance is calculated as the difference between the actual growth rate of total assets and the firm’s sustainable growth rate using retained earnings, where the sustainable growth equals $[ROE/(1-ROE)]*100$ and assuming constant ratios of short-term and long-term debt to assets. R&D / Sales is the research and development expenses divided by sales. Dividend per share is the amount of dividend per share. Foreign national debt is the risk rating for foreign national debt in a given year from ICRG, where higher rating values indicate lower risk. Log (GDP per capita constant 2000 US\$) and GDP growth are from the World Bank’s WDI database. The corruption index by ICRG measures the degree of corruption within the political system, where higher values indicate less corruption. When R&D expenses, dividend per share, and deferred taxes on the balance sheet are not available, the three variables are set equal to zero. All models are based on a sample that excludes utilities, banks, diversified financials, insurance and real estate firms. Stock market cap., disclosure or shareholder suits index, and their interaction terms coefficients are bold when the sum of the coefficients is significant. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Model I	First Stage	Model II	First Stage
Corporate governance	0.0277* (1.65)		0.0279* (1.67)	
Stock market cap.	-0.0010 (-0.61)	0.0698*** (2.83)	-0.0011 (-0.27)	0.2187*** (4.93)
Stock market cap.*	-0.0001 (-1.00)	0.0007 (0.27)		
Disclosure index	-0.0336 (-1.19)	1.0098* (1.87)		
Disclosure index			-0.0001 (-0.27)	-0.0171*** (-3.31)
Stock market cap.*			0.0880 (0.43)	9.5002*** (3.01)
Shareholder suits index		0.4271** (2.51)		0.4290** (2.52)
Shareholder suits index				
Lag of quick ratio	-		-	
Log (assets)	-0.0572** (-2.22)	1.5265*** (9.05)	-0.0572** (-2.23)	1.5233*** (9.05)
Sales growth	0.0013*** (5.15)	-0.0109** (-2.23)	0.0013*** (5.19)	-0.0105** (-2.16)
Leverage	-0.0009* (-1.72)	0.0215* (1.66)	-0.0009* (-1.73)	0.0216* (1.67)
Pretax margin	0.0000 (0.74)	-0.0006 (-0.66)	0.0000 (0.74)	-0.0006 (-0.65)
Capital expenditure / Sales	0.0000 (0.61)	-0.0018 (-1.25)	0.0000 (0.61)	-0.0017 (-1.23)
External finance	0.0000* (1.73)	-0.0007*** (-2.59)	0.0000* (1.76)	-0.0007*** (-2.55)
R&D / Sales	0.0348** (2.47)	-0.2055 (-0.59)	0.0347** (2.46)	-0.2147 (-0.62)
Dividend per share	-0.0019 (-1.27)	-0.0059 (-0.17)	-0.0019 (-1.25)	-0.0070 (-0.20)
Foreign national debt	-0.0286* (-1.66)	0.8709*** (4.08)	-0.0262 (-1.49)	0.8914*** (4.13)
Log (GDP per capita)	0.3328 (0.47)	-0.9460 (-0.06)	0.0278 (0.03)	-0.2181 (-0.01)
GDP growth	0.0179 (0.82)	-1.1883*** (-5.69)	0.0233 (0.93)	-1.3822*** (-6.14)
Corruption index	-0.0416 (-0.87)	2.4178*** (4.21)	-0.0474 (-1.15)	1.8996*** (3.17)
Intercept	-2.8604 (-0.39)	-2.1184 (-0.01)	-0.4462 (-0.05)	-71.8689 (-0.37)
Year dummies	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes
Country dummies	yes	yes	yes	yes
Observations	4,849	4,849	4,849	4,849
R-squared	0.1545	0.7284	0.1532	0.7287

Model I includes the disclosure index, and Model II includes the shareholder suits index. All models indicate that the stock market capitalization has a positive and significant impact on corporate governance in the first stage, but it affects Tobin's Q primarily through better corporate governance practices. As Models I and II illustrate, an increase in the stock market capitalization is correlated with enhancements in corporate governance, which indirectly raises Tobin's Q. This means that the enlargement of the stock market plays an essential role in determining the value maximizing level of a firm's corporate governance mechanisms. Model I

shows that the disclosure index has a positive and significant effect on corporate governance. This means that higher disclosure is associated with better CGQ and consequently with better firm performance, but only indirectly. Further, the sum of the coefficients of stock market, disclosure and their interaction are significantly positive for corporate governance. This result suggests that firms operating in a bank system with weaker investor protection will tend to have lower Tobin's Q and firms operating in a market system with stronger investor protection will tend to exhibit higher valuations. In addition, the first step in Model I show that an increase of the disclosure

index and stock market size is associated with an increase in CGQ.

