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# Corporate Governance and Regulation: Can There Be Too Much of a Good Thing?

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## Abstract

For a large number of companies from different countries, we analyze how company corporate governance practices and country regulatory regimes interact in terms of company valuation. We confirm that company corporate governance practices play a crucial role in efficient company functioning and shareholder protection, and consequently positively impact valuation. We find little valuation impact from corporate governance measures at the country level, and evidence of possible over-regulation. Corporate governance appears more valuable for large companies and those that rely more heavily on external financing, consistent with the hypothesis that the main role of corporate governance is to protect external financiers.

Keywords: Corporate governance practices, Regulatory regimes, Company valuation

JEL Classifications: G34

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## **1. Introduction**

In this paper, we investigate the impact of country legal regimes and company corporate governance practices on company performance using a cross-country framework. Corporate governance is nowadays a widely used concept with many studies of country legal regimes and company-specific corporate governance practices and structures. These studies have highlighted some aspects of legal regimes and main corporate governance practices that are associated with improved company performance and explored the channels through which corporate governance may affect performance. Although both legal regimes and company practices have been found to matter in corporate governance, by how much each does and the interaction between legal regimes and company practices has not much been researched to date. In this paper, by using data on practices for companies from different legal regimes, we investigate not only the impact of country rules and detailed company-level practices on company valuation but also the degree of substitutability or complementarity between rules and practices in terms of their effect on company valuation. We find that the valuation impact of company corporate governance practices varies by legal systems. In particular, we find evidence of overregulation when a company already has good corporate governance practices.

The importance of corporate governance has been well established in recent years. Corporate governance can reduce agency problems among shareholders and between managers and shareholders, limiting private benefits and expropriation by controlling owners. Better corporate governance also means better monitoring of management, which can translate into higher company performance. Much evidence supports these two channels (see Dennis and McConnell, 2003; and Claessens, 2006, for recent reviews). Typically though this empirical literature has investigated corporate governance from either a country or a company point of view. In their widely cited papers, La Porta et al. (1997, 1998, 2000, henceforth LLSV) show that higher investor protection at the country level is associated with greater access to finance, more capital market development, and higher company valuation. Starting with Gompers, Ishii and Metrick (2003), a large number of studies have investigated how different corporate governance practices at the company level within a single country affect shareholders, bondholders and investors and more generally company behavior and

performance. These single-country studies have tried to identify the individual corporate governance aspects most important for company behavior and valuation.

Studying, however, in one framework country level corporate governance regimes and company corporate governance practices can be important for several reasons. For one, companies' specific corporate governance choices have to be considered in light of the corporate governance regime in the specific country. Take two similar companies implementing exactly the same governance practices but located in two different countries. Identical corporate governance practices may be valued differently by investors depending on whether they are required or voluntarily adopted. Also shareholders may consider some aspects of the legal regime in one country as substitutes to the same corporate governance practices used in another country. Or shareholders may prefer to invest in companies whose country of incorporation guarantees better protection in the eventuality of legal disputes, irrespective of the company corporate governance practices. Correspondingly, shareholders may value corporate governance practices differently depending on the legal regime in the country. Second, corporate governance practices are not independent of the legal regime and vice-versa. Given current laws, a company may not have a choice—except to incorporate in another jurisdiction—but to adjust its corporate governance practices. This discussion makes clear that both the strength of country protection and companies' corporate governance practices are aspects to account for when studying the impact of corporate governance of companies. Only by taking both rules and practices into account, can we hope to detect which practices affect performance, the degree of complementarity or substitutability between practices and legal regimes, and the overall magnitude of impacts of practices and legal regimes on performance.

Doing such an analysis can be complex though. In a single-country context, company-level studies can focus on those few corporate governance aspects salient for the particular country. In a cross-country setting, the variety in corporate governance practices increases. Also given differences in legal regimes and consequent requirements, it becomes more important to capture as many corporate governance aspects as possible, but this is difficult due to the lack of a comprehensive

coverage of sufficient aspects of corporate governance practices.<sup>1</sup> The fact that studies for different countries looking at the association between board independence and performance have found contradictory results (e.g., Hermalin and Weisbach, 2003) may be related to the lack of comparable data. Several of the cross-country studies have had to resort to using a broad measure of corporate governance (e.g., in the form of an index covering aspects of transparency, independence, accountability, social responsibility and discipline in one number). This does not allow one to study individual corporate governance practices, which can be an important omission. For US companies, for example, Bebchuk et al. (2004) find that not everything matters equally for performance, and that associations between a broad index and performance may be driven by only few aspects.

More generally, with more details on corporate governance practices one can answer specific questions like: Is it more important to have an independent board or to leave more monitoring powers to shareholders? Is greater transparency beneficial to shareholders? How do these aspects depend on the local legal regimes? Are there interactions between certain aspects of legal regimes and corporate governance practices in terms of company performance? Furthermore, using more detailed data one can investigate interactions between corporate governance and (access to) external financing. Corporate governance has been found to help relax external financing constraints by alleviating signaling problems and ensuring managers exert efforts on value-maximizing projects and do not expropriate private benefits. Whether these results hold across countries and how they depend on specific corporate governance regimes and practices is subject to study.

The Institutional Shareholder Services (ISS) dataset provides us with a unique opportunity to investigate the interaction between performance and the corporate governance regime at the country and company's level in a cross-country framework.<sup>2</sup> The coverage of companies and countries is quite wide, approximately 5300 US companies and 2400 non-US companies from 22 advanced economies for the period 2003 – 2005. In contrast to many existing empirical studies using only a broad

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<sup>1</sup> For instance, Gompers, Ishii and Metrick (2003) cover only the presence of anti-takeover provisions (ATPs) in companies' charters, thus potentially ignoring other important governance practices.

<sup>2</sup> Two studies also using ISS data, but done independently are Arel, Aggarwal, Stulz and Williamson (2007) and Chhaochharia and Laeven (2007).

measure of the company's corporate governance practices in the form of an index, ISS provides individual corporate governance practices of each company. It covers, among others, information on the composition and independence of boards and committees, the level of shareholders' involvement in the company's decisions, and relations with the auditors. For a cross-country analysis, it will also be important to cover in detail the countries' institutional environment, especially the different legal frameworks and other various aspects possibly affecting the impact of corporate governance practices. Fortunately, much progress has been made in recent years to document aspects of countries' legal regimes, and we draw on this literature.

Using these data, we find that across the 23 countries two corporate governance practices are positively and significantly associated with performance: the degree of board independence, and the existence and independence of board committees. Also, absence of entrenched boards and higher investor protection at the country level are positively associated with performance, but this evidence is not robust under all specifications. The corporate governance channels are found to be stronger for companies in highly financial dependent industries. We also find evidence that strong corporate governance practices pay off less for small companies, maybe because strong corporate governance practices involve costs in terms of monitoring, time and resources which offset the benefits.

Importantly, we find interaction effects between the strength of legal protection and the companies' corporate governance practices. In particular, we find that country level investor protection matters little when companies have weak corporate governance practices, suggesting that country legal protection cannot substitute for weak company corporate governance practices. In contrast, for corporations with strong corporate governance practices, excessive country regulation can harm valuation, consistent with a hypothesis that excessive regulation can harm managerial initiatives and lead to lower return and valuation. This finding has important consequences from a regulatory viewpoint. If high corporate governance practices in the form of strong, independent, and pro-shareholder boards are already in place, as

for the average US company, there may be a cost of increasing regulatory burdens.<sup>3</sup> On the contrary, if companies of a specific country tend to adopt weak corporate governance practices, regulatory intervention may be of little value. This is the case, for instance, for Italian and Belgian companies, which rank well below the overall sample mean for level of board entrenchment and independence, or existence and independence of board committees. Of course, this is not to say that no forms of government rules or interventions are useful in these countries and for these types of corporations. Our conclusion has to remain limited to the type of regulatory intervention captured in our index of legal regimes. But, our finding does suggest that regulations need to be well-designed and that there can be cost from overregulation.

We contribute to the literature in methodological aspect by using detailed panel data on companies' corporate governance practices, which means we can be less concerned about reverse causality driving our results. Using detailed aspects of corporate governance, we can also disentangle the channels through which corporate governance acts. Furthermore, our results are robust to the inclusion of different control variables, using different statistic techniques and using several performance variables (Tobin's Q and ROA). Besides these, we also add in methodological aspects by analyzing the role of company external financing needs and size without introducing endogeneity problems. We show that corporate governance acts especially as a bonding-monitoring-discipline device for those companies that can expect to require more external financing by applying the Rajan and Zingales (1998) methodology of identifying industries that heavily rely on external financing.

The paper is structured as follows. Section 2 reviews the relevant literature. Section 3 describes corporate governance indicators and the main financial data used in the analysis, and the empirical methodology employed. Section 4 discusses the results and section 5 concludes.

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<sup>3</sup> This is in line with the increasing debate among academics, politicians, and practitioners about the negative effects of the introduction of the Sarbanes-Oxley Law.

## 2. Literature

We are interested in disentangling various aspects of corporate governance, inter-relating these aspects with country-specific measures of legal investor protection and studying their association with performance. Such analysis can teach us whether the implementation of certain corporate governance practices and legal requirements is reflected in higher company valuation and better performance in all countries. The (US) based evidence supports that (some) corporate governance practices can lead to higher valuation and rates of return. The first such paper, Gompers, Ishii and Metrick (2003) find that the more anti-takeover provisions (ATPs) a company has in its charter, the lower its performance.<sup>4</sup> Since then a number of papers have documented for the US positive relationships between corporate governance practices and valuation, rates of return and performance (e.g., Bebchuk, Cohen, and Ferrell, 2004). Studies for other countries (e.g., India (Black et al. 2007), Korea (Black et al. 2006; Black and Kim 2007), Brazil (Nenova 2005), Bulgaria (Atanasov et al. 2007), Czech Republic (Glaeser, Johnson, Shleifer, 2000)) have found similar results.

However, theoretical analysis has also suggested that there can be trade-offs with respect to corporate governance requirements. Burkart, Gromb, and Panunzi (1997) argue in particular that too much monitoring and legal protection may hurt managerial initiative and consequently lower returns and worsen company valuation. They argue that constraints on managers through monitoring may be costly precisely because managerial discretion comes with benefits. Managers are less inclined to show initiative, like searching for new, profitable investment projects, when shareholders are more likely to interfere. Along the same lines, Boot, Gopalan and Thakor (2006) find that corporate governance controls may sometimes prevent management from doing what it should and thereby actually exacerbate agency problems.

These theoretical papers suggest that there can be trade-offs between the gains from monitoring and those from (more) managerial initiative, and too intensive monitoring can be inefficient. The trade-off is likely to depend, among others, on the degree of interaction between internal (boards, committees, company charters,

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<sup>4</sup>However, some other studies show that this methodology not only can be incorrect (Arcot and Bruno, 2006) or not associated with performance (Core et al., 2006), but when valid, its association with performance is not necessary monotonic (Hannes, 2002).

disclosure rules) and external (takeovers, product market competition, ownership structure, legal protection) mechanisms of corporate governance. The empirical literature has indeed identified some examples of counter-effects of strong corporate governance. Gillan, Hartzell, and Starks (2003) point out that there is a difference between strong corporate governance and optimal corporate governance, as stronger corporate governance does not necessarily mean better performance and higher valuation because costs may offset the benefits. A number of papers have found that the introduction of some new regulations can be counterproductive for valuation. Chhaochharia and Grinstein (2006) and Wintoki (2007) find that the Sarbanes-Oxley Act in the US hurts some companies' valuation, and Litvak (2007a and 2007b) finds that foreign companies cross-listed in the US from well-governed countries reacted worse to the Act, as did already high-disclosing companies.

Furthermore, there is at least anecdotal evidence that the implementation of corporate governance practices may not be the result of optimal contracting, but of other pressures. Worldwide, there is an increasing appetite for more regulation and rigid laws (besides the Sarbanes-Oxley Act and similar efforts in other countries, there are calls for laws requiring increased hedge funds transparency and reforms of the company laws), especially after the recent wave of corporate failures. Increasingly, public opinion, press and institutional investors are asking for more rigidity, and more and more sophisticated corporate governance practices are being required of companies. But many of these requirements do not have strong theoretical, let alone empirical support that they help with company performance. It also raises the risk of corporate governance becoming a tick-box exercise, where the more boxes ticked, the better corporate governance is considered, without necessarily being supported by empirical evidence or theoretical analyses (Arcot and Bruno, 2006).

This is not to say that corporate governance does not matter. Cross-country work has shown that corporate governance reforms can pay off in terms of higher valuations. Dahya, Dimitrov and McConnell (2006) in a cross-country study show the specific importance of board independence and board committees. Studies have found though that the corporate governance aspects that matter for valuation vary by country. A company, for example, may not have an independent board, but may have strong



board committees and a non-entrenched board, which in some institutional environments may still provide for appropriate internal and external (market) monitoring, but not in others. By using cross-country data, one can investigate what the impact of higher legal protection on performance is relative to corporate governance practices exercised at the company level (and vice-versa). Only a few studies have so far looked at both these perspectives. Using data on company corporate governance practices across countries, Durnev and Kim (2005) and Klapper and Love (2004) show the impact of corporate governance to be a decreasing function of legal protection. Doidge, Karolyi and Stulz (2004) show that country effects dominate company corporate governance practices in determining valuations. Durnev and Fauver (2007) draw attention to the links between corporate governance and government policies, including corruption and predatory behavior. They find that in countries with more predatory governments, companies practice weaker corporate governance and disclose less financial information. This cross-country work has, however, only started to address the interface between legal regimes and corporate governance practices. For instance, it is not clear, given different legal regimes, whether the constitution of board committees is important, whether their independence plays a role, and to what extent these practices they impact company performance.