Model II points out that the shareholder suits index is significantly positive for corporate governance in the first stage and has a small negative interaction coefficient with the stock market. The sum of the coefficients of stock market, shareholder suits and their interaction is significantly positive for corporate governance. The finding that CGQ accounts for the degree of investor protection is consistent with the definition by La Porta et al. (2000, p. 4) that “corporate governance is, to a large extent, a set of mechanisms through which outside investors protect themselves against expropriation by the insiders.” The results suggest that the stock market capitalization and the shareholder suits index exhibit a positive effect on CGQ and indirectly affect Tobin’s Q through better corporate governance practices. La Porta et al. (2002) explain that countries with weaker protection of minority shareholders have serious agency conflicts when controlling shareholders expropriation of the minority shareholders and therefore an improved shareholder protection is positively correlated with higher market values for the firm. Looking at the first step in Model II, an increase of the shareholder suits index and stock market size is associated with an increase in CGQ.

This evidence indicates that a higher level of stock market capitalization and stronger investor protection tend to be correlated with higher level of Tobin’s Q. The findings with the continuous variables show that the optimal corporate governance practices are influenced by the financial and legal systems of the country. The results suggest that firms operating in a bank/civil-law system are associated with lower Tobin’s Q than those operating in a market/common-law system, which is consistent with Anderson and Gupta (2009). Further, the two-stage least squares regression results suggest that firm valuation premiums with market-orientation and weaker investor protection are not as large as the valuation premiums with market-orientation and stronger investor protection. Firms in a larger stock market with better protection of investors have higher quality corporate governance and better firm performance. These findings support Doidge et al. (2007) that the legal protection of investors and financial development are critical for determining the optimal level of corporate governance.⁸

⁸ In unreported two-stage least squares regression tests, we use the one year lags of the stock market capitalization and each of the two investor protection measures to alleviate any potential endogeneity concerns for the country-level variables. We find that stock market capitalization, disclosure rights, and shareholder rights have significant positive effects on the corporate governance – firm performance relationship. In particular, improvements in the stock market and disclosure rights through CGQ exert positive pressure and Tobin’s Q. Further, improvements in

Table 8 reports the three-stage least squares regression models that allow for endogeneity between CGQ and Tobin’s Q. To conduct the estimates, we need to select exogenous variables that are correlated with CGQ but not with Tobin’s Q and other exogenous variables that are correlated with Tobin’s Q but not with CGQ. In the models, we identified the three year lag of the log of assets as an instrumental variable for CGQ, and the interaction terms of stock market capitalization and investor protection with or without corporate governance, and industry dummies as instrumental variables for firm performance.⁹ We recognize the difficulty in identifying fully exogenous variables and take this into consideration when interpreting our results.

In table 8, Model I includes the disclosure indicator and Models II includes the shareholder suits indicator. The evidence from Model I show that the interaction coefficient of the stock market indicator and the disclosure indicator is significantly positive for Tobin’s Q, highlighting the existence of synergies when a country aligns the orientations of its financial and legal systems (i.e., market/common-law). The interaction of CGQ with the stock market and disclosure indices positively impacts firm performance. The chi-squared test shows that the sum of the coefficients of the stock market indicator, disclosure indicator, and their interactions with and without corporate governance is significantly positive for Tobin’s Q. The results imply that better disclosure along with its interactions with the stock market and CGQ positively affects firm performance. The greater impact of the disclosure indicator over the stock market is supported by La Porta et al. (1997) who show that legal system dominates the financial system. The governance equation of Model I show that the stock market capitalization and disclosure indicators exert significantly positive effects on CGQ. Allowing for potential endogeneity in the models, Tobin’s Q is found to significantly affect corporate governance, and the sum of the coefficients of CGQ together with financial and legal indicators, and the interaction terms has a significant positive effect on firm performance.