Corporate governance is both a way to reduce agency costs and limit pet projects, leading to more efficient investments, boosting growth and performance and a way to protect investors from managerial expropriation, thus easing companies in accessing financing and enhancing valuation. In particular, corporate governance can mitigate the problem of inefficient access to finance (credit rationing). Borrowers with large private benefits for which performance conveys little information about managerial actions, are more likely to see their positive NPV projects turned down by the capital markets (Tirole, 2006). In particular, when investor protection is low and corporate governance practices are hard to enforce, there will be a limit on the fraction of future cash flows that companies can credibly commit to outside investors (“limited pledgeability” of cash flow, Almeida and Wolfenzon, 2005). It is therefore important for the company to bond itself credibly to higher quality corporate governance, which can involve the cross-listing or the use of ADRs (Doidge et al., 2004). In general, a

company's cost of funds will depend on the extent that investors expect the company to be governed well after the funds have been raised. Corporate governance is in great part about mitigating this commitment problem: "*Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment*" (Shleifer and Vishny, 1997).

This commitment problem is particularly large for companies that rely heavily on external financing.<sup>5</sup> But a test whether companies which are heavy users of external finance are valued higher when better corporate governance practices are in place can not unambiguously show that corporate governance reduces the agency problems of moral hazard and adverse selection. The reason is that the association between corporate governance and company external financing can arise from reverse causality, that is, companies improve corporate governance practices (only) when raising new funds. Conversely, external financing could trigger changes in companies' corporate governance structures, in part as investors require changes. Therefore, using actual external measures of external financing could create endogeneity problems.

In a seminal paper, Rajan and Zingales (1998) show how external financial dependent companies grow more in countries with greater financial development. They solve the simultaneity bias—financially more developed countries having companies with a greater degree of external financing—by identifying an industry's need for external finance from data for US companies. The US can provide a benchmark for external financing dependence if two conditions hold: capital markets in the US are relatively frictionless, and a technological demand at the industry level for external financing carries over to other countries. We use a similar argument to investigate whether companies belonging to industries that are financially more dependent are higher valued when displaying better corporate governance practices or

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<sup>5</sup> Lombardo and Pagano (2002) formalize the above argument in a simple model. They argue that corporate governance, and more generally the legal environment, can affect the severity of agency problems between company insiders and outside shareholders in two ways. First, it may directly reduce the private benefits that managers are able to extract from companies. This shifts the demand function upwards, thus increasing the quantity of external equity and reducing the cost of capital to companies in equilibrium. Second, it reduces the auditing and judicial costs that shareholders potentially incur. This effect shifts the supply curve down, thus again increasing the quantity of available external finance and lower the cost of capital. Overall, the effect on the equilibrium quantity is always positive.

facing stricter regimes. This provides a test whether corporate governance specifically adds value for those companies most in need of external financing because shareholders rights are more protected, without the simultaneity problems. Our analysis differs from Rajan and Zingales methodology, besides using company-specific corporate governance measures, in that we do not limit our analysis to manufacturing industries only, but include all companies (except for financial institutions).

Another important variable affecting the impact of corporate governance on company valuation may be size. In the general finance literature size has been found to matter for company performance. Small companies may have better growth opportunities, reflected in higher valuation (Shin and Stulz, 2000). Size also proxies for company age and older and larger companies tend to have lower ratio market-to-book ratios. Beck et al. (2005) find a size effect in the association between financial development and growth, possibly because smaller companies face tighter credit constraints than large companies. There might also be a relationship between size and corporate governance practices. Some empirical evidence finds that strong corporate governance is more beneficial for large than for small companies. For instance, Chhaochharia and Grinstein (2006) find that the Sarbanes-Oxley Act was more harmful for small companies, for which the costs of complying with corporate governance rules outweighs the benefits.

In order to limit the endogeneity problem between corporate governance choices and company size, we again apply the Rajan and Zingales methodology by interacting companies' corporate governance with a proxy for size at the industry level. Specifically, we test whether companies belonging to industries that have in the US on average larger sized companies perform better if they have stronger corporate governance than companies belonging to small-size industries. Among others, such evidence will highlight whether strong corporate governance is equally beneficial for large and small companies.

Performance would not only need to differ with corporate governance practices, external financial dependence and size. They can also be industry dependent, varying with company leverage, degree of assets intangibility or because of cross-listing on

other, and higher standard exchanges. We therefore include certain control variables to capture these company characteristics.

Besides affecting the availability and cost of external financing, and therefore valuation, corporate governance can affect economic performance in other ways too. By putting more pressure on management and punishing management for bad performance, better corporate governance encourages managers to pursue more value-maximizing projects, be more efficient in company operations, and therefore increase value added (Jensen, 1986). We therefore also analyze how companies' return on assets relates to corporate governance practices and legal regimes.

### **3. Data and Econometric Models**

#### **Data on corporate governance practices analyzed**

The corporate governance data come from the proxy voting agent Institutional Shareholder Services (ISS). ISS gathers corporate governance information of approximately 5300 US companies and 2400 non-US companies from Canada, Europe, East Asia and Pacific for the period 2003 – 2005. The non-US companies it covers are all large and belong to the main indices of their respective country stock markets. For instance, the UK companies mainly belong to the FTSE350 index. The US coverage is wider as it covers also mid- and small cap companies. Therefore, to avoid over-sampling problems we select a sub-sample of US companies, specifically all those belonging to the S&P500 index. The sample then reduces to 7078 total company-year observations.

In terms of corporate governance practices, ISS documents among others the presence or lack thereof of the following:

- board independence: whether the board is controlled by a majority of independent outsiders;
- nomination, compensation, and audit committees composition: whether the committees exist and if they consist solely of independent outsiders;
- governance committee composition: whether the committee exists or not;

- degree of board entrenchment: whether the board is annually elected (not staggered), whether no poison pills are in place, majority vote is required to amend charter/bylaws or to approve mergers;
- whether chairman and CEO are separated;
- whether former CEO sits on the board;
- relations with the auditors: whether auditors are ratified at the recent shareholder meeting, and the consulting fees (audit related and others) paid to auditors are less than audit fees; and
- whether the CEO is not listed as having a related-party transaction in the proxy statement.

In addition to this information ISS collects information on corporate governance practices which we do not consider in our analysis. This is in part because of limited variability within countries among some of these corporate governance practices, which may be the consequence of legal requirements. For instance, the percentage of companies where shareholders may act by written consent is 99% for European and Asian companies: the inclusion of such items in our index would confound the econometric results.<sup>6</sup> ISS also gather information on the size of the board, on whether directors have participated in ISS education programs, or on the authority of the board to hire own advisors. Such data are generally available, but their associations with performance are not clearly theoretically motivated. We, therefore, exclude them from our analysis to avoid any spurious results. Finally, there are some practices with many missing or non available observations which would reduce our sample too much.

Using the above provisions and on the basis of earlier work and theoretical analysis, we construct five main different indices.

1. *Committees index*. Codes of best practices stress the importance of the committees as a corporate governance device. In particular, the presence of a

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<sup>6</sup> The problems of missing observations and limited variability concern especially the following corporate governance practices: shareholders may act by written consent or call special meetings, anti-takeover characteristics (TIDE, sunset, trigger, etc) which are typical to the US but not to other markets, the existence of interlocks among compensation committee members, proxy contest defense, shareholders vote on directors selected to fill vacancies, board attendance. For these reasons, we can not construct all the corporate governance provisions of Bebchuk et al (2004). Of the 18 provisions considered by Bebchuk et al., for example, only four apply our sample us (limits to special meeting and written consent, no cumulative vote, blank check), while the other 14 are typical for the US only. Regardless, these 14 provisions do not appear to be significant in the Bebchuk study.

nomination, compensation, audit and governance committee should guarantee a more transparent procedure of directors' appointments, compensation approval and internal audit, respectively. We initially assign one point for each committee a company has: the resulting index, **COMM1**, therefore considers only the existence or not of a committee, and it ranges from 0 to 4. However, codes of corporate governance also advocate for a certain degree of independence of the committee members. We therefore create another index that gives points respectively for strict independence of nomination, compensation and audit committees: the resulting index **COMM2** ranges from 0 to 3.

2. *Entrenchment index.* We follow Bebchuk et al. (2004) and we give one point each if a company has no poison pills in place, if the board is annually elected (no staggered), if a majority is required for mergers and if a majority is required for charter amendments (no supermajority). Differently from Bebchuk et al., we do not have data on golden parachutes, and on charter and bylaws separately. The resulting index (**BEBCHUK**) varies from 0 to 4.
3. *Board independence index.* We construct a dummy **INDEP1** that takes the value 1 if the board consists of a majority of independent members, as judged by ISS. We also have information of the presence of the former CEO on the board and of the separation between CEO and Chairman, which are both proxy for a greater division of the powers in the board, and hence of greater independence. We therefore also construct the index **INDEP3** which, in addition to **INDEP1**, considers the presence of the former CEO on the board and whether the CEO and the Chairman are separated or not (with the index to vary from 0 to 3).
4. *Transparency index.* In addition to the existence of the audit committee, a higher degree of transparency can be guaranteed by the ratification of the choice of auditors at the shareholders' annual meeting. Further, if consulting fees paid to the auditors are less than audit fees, the existence of possible conflicts of interests will be less and the credibility of the auditor's report will be higher. Recent high-profile frauds and some accounting literature (e.g., Kohlbeck and Mayhew, 2004) highlight the use of related party transactions as a way of manipulation profits. We, therefore, give points if the auditors are

ratified at the most recent annual meeting, if the fees are strictly audit fees, and if the CEO is not involved in related party transactions. The index **TRANSP** goes from 0 to 3.

### **Data on country-level indicator of investor protection**

Consistently with the existing literature, we consider both de-jure and de-facto aspects of investor protection: the LLSV anti-director index as revised by Djankov et al. (2007), the International Country Risk Guide (ICRG) Law and Order index, and the anti-self-dealing index as elaborated by Djankov et al. (2007). The widely used and cited indicator anti-director index of La Porta et al. (1998) consists of six sub-indices capturing the possibility of voting by mail and of depositing shares, aspects of cumulative voting, oppressed minority, preemptive rights, and the percentage of share capital to call a meeting. This index covers aspects of de-jure regulation since it does not control for the level of regulatory enforceability. On the contrary, the ICRG Law and Order Index assess de-facto aspects of the law and order tradition of a country. For the ICRG index, we take the average over the three years 2002-2005. Finally, we use the self-dealing index constructed by Djankov et al. (2007) which is the sum of two indices: the ex-ante private control against self-dealing and the ex-post control against self-dealing. The ex-ante index covers disclosure and approval requirements imposed by law. The ex-post control of self dealing mainly looks at enforceability issues as it scores how easy it is for minority shareholders to obtain redress through the courts in case of legal disputes (standing rights to sue, ease of holding management or the body liable for civil damages).

We normalized these three legal indices on a scale from 0 to 1 and we construct three investor protection indicators:

- INV\_PROT1: the sum of the LLSV revised anti-director index and the ICRG Law and Order index;
- INV\_PROT2: the sum of INV\_PROT1 and the anti-self dealing index;
- INV\_PROT3: the product of the revised anti-director index with the ICRG Law and Order Index so as to get a measure of the effective degree of investor protection (as in Durnev and Kim, 2005).

## Summary statistics

Of the total 7078 observations in the ISS dataset, we exclude in the main regression results financial companies and companies of countries with no La Porta et al. (1997, 2006) LLSV index (Bermuda, 9 observations) or for which we have only one year observation: China (2 observations), Cayman Island (1 observation), Israel (2 observations), Luxemburg (3 observations), Thailand (1 observation), and South Africa (1 observation). We are then left with a total of 5857 company-year observations, for which we have a complete set of information in terms of the existence and independence of board committees (COMM1 and COMM2). However, we progressively lose observations in the construction of some of the other corporate governance indicators. In particular, we lose 228 observations in the creation of BEBCHUK, 750 for INDEP1, 2348 for INDEP3, and 2829 for TRANSP. Among others, we have very limited information on the level of board independence of Austrian companies (5 observations), and the separation of the roles between the Chairman and the CEO in Japan (3 observations), Portugal (3 observations), and Spain (5 observations). Due to the problem of missing observations, in the following analysis we will mainly focus on three indicators for which we have the largest number of observations: COMM1, BEBCHUK, and INDEP1.

Table 1.A reports summary statistics of the governance indicators described above by country. The analysis of the data by country shows an interesting picture of the differences in corporate governance practices across countries. Ireland scores the highest (2) in the INV\_PROT1 indicator, followed by UK (1.97) and Singapore (1.89). Greece and Italy are at the bottom of the ranking (0.98). Similar differences obtain for INV\_PROT2 and INV\_PROT3. US companies tend to have all four board committees (on average COMM1=3.94), similar to Canadian companies (COMM1=3.82). At the bottom in terms of board committees, we find Danish (COMM1=0.11) and Austrian companies (COMM1=0.31). Danish companies stand out also for the absence of independent committees (COMM2=0), while again US (COMM2=2.66) and Canadian (COMM2=1.97) companies are well above the sample average of COMM2=1.04. Companies in Hong Kong (BEBCHUK=2.06) tend to give more power to shareholders. In terms of board independence, Italian and Japanese



companies rank the lowest on the two corporate governance indicators (INDEP1, INDEP3). There is not much variation in the TRANP index across countries.

Table 1.B shows the percentage of incidence of corporate governance provisions per indicator. For the COMM1 indicator, most companies have an audit committee (83%), but only in 40% of the cases do companies have an audit committee consisting of a majority of independent members. Similarly, in roughly half of cases, do companies have a nomination committee (52%), but only in 26% of the cases do we observe independent nomination committees. Only in 31% of cases do companies have a governance committee. The absence of poisons pills (80%) clearly stands out as the driver of the BEBCHUK index, while in only very few cases (10%) is a simple majority required to amend the company charters/bylaws. Roughly half of the companies have a majority of independent board members (46%), a percentage which increase to 65% for INDEP3 due to a lower number of observations. In 40% of the cases does the company have a separated CEO/Chairman. In 91% of company-year observations is the CEO considered not to have related party transactions (TRANSP).