Model II illustrates that interaction coefficient of the stock market indicator and the shareholder suits indicator has a significant positive impact on Tobin’s Q, supporting the existence of synergies as a country coordinates the orientations of its financial and legal systems (i.e., market/common-law). The interaction of

the stock market and shareholder suits rights without CGQ exert positive pressure and Tobin’s Q, and individually the stock market through CGQ has positive impact on Tobin’s Q. These additional tests support the results presented herein.

⁹ We separately run regressions with CGQ on all control variables to test the joint significance of the industry dummies. The tests show that the sum of the coefficients of the industry dummies is insignificant for CGQ.

CGQ with stock market and shareholder suits indicators has a positive effect on firm performance. The chi-squared test shows that the sum of the coefficients of the stock market indicator, shareholder suits indicator and their interactions with and without corporate governance has a significantly positive effect on firm performance. These results suggest that improvements in the shareholder suits indicator along with its interactions with the stock market and CGQ positively affects Tobin's Q. Consistent with La Porta

et al. (1997), the effect of the shareholder suits indicator dwarfs the impact of the stock market indicator. The governance equation of Model II illustrates that the stock market capitalization and shareholder suits indicators have significantly positive impact on CGQ. Again, Tobin's Q significantly affects CGQ, and the sum of the coefficients of corporate governance in conjunction with financial and legal indicators, and the interaction terms is associated with better firm performance.

Table 8. Three-Stage Least Squares Analysis of Corporate Governance, Stock Market Capitalization, Investor Protection, and Performance

This table reports three-stage least squares regression results for a system of two equations. The dependent variable is the log of Tobin's Q in the first equation and the CGQ score in the second equation. Firm-level data are from Thomson Worldscope, and country-level data are from the World Bank and ICRG. Log (Tobin's Q) is the log of the market value of assets divided by the book value of assets, where the market value of assets is calculated as the sum of the book value of assets and the market value of common equity less the sum of the book value of common stock and deferred taxes on the balance sheet. CGQ score is the RiskMetrics corporate governance quotient. The explanatory variables follow. Stock market cap. is the stock market capitalization divided by GDP and is a proxy for the financial orientation and development of the country. The disclosure index represents the extent of transparency of related-party transactions, and the shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better disclosure index and a better shareholder suits index. The indicator variables for stock market cap., disclosure index, and shareholder suits index take a value of two if a country is above or equal to the 66th percentile, one if a country is above or equal to the 33th percentile and less than the 66th percentile, and zero otherwise. Log (assets) is the log of the total value of assets in millions of USD. The three year lag of log (assets) is used as an instrumental variable for CGQ in the two models. The interaction terms of stock market cap. and disclosure or shareholder suit indicators with or without CGQ, and industry dummies are used as instrumental variables for Tobin's Q in the two models. Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period. Leverage is the ratio of total liabilities to total assets. Pretax margin is the pre-tax profit margin calculated as [EBT / total sales]. Capital expenditure / Sales is the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales. External finance is calculated as the difference between the actual growth rate of total assets and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals [ROE/(1-ROE)]*100 and assuming constant ratios of short-term and long-term debt to assets. Quick ratio is calculated as [(current assets - inventories) / current liabilities]. R&D / Sales is the research and development expenses divided by sales. Dividend per share is the amount of dividend per share. Foreign national debt is the risk rating for foreign national debt in a given year from ICRG, where higher rating values indicate lower risk. Log (GDP per capita constant 2000 US\$) and GDP growth are from the World Bank's WDI database. The corruption index by ICRG measures the degree of corruption within the political system, where higher values indicate less corruption. When R&D expenses, dividend per share and deferred taxes on the balance sheet are not available, the three variables are set equal to zero. All models are based on a sample that excludes utilities, banks, diversified financials, insurance and real estate firms. The chi-squared tests indicate when the sum of the coefficients of CGQ, stock market cap. and disclosure or the shareholder suits indicators, and their interaction terms is significant. R-squared values don't have statistical meaning in three-stage least squares regressions and are not presented. All models include an intercept variable. Corporate governance, stock market cap. indicator, disclosure or shareholder suits indicator, and the interaction terms coefficients are bold when the sum of the coefficients is significant. The values in parentheses are t-statistics. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Model I		Model II	
	Tobin's Equation	Q	Tobin's Q Equation	Corp. Gov. Equation
Log (Tobin's Q)	-	22.7228** (12.79)	-	22.0211** (12.65)
Corporate governance	-0.0695*** (-6.64)	-	-0.0350*** (-5.99)	-
Interaction of Corporate governance and Stock market cap. indicator (β_1)	0.0495*** (8.27)	-	0.0281*** (8.63)	-
Interaction of Corporate governance and Disclosure indicator (β_2)	0.0505*** (8.15)	-		
Interaction of Corporate governance, Stock market cap. and Disclosure indicators (β_3)	-0.0289*** (-8.19)	-		
Interaction of Stock market cap. and Disclosure indicators (β_4)	0.5891*** (7.63)	-		