Table 1.C shows the overlap (or lack thereof) between country-level requirements and the main corporate governance practices. For instance, it shows the relation between the level of investor protection (INV\_PROT1) and the existence of committees (COMM1). The majority of companies in countries with an INV\_PROT1 index less than 1.7 have all board committees (20.45%), an independent board (26.85%), and a BEBCHUK index equal to 1 (18.60%). However, when INV\_PROT1 index is equal or greater than 1.7, companies tend to have only one board committee (25.7%), a not independent board (46.33%), and a BEBCHUK index equal to 1 (40.06%). There is, therefore, not a clear and monotonically relation between investor protection at the country level and the existence of board committees. The largest majority of companies have a low BEBCHUCK indicator, but there is an equal split in terms of board independence across the level of investor protection INV\_PROT1.

### **Financial data**

For US companies, financial data are obtained from COMPUSTAT, while for non-US companies we use Worldscope data. As mentioned before, our companies are

large in size, with an average total assets of \$US10 billion and an average total sales of \$US7.9 billion (Table 1.D).

We use Tobin's Q as our main performance measure. As in La Porta et al. (2002), Doidge, Karolyi, and Stulz (2004), and Durnev and Kim (2005), we define Tobin's Q as the sum of total assets plus the market value of equity less book value of equity, over total assets. The average Tobin's Q of the companies in our sample is 1.66. In our robustness checks, we also use Return on Assets (ROA), where ROA is defined as the ratio of the earnings before interests, taxes, depreciation and amortization (EBITDA) to the book value of assets. The average ROA in our sample is 0.06.

As control variables, we use the logarithm of sales (LOG\_SALES), the ratio of property-plants-equipments to sales (PPE\_SALES), the 1-year growth of sales (G\_S), the ratio of capital expenditures to sales (CAPEX\_SALES), the ratio of total debt to common equity (D\_E), and a dummy ADR equal to 1 if a company has American Depository Receipts traded.<sup>7</sup>

We construct our measure of external financing dependence as Rajan and Zingales (1998) do. The Rajan and Zingales industrial measure refers to only US manufacturing industries for the year 1980; as our data are for the period 2003-2005, we update the measure of external financing dependence for all 2-digit SIC code industries, using the COMPUSTAT universe of US companies for the year 2000. Rajan and Zingales used the 3-digits ISIC code for identifying industries, which typically corresponds to the 2-digits SIC code. A company's dependence on external finance is defined as the ratio of capital expenditures minus cash flow from operations divided by capital expenditures.<sup>8</sup>

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<sup>7</sup> We winsorize at the 1% and 99% percentile Tobin's Q, G\_S, CAPEX\_SALES, and D\_E to limit the effects of serious outliers. As common in the literature, we also drop observations with negative values for common equity.

<sup>8</sup> Differently from Rajan and Zingales (1998), for the period 2000, the variable cash flow from operations (COMPUSTAT item 110) is no longer available due to a change in accounting rules. Cash flow is therefore calculated as the sum of COMPUSTAT items 123, 125, 126, 106, 213, and 217, plus the change in working capital (the sum of COMPUSTAT items 302, 303, and 304). Capital expenditures are calculated as the sum of COMPUSTAT items 128 and 129. A limited number of industries consist of a very small number of companies, which could lead to biases in the constructed index. We therefore exclude the values at the 2.5% and 97.5% percentile.

Finally, we construct a proxy measure of each industry's natural size, measured by the industry  $k$ 's share of employment in companies with more than 20 employees in the United States.<sup>9</sup> As Beck et al. (2005) do, we find a very small positive correlation between Large Firm Share and External Dependence, which suggests that the industry characteristics explaining company size are not the same as the characteristics explaining technological dependence on external finance.

### **Econometric model and strategy**

Besides univariate analysis, to investigate the associations between corporate governance, external financing dependence and performance, we use the following econometric specifications.

### **Corporate governance and performance**

To capture the associations of country and company governance with performance, we regress Tobin's Q on indicators of companies' corporate governance and the strength of legal environment, while controlling for industry, time, and other company characteristics, over the period 2003 – 2005. As in Durnev and Kim (2005), we use country random effects because some of the explanatory variables are at the country level, precluding the use of country fixed effects. Furthermore, the Breusch-Pagan (1980) test suggests the presence of unobserved country level heterogeneity. Specifically, we estimate the following country, random effects regression with time and industry fixed effects:

$$Y_{i,t}^c = \alpha + \beta_1 \cdot INV\_PROT^c + \beta_2 \cdot CG_{i,t}^c + \gamma \cdot INV\_PROT^c * CG_{i,t}^c + (Firms\ controls)_{i,t}^c + \varepsilon_{i,t}^c, \quad (1)$$

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<sup>9</sup> Such proxy is available from the 2000 US Census for industries classified according to the 3-digit NAICS code. We then converted the 3-digit NAICS into 2-digit SIC code for the following reasons. First, the original test by Rajan and Zingales (1998) mainly uses 3-digit ISIC codes, that corresponds to the 2-digit SIC codes. Secondly, the number of industries classified according to the 3-digit NAICS code is almost double the number of companies classified according to the 2-digit SIC code. Since in our regressions, we control also for industry fixed effects, besides countries and time dummies, this could lead to less degrees of freedoms. There are few cases where more than one industry classified according to the 3-digit NAICS code corresponds to one industry classified according to the 2-digit SIC code. In such circumstances, we take the average.

where  $Y$  is Tobin's Q, the variable  $INV\_PROT$  is the country-level investor protection indicator, while  $CG$  is the vector of the company corporate governance indicator(s) as described above. And in terms of indexes,  $c$  is country,  $i$  is company, and  $t$  is time. Theoretical and empirical literature predict the coefficients  $\beta_1, \beta_2$  to be positive and  $\gamma$  to be negative. By summing various coefficients, we can find the overall economic effect of an increase in the investors' protection strength in the presence of different company's corporate governance practices.

To capture the differences in valuation for a given level of country and company-level corporate governance, we divide companies according to their level of country and company-level of corporate governance, i.e., above or below the respective medians. We, therefore, end up with four groups: companies with both high (above the median) levels of country and company corporate governance (*HiHi*), companies with high level of country investor protection but low (below the median) level of company corporate governance (*HiLo*), and vice versa (*LoHi*), and finally companies with low standards of both country and company corporate governance (*LoLo*). Besides univariate analysis documenting the differences in performance among these four groups of companies, we perform the following country random effects regression with time and industry fixed effects:

$$Y_{i,t}^c = \alpha + \beta_1 \cdot Hi^c Hi_{i,t}^c + \beta_2 \cdot Hi^c Lo_{i,t}^c + \beta_3 \cdot Lo^c Lo_{i,t}^c + (Firms\ controls)_{i,t}^c + \varepsilon_{i,t}^c, \quad (2)$$

where  $Y$  is again Tobin's Q, *HiHi*, *HiLo*, *LoLo* are dummy variables equal to 1 if the company corporate governance structure is characterized by high standards at both country and company levels (*HiHi*), by high standards at the country and low standards at the company level (*HiLo*), or by low standards at both the country and company levels (*LoLo*), and 0 otherwise. The country-level indicator is  $INV\_PROT1$ , divided between high (*Hi*) and low (*Lo*) according to the 23-countries median. The company-level governance indicators are *COMM1*, *COMM2*, *BEBCHUK*, *INDEP1*, *INDEP3* and *TRANSP*, which are divided between high (*Hi*) and low (*Lo*) according to their overall sample median. The estimated coefficients  $\beta_1, \beta_2, \beta_3$  provide then the differences in performance, all compared to the base case, i.e., those companies with

high corporate governance standards in the presence of low country investor protection (*LoHi*).