Stock market cap. indicator (β_5)	-1.0635*** (-8.60)	3.0407*** (4.78)	-0.8801*** (-8.09)	3.0042*** (4.79)
Disclosure index indicator (β_6)	10.7655*** (2.73)	22.3530** *		
Interaction of Corporate governance and Shareholder suits indicator (β_7)		(3.30)	0.0381*** (8.93)	-
Interaction of Corporate governance, Stock market cap. and Shareholder suits indicators (β_8)			-0.0208*** (-8.60)	-
Interaction of Stock market cap. and Shareholder suits indicators (β_9)			0.5357*** (7.48)	-
Shareholder suits indicator (β_{10})			10.0418*** (2.82)	4.7964* (1.95)
Lag of Log (assets)	-	2.0962*** (13.70)	-	2.0782*** (13.78)
Sales growth	0.0012*** (4.96)	0.0225*** (-2.99)	0.0014*** (6.22)	0.0215*** (-2.89)
Lag of Leverage	-0.0017*** (-3.71)	0.0342** (2.47)	-0.0018*** (-4.19)	0.0332** (2.44)
Pretax margin	-0.0000 (-0.10)	-0.0007 (-0.63)	0.0000 (0.13)	-0.0007 (-0.63)
Capital expenditure / Sales	-0.0000 (-0.23)	-0.0006 (-0.32)	-0.0000 (-0.03)	-0.0006 (-0.33)
External finance	0.0000 (0.97)	0.0013*** (-3.36)	0.0000* (1.74)	0.0013*** (-3.36)
Quick ratio	0.0009 (0.16)	0.1981 (1.12)	-0.0032 (-0.57)	0.1973 (1.13)
R&D / Sales	0.0270*** (2.63)	-0.6353** (-2.02)	0.0260*** (2.65)	-0.6165** (-1.99)
Dividend per share	-0.0027** (-2.21)	0.0238 (0.62)	-0.0043*** (-3.59)	0.0222 (0.59)
Foreign national debt	-0.0343*** (-2.96)	0.7508** (2.19)	0.0019 (0.18)	0.7478** (2.21)
Log (GDP per capita)	-2.1676*** (-2.84)	73.8984** *	-2.1124*** (-3.06)	74.4355** *
GDP growth	0.1244*** (7.50)	1.7847*** (-5.60)	0.0630*** (5.59)	1.7903*** (-5.70)
Corruption index	-0.0745** (-2.31)	2.7775*** (2.98)	0.1912*** (5.16)	2.8155*** (3.06)
Year dummies	yes	yes	yes	yes
Industry dummies	yes	no	yes	no
Country dummies	yes	yes	yes	yes
Observations	4,886		4,886	
Chi-squared statistics	5182.47	33485.43	5695.7	7751.02
Chi-squared (1) (Stock market cap. & Investor protection for the Tobin's Q Equation)	$\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \beta_6$ 6.93***		$\beta_1 + \beta_5 + \beta_7 + \beta_8 + \beta_9 + \beta_{10}$ 7.53***	

Given that the three-stage least squares regressions control for simultaneity between Tobin's Q and CGQ, we can conclude that when a country changes from low to high levels of stock market capitalization, disclosure and/or shareholder suits rights along with better corporate governance, firms tend to experience higher market values. In other words, a country that is transforming its financial and legal systems needs to coordinate the strengths of its financial and legal systems to influence firm-level corporate governance practices and to facilitate the achievement of higher market values.

5 Conclusion

The results presented in this paper indicate that financial orientation and degree of investor protection and their interactions with corporate governance do have significant effects on firm performance. We find that shareholder suits rights/stock market size have monotonic relation with Tobin's Q, while disclosure rights/stock market size have non-monotonic relation with Tobin's Q. Higher financial orientation and investor protection exhibit synergistic effects such that improving stock market capitalization and shareholder protections along with enhanced corporate governance is associated with better firm performance. The results suggest that a market/common-law system is correlated with market value synergies because a stronger investor protection is required for a higher stock market capitalization.

Extending the findings of Anderson and Gupta (2009), the empirical evidence presented in this paper show that firms operating in a market-oriented financial market with weaker investor protection are associated with valuation premiums. The firm valuation premium with market-orientation and development and weaker investor protection is not as large as the valuation premium with more developed financial markets and stronger investor protection, but it is still significant. Moreover, low-levels of stock market capitalization and disclosure index along with better corporate governance are related to certain valuation benefits because bank-orientation explains the need for weaker disclosure rights. These results illustrate that firms operating in a bank-oriented and less developed financial markets with weaker investor protection are associated with valuation discounts compared to firms in more developed financial and legal systems. Based on the results from the different combinations, the adoption of sound corporate governance practices exerts positive influence on market values in bank-oriented countries with weak disclosure rights or with strong shareholder suits rights. One explanation is that given the ability of banks to extract private information from managers and the scarcity of corporate governance, firms may be motivated to improve their governance to counter the country-related weaknesses.

Additionally, two-stage least squares regressions and the system of simultaneous equations using three-stage least squares regression models confirm the robustness of the results. The tests show that the indicators of the stock market and the strength of shareholders protections positively influence the effect of

corporate governance, which in turn contributes to higher firm performance. The results indicate that stock market capitalization and investor protection are significant and crucial for determining the value maximizing level of corporate governance. The migration of a country toward higher stock market size, disclosure and shareholder suits rights is related to better corporate governance, which enhances firm performance. In other words, when a country becomes more market-oriented with enhanced protections of shareholder rights, firms tend to implement better governance practices that are positively correlated with firm performance.

Since our sample consists of 22 countries, the results have policy implications for managers and government regulators globally. Corporate managers, boards of directors, regulators and legislators all over the world have become more sensitive to corporate governance breakdowns and its impact on firm performance. Not only many firms have adopted stricter governance practices but also many countries have passed laws and regulations to increase the level of disclosure and national governance. We show that the outcome from implementing such reforms varies depending on the host country's stock market capitalization, degree of investor protection and the firm's governance structure. Therefore, the cost of these initiatives should be carefully analyzed, and the implementation should be coordinated with the needs and demands of the financial and legal systems.

Future research could investigate how other measures of financial and legal system development interact and affect corporate governance so that an optimal level of corporate governance structure can be established. After taking into account national differences and evolving country and firm characteristics, the optimal corporate governance level can be linked to the maximized firm value for shareholders.

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Appendix

I. As described by the World Bank's Doing Business website, the strength of minority shareholder protections measure protections against directors' misuse of corporate assets for personal gain and incorporates information using the following components for each index.

Extent of disclosure index (0-10)

1. What corporate body provides legally sufficient approval for the transaction?
2. Whether disclosure of the conflict of interest to the board of directors is required by a Buyer's controlling shareholder, a board member, and a 90% owner of Seller?
3. Whether immediate disclosure of the transaction to the public and/or shareholders is required?
4. Whether disclosure of the transaction in published periodic filings (annual reports) is required?
5. Whether an external body must review the terms of the transaction before it takes place?

Ease of shareholder suits index (0-10)

1. Whether shareholders owning 10% or less of Buyer's shares can inspect transaction documents before filing suit?
2. Whether shareholders owning 10% or less of Buyer's shares can request a government inspector to investigate the transaction?
3. Whether the plaintiff can obtain any documents from the defendant and witnesses during trial?
4. Whether the plaintiff can request categories of relevant documents from the defendant without identifying specific ones?
5. Whether the plaintiff can directly question the defendant and witnesses during trial?
6. Whether the level of proof required for civil suits is lower than that of criminal cases?