In both specifications (1) and (2) we control for the usual variables found to be associated with performance, i.e., size, tangibility of assets, and cross-listing in other exchanges, for which we use respectively the logarithm of sales (in US\$), the ratio of property, plants, and equipment (PPE) to sales, and a dummy equal to 1 if a company has American Depository Receipts (ADRs) traded. As argued by Durnev and Kim (2005), we use sales because it is less affected than earnings by diversion, manipulation, and different accounting rules; however, our results are robust to the use of the logarithm of total assets. We use the ratio of PPE to sales because companies operating with higher proportions of fixed assets (and lower proportions of intangible assets) may find it less necessary (or optimal) to adopt stricter governance mechanisms to signal to investors that they intend to prevent the future misuse of intangible assets (Klapper and Love, 2004). Finally, empirical evidence suggests that companies cross-listed on US exchanges are valued higher (Doidge et al., 2004; Coffee, 2002). Regressions (1) and (2) include time fixed effects, 2-digit SIC code industry fixed effects, and clustered standard errors at country level as this is the source of possible autocorrelation. We do not use country fixed effects because the *INV\_PROT* acts as a country dummy already, nor company fixed effects because, as in Gompers et al. (2003), we do not have enough variability in the corporate governance indicators over the short time period we consider. As is common in this literature, financial companies are excluded from the main regressions, but we do perform robustness checks including financial companies.

### **Robustness checks**

We perform three sets of robustness checks: a. at the company-level; b. regarding the country-level indicator used for investor protection; and c. regarding the overall governance impact.

### **a. Robustness of the control variables, sample and performance measure**

We use an alternative set of controls as in Black et al. (2005): the ratio of capital expenditures to sales, the ratio of total debt to equity, and 1-year growth of sales, to control for investment intensity, leverage, and growth opportunities, respectively. We also check whether our results are still valid with the inclusion of financial companies (SIC code 6). Finally, we use ROA as an alternative accounting measure of performance.

### **b. Robustness of the country-level indicator of investor protection**

We check the robustness of both the association of governance with performance and the differences among groups of companies by using alternative country-level indicators of investor protection *INV\_PROT2* and *INV\_PROT3*.

### **c. Robustness of the overall governance impact on performance**

To confirm the impact of the incremental effect of higher country-level investor protection, we run the following regression:

$$Y_{i,t}^c = \alpha + \beta_1 \cdot INV\_PROT^c + \beta_2 \cdot INV\_PROT^c * Hi_{i,t}^c + \gamma \cdot Hi_{i,t}^c + (Firms\ controls)_{i,t}^c + \varepsilon_{i,t}^c, \quad (3)$$

where  $Y$  is again Tobin's Q,  $INV\_PROT$  is the country-level indicator  $INV\_PROT1$ , and  $Hi$  is a dummy equal to 1 if the company-level corporate governance indicator is above the median, and 0 otherwise. The coefficient  $\beta_1$  indicates the investor protection effect for companies with low ( $Lo$ ), i.e., below the median, corporate governance practices. The coefficient  $\beta_2$  indicates the *incremental* effect for companies with high ( $Hi$ ), i.e., above the median, corporate governance practices, all relative to poorly governed companies ( $Lo$ ). The sum of the coefficients  $\beta_1 + \beta_2$  indicates the *total* effect of country-level investor protection on performance for highly-governed companies ( $Hi$ ). Finally, the coefficient  $\gamma$  tests whether the performance of highly-governed companies is different from that of poorly-governed ones when country-level investor protection is weak.

### Corporate governance, external financing dependence, size and performance

To test whether companies belonging to industries that typically are more financially dependent perform better with better corporate governance, we use the Rajan and Zingales methodology to overcome causality issues in the analysis of the associations between corporate governance, external financing dependence and performance. Specifically, we interact the measure of industry external financing dependence with a measure of the company's corporate governance quality to estimate the following country random effects model:

$$Y_{i,k,t}^c = \alpha + \beta \cdot GOV_{i,t}^c \cdot EXT\_DEP_k + Size_{i,t}^c + (Fixed\ effects)_{k,t}^c + \varepsilon_{i,k,t}^c, \quad (4)$$

where  $Y$  is Tobin's Q,  $EXT\_DEP$  is the Rajan and Zingales measure of dependence on external financing at the industry level  $k$ , and  $Size$  is the logarithm of sales.  $GOV$  is the country ( $INV\_PROT$ ) or company-level ( $CG$ ) corporate governance or their combination  $INV\_PROT * CG$ , with all the indicators as defined before. The regression is run with 2-digit SIC code industry and time fixed effects, with robust standard errors clustered at the country level. The United States is dropped as it is the benchmark.

If corporate governance matters more for external financing dependent companies, we would expect the coefficient  $\beta$  of the interaction term to be positive and significant. If so, this would suggest that corporate governance is especially important to guarantee an efficient allocation of external capital resources and high returns. The better monitoring of management enhances investors' confidence for those companies and leads to higher company's valuation.

As in other papers, we check whether our evidence is robust when controlling for cross-industry differences in size. The models we estimate with this size variable are:

$$Y_{i,k,t}^c = \alpha + \beta \cdot GOV_{i,t}^c \cdot Large\ firm\ share_k + Size_{i,t}^c + (Fixed\ effects)_{k,t}^c + \varepsilon_{i,k,t}^c, \quad (5.1)$$

and

$$Y_{i,k,t}^c = \alpha + \beta_1 \cdot GOV_{i,t}^c \cdot Large\ firm\ share_k + \beta_2 \cdot GOV_{i,t}^c \cdot EXT\_DEP_k + Size_{i,t}^c + (Fixed\ effects)_{k,t}^c + \varepsilon_{i,k,t}^c, \quad (5.2)$$

where *Large firm share* is the 2-digit SIC code industry *k*'s share of employment in companies with more than 20 employees in the United States as from the US Census, and *Y*, *EXT\_DEP*, *Size* and *GOV* are as defined above. The regressions are run with industry and time fixed effects, with robust standard errors clustered at the country level. If in regression (5.1) the estimated coefficient  $\beta$  is positive and significant, then higher standards of corporate governance are more valuable for large-size companies, e.g., because those companies can bear the costs of it. Finally, the coefficients  $\beta_1$  and  $\beta_2$  in regression (5.2) will indicate whether stronger corporate governance matters more for large or high external financial dependent companies: if one of the two effects prevail, we would expect only one of the coefficients  $\beta_1$  and  $\beta_2$  to be significant.