II. Variable Definitions

Capital expenditure / Sales	Capital expenditure / Sales is the amount of funds used by the firm to acquire or upgrade its fixed assets scaled by total sales.
CGQ (Corporate Governance Quotient)	CGQ is the corporate governance quotient (score) calculated by RiskMetrics, where higher CGQ scores indicate better corporate governance of firms.
Corporate governance	Corporate governance (CG) represents the corporate governance quotient (score).
Corruption Index	The corruption index by ICRG (International Country Risk Guide) measures the degree of corruption within the political system, where higher rating values indicate lower risk of corruption.
Disclosure index	Disclosure index represents the extent of transparency of related-party transactions, where higher values are associated with a better disclosure index.
Dividend per share	Dividend per share is the amount of dividend per share.
External finance	External finance is calculated as the difference between the actual growth rate of total assets and the firm's sustainable growth rate using retained earnings, where the sustainable growth equals $[ROE/(1-ROE)]*100$ and assuming constant ratios of short-term and long-term debt to assets.
Financial orientation and development	Financial orientation and development (F) measures extent of financial market orientation and development with or without dummy and is proxied by stock market capitalization divided by GDP.
Interaction of corporate governance and legal system	Interaction of corporate governance and legal system (CGL) is the interaction term between corporate governance and legal system with or without dummies.
Interaction of corporate governance and financial orientation and development	Interaction of corporate governance and financial market orientation and development (CGF) is the interaction term between corporate governance and financial orientation and development with or without dummies.
Interaction of corporate governance, financial orientation and development and the legal system	Interaction of corporate governance, financial orientation and development and the legal system (CGFL) is the interaction term between corporate governance, financial orientation and development and the legal system with or without dummies. CGFLHH is the

	interaction of CG and high levels of financial orientation and development and legal system dummies. CGFLLH is the interaction of CG and low level financial orientation and development and high level legal system dummies. CGFLLL is the interaction of CG and low levels of financial orientation and development and legal system dummies.
Interaction of financial orientation and development and legal system	Interaction of financial orientation and development and legal system (FL) is the interaction term between financial orientation and development and the legal system with or without dummies. FLHH is the interaction of high levels of financial orientation and development and legal system dummies. FLLH is the interaction of low level financial orientation and development and high level legal system dummies. FLLL is the interaction of low levels of financial orientation and development and legal system dummies.
Foreign national debt	Foreign national debt is the risk rating for foreign national debt in a given year from ICRG (International Country Risk Guide), where higher rating values indicate lower risk.
GDP growth	GDP growth is the annual percentage growth rate of gross domestic product and is from the World Bank's World Development Indicators database.
Legal system	Legal System (L) measures the strength of the legal system with or without dummy and is proxied by the degree of investor protection.
Leverage	Leverage is the ratio of total liabilities to total assets.
Log (Assets)	Log (assets) is the log of the total value of assets in millions of USD.
Log (GDP per capita)	Log (GDP per capita) is the log of gross domestic product per capita using constant 2000 U.S. dollars and is from the World Bank's World Development Indicators database.
Log (Tobin's Q)	Log of Tobin's Q is the log of the market value of assets divided by the book value of assets, where the market value of assets is calculated as the sum of the book value of assets and the market value of common equity less the sum of the book value of common stock and deferred taxes on the balance sheet, and where the market value of equity is the number of shares outstanding times the firm stock price at the end of the year.
Pretax margin	Pretax margin is the pre-tax profit margin calculated as [EBT / total sales].
Quick ratio	Quick ratio is calculated as [(current assets - inventories)/ current liabilities].
R&D / Sales	R&D / Sales is the research and development expenses divided by sales.
Sales Growth	Sales growth is the percentage growth in sales calculated as the change in current period sales divided by the total sales in the previous period.
Shareholder suits index	Shareholder suits index represents the ease and ability of shareholders to take legal actions against officers and directors for misconduct, where higher values are associated with a better shareholder suits index.
Stock market capitalization.	Stock market capitalization is the stock market capitalization divided by GDP and is a proxy for the financial orientation of the country. Stock market capitalization is from the World Bank's World Development Indicators database.