#### 4. Results

##### Univariate Analysis

Table 2 provides an initial assessment of the association between corporate governance and performance (Tobin's Q) for the main indicators (INV\_PROT1, COMM1, BEBCHUK, INDEP1). We provide these data for the four groups of companies/countries: companies with both high (above the median) levels of country investor protection and company corporate governance (*HiHi*), companies with high level of country investor protection but low (below the median) level of company corporate governance (*HiLo*) and vice-versa (*LoHi*), and finally companies in low country investor protection and with low company corporate governance (*LoLo*).

There is a clear, but non-monotonic interaction between corporate governance at the company and at the country level. Take for instance COMM1. Companies with a high level of corporate governance have higher Tobin's Q than companies with a low level of corporate governance. But companies in countries with a high level of corporate governance do not have higher Tobin's Q than companies in countries with



low corporate governance. In particular, when both the country and company are high (INV\_PROT1 HIGH and COMM1 HIGH), companies do not have the highest average Tobin's Q (1.70). Rather companies with COMM1 HIGH incorporated in a country with relatively low investor protection level (INV\_PROT1 LOW) have the highest Tobin's Q (2.03). This evidence is further confirmed with BEBCHUK and INDEP1 as company-level indicators. Surprisingly, the governance combination COMM1 LOW and INV\_PROT1 HIGH is not associated with a higher average Tobin's Q (1.42) than the combination COMM1 LOW and INV\_PROT1 LOW (1.53). This is also true for the other company-level indicators. Of course, these are univariate comparisons and we need check whether such associations still hold in our multivariate analyses.

### **Corporate governance and performance**

We first show the results of the association between governance choices and performance, estimated using equation (1), with regression results reported in Table 3. We first consider country level investor protection and each of the six indices (COMM1, COMMM2, BEBCHUK, INDEP1, INDEP3, and TRANSP) separately and interacted with INV\_PROT1 (columns I-VI). Note that, given missing observations on companies' corporate governance practices, we have fewer observations for the last two indexes. We find that the degree of investor protection is not statistically significant for any of the indexes. We do find that each of company practices matter, however, with all coefficients positive and significant at the 1% level. This means that the existence of board committees, lack of entrenchment at the board level, board independence and transparency contributes to higher valuation.<sup>10</sup> In terms of relationship between country and company corporate governance, we find that the interaction terms of the various company practices with INV\_PROT1 are all negative and significant at the 1% level. This suggests a substitution effect between company and country corporate governance and in particular that the impact of corporate governance practices at the company level are all less when investors' protection at country level is high. The coefficients of the control variables are in line with the

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<sup>10</sup> Additionally, as in Bebchuk et al. (2004) we examine the association between staggered boards and firm value for US companies only. We find that the governance indicator BEBCHUK is positive and significant also for our sample of companies.

results found in the literature: size (log of sales) and capital intensity (the ratio of property, plants, and equipments (PPE) over sales) are negative and highly significant, while the dummy ADR is positive and significant only in two cases.

We next run the regressions using at the same time three indexes, COMM1, BEBCHUK, and INDEP1, and their interactions with INV\_PROT1 (regression VII). We find now that the INV\_PROT1 is statistically significant positive, that the three indexes themselves remain positive statistically significant, and that all three interactions are again statistically significant negative, confirming the evidence above. We also run similar regressions using COMM2, INDEP3 and TRANSP as company corporate governance indexes (results not shown here). We obtain similar results with COMM2 and TRANSP, while INDEP3 is no more significant, which suggests that, in terms of independence, what matters is the effective independence at the board level rather than other matters such as the separation of the CEO/Chairman roles.<sup>11</sup>

By calculating the overall impact of the constructed indexes we can show the economic impact of differences in legal regime. The regression result of column VII, for example, implies that one standard deviation (0.26) increase in INV\_PROT1 is associated with an effect on Tobin's Q of  $0.26 * [0.57 - 0.20*COMM1 - 0.31*BEBCHUK - 0.46*INDEP1]$ . The overall magnitude of the impact of legal reform thus depends on the degree of corporate governance in place at the company level. Take for instance companies with COMM1=4: one standard deviation increase in INV\_PROT1 is associated with a decrease in Tobin's Q of  $0.26* [-0.23 - 0.31*BEBCHUK - 0.46*INDEP1]$ , i.e., with a decrease of at least 0.0598, which is 3.5% of the average Tobin's Q.<sup>12</sup> The effect is even more negative when the board consists of a majority of independent directors, because for companies with COMM1=4 and INDEP1=1 one standard deviation increase in INV\_PROT1 is associated with a decrease in Tobin's Q of  $0.26*[-0.69 - 0.31*BEBCHUK]$ , i.e., a minimum decrease of 0.1796 (10.8% of the average Tobin's Q).<sup>13</sup> In other words, our results suggest possible overregulation from stronger legal regimes when company corporate governance practices in place are already high.

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<sup>11</sup> When using INDEP3 and TRANSP, the sample is reduced by 30-50% and these results thus have to be considered with some caveats.

<sup>12</sup> For which we have 1734 total observations, with an average INV\_PROT1 index of 1.55.

<sup>13</sup> For which we have 1589 total observations, with an average INV\_PROT1 index of 1.53.

We next run the regressions using instead of INV\_PROT1, our other two indexes of investor protection, INV\_PROT2 and INV\_PROT3 (regressions VIII and IX). The results found above are substantially confirmed when using INV\_PROT3 as the country level index. However, the positive association between country legal investor protection and valuation is not significant when using INV\_PROT2 as indicator (column VIII), with BEBCHUK not significant as well. Given also the previous results, we can therefore conclude that the positive associations between country investor protection and the level of board entrenchment with performance are not always robust to alternative measures and specifications.

We next run the regressions following equation (2) using the dummies for the *Hi-Lo* country regimes and company corporate governance practices, where the category *Lo* investor protection and *Hi* company practice is the “base” case and thus dropped (Table 4). We see here clearly the effects of different combinations of country regimes and company corporate governance practices, and the differences in valuation effects of these combinations. Relative to the base case (*Lo* investor protection and *Hi* company practices), all other combinations have statistically significant lower Tobin's Q, with the difference being the highest for the combination *Hi* investor protection regime with *Lo* company practices ( $\beta_2$  ranging from - 0.46 to -0.80) depending on which company corporate governance measure we use. The coefficient  $\beta_3$  of the combination where both investor protection and company practices are *Lo*, is between -0.24 and -0.70, not very different from the *Hi* investor protection regime with *Lo* company practices. In particular, the differences between the coefficients  $\beta_2$  and  $\beta_3$  are never statistically significant different, except for the TRANSP index, when it is statistically significant different at the 6% level.

This lack of statistically significant difference between these two groups suggests that for those companies with poor corporate governance practices, there are no effects of investor protection on company valuation. In other words, better country legal investor protection is not a substitute for poor company corporate governance. At the same time, there is a negative effect of investor protection for those companies with better corporate governance practices, since the group of *Hi* investor protection and *Hi* company corporate governance practices, have a discount between 0.51 and

0.82 (depending on the specification used) compared to the base case of *Lo* investor protection and *Hi* company corporate governance practices, which suggests that stronger country corporate governance is not necessarily the optimal solution. In terms of specific company practices, we notice from Table 4 that only high values of COMM1, COMM2, and INDEP1 and not of BEBCHUK, INDEP3 and TRANSP are statistically significant associated with higher valuation, regardless of the level (*Hi* or *Lo*) of country investor protection. This suggests that some company practices impact performance “more” than others under any country legal condition.

These results confirm the regression results of Table 3 that there can be overregulation when company corporate governance practices are good, negatively impacting valuation. In particular, for companies of a specific country, like US or Canada, that on average have high company corporate governance standards, then there may not be a need to increase stricter country investor protection, as it can have a negative impact on performance. On the other hand, if companies on average converge to low corporate governance standards, tightening the country-level protection may not be sufficient to improve performance. It is worth, though, to mention that the sample of countries considered in this analysis have on average already a high level of investor protection compared with many emerging markets and developing countries.<sup>14</sup> While for these companies, it is the corporate governance at the company level that matters most, it might well be that increases in legal protection are effective for emerging markets and developing countries.

We next perform several robustness checks to confirm both the significance of the results and the economic impact of the corporate governance variables, with results reported in Tables 5-7. As a first robustness check, we include three extra company control variables in equation (2): the one year growth of sales to control for growth opportunities (SALES GROWTH), the ratio of debt to equity to control for leverage, and degree of debt financiers’ monitoring (D\_E) and the ratio of capital expenditures to sales to control for investment opportunities (CAPEX\_SALES). We still use INV\_PROT1 as our country legal protection index. In Table 5 (columns Ia, IIa, IIIa) we report the results with COMM1, BEBCHUK and INDEP1, but we find similar

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<sup>14</sup> The average LLSV and Self-Dealing indexes for our sample of companies are respectively 0.73 and 0.53, compared to 0.62 and 0.39 for developing countries.

results also with the other indexes. The results confirm the earlier evidence: companies with poor corporate governance practices are lower valued and differences in legal regime do not affect the discount for these companies; and for companies with good corporate governance practices, a stricter regime can increase the discount. We also run regression (2) including financial companies (SIC code 6), with the results found before again confirmed (columns Ib, IIb, IIIb), although for BEBCHUK the F-test can again not reject equality of the  $\beta_1$  and  $\beta_2$  coefficients. Finally, we perform an additional robustness check by using the return on assets (ROA) as a performance measure instead of Tobin's Q. The coefficients of the three dummies (columns Ic, IIc, IIIc) are still significant at the 1% level and the relative comparisons are still valid in case of COMM1 and INDEP1 (although for the latter the F-test can only reject equality of the  $\beta_1$  and  $\beta_2$  coefficients at the 8% level).

We next run robustness checks on the impact of the specific investor protection index by using two alternative indices capturing the quality of the country legal regime, INV\_PROT2 and INV\_PROT3. We run again equation (2), i.e., using the three group dummies. We find very similar results (Table 6), especially for COMM1 and INDEP1, with companies with high practices in low regime countries having the highest values and no significant differences in valuation between low and high investor protection countries for companies with low practices (again, for BEBCHUK the F-test can not reject equality of the  $\beta_1$  and  $\beta_2$  coefficients).

We also consider whether the clearly non-monotonic relationships between investor protection and corporate governance practices with performance may have affected the results because of the specifications we have used. We, therefore, regress Tobin's Q on the index INV\_PROT1, the interaction term INV\_PROT1\*COMM1 Hi (or the interaction with the dummy BEBCHUK Hi or INDEP1) and the dummy COMM1 Hi (or the dummy BEBCHUK Hi or INDEP1), with the usual company controls (regression 3). In this specification, both the level of investor protection and good company practices are allowed to have a direct impact on valuation, yet we allow for a combined effect of the level of investor protection and good practices. We find (Table 7) that on its own INV\_PROT1 is not significant for any company practices index used in the regressions. This once again confirms that country level investor protection has no significant impact on Tobin's Q in the presence of low

company corporate governance standards. The incremental effects of investor protection on Tobin's Q for companies with high governance practices ( $\beta_2, \beta_3, \beta_4$ ) are always negative and significant. The total effect of country investor protection on Tobin's Q for high standards companies ( $\beta_1 + \beta_2, \beta_1 + \beta_3, \beta_1 + \beta_4$ ) is always negative and significantly different from zero, confirming the “too much of a good thing” effect. The only exception is in column V, where, similarly to the previous analyses, the total effect for BEBCHUK ceases to be significant when BEBCHUK is used at the same time with the COMM1 and INDEP1 indices. In terms of economic impact, the effect on Tobin's Q of a one standard deviation increase in INV\_PROT1 is  $0.26 * [\beta_1 + \beta_2 \text{ COMM1 Hi} + \beta_3 \text{ BEBCHUK Hi} + \beta_4 \text{ INDEP1}]$ , which can be smaller or larger than zero. For companies with COMM1 above the median, a one standard deviation is associated with a decrease in Q of 0.0624 (3.7% of the average). For the companies with also an independent board, the decrease in Q is 0.24 (14% of the average).

Lastly, a possible concern is the large share of US companies in the sample, since the US has a special combination of relatively low country level corporate governance and a relatively high level of company corporate governance practices. We, therefore, also use a smaller subset of US companies, specifically those companies with higher (above the median) market capitalization. The main results of Tables 2 and 3 are confirmed (results not shown).

### **Corporate governance, external financing dependence, and performance**

We next discuss the results of the association between corporate governance, external financial dependence and performance using regression specification (4). Table 8, column I, shows that the interaction term with investor protection INV\_PROT1 itself is again not statistically significant. Columns II-VII show the coefficients of the interaction terms when using one by one the three main governance indicators (COMM1, INDEP1, BEBCHUK) as well as the indicators multiplied by the country level of investor protection, both interacted with external financial dependence. The coefficients of the interaction terms external financial dependence with COMM1 and INDEP1 are positive and significant, while the coefficient for the

interaction of external financial dependence with BEBCHUK is not statistically significant. We find further that the coefficient estimate of INDEP1 (0.14, column VI) is higher than that for COMM1 (0.035, column II), indicating the importance of board independence for valuation with regards to higher external financial dependence. When using all the company indices contemporaneously (columns VIII and IX), we find that COMM1 and INDEP1 remain positive and significant, while the interaction of external financial dependence with BEBCHUK is again not statistically significant.

These results suggest that companies belonging to industrial sectors that rely more on external financing have a higher valuation the more board committees they have and if the board committees are independent. This can be interpreted as evidence that the market values strong and independent boards more than any other bonding practice when providing capital to companies. The channels are likely that a strong and independent board reduces moral hazard and adverse selection problems, and improves companies' performance, particularly when naturally dependent on external financing. We can show the importance of these corporate governance features for more financial dependent companies using the following example. The industries at the 33% and 66% percentile have a ratio of external financial dependence equal to 0.015 and 0.541. Using the results in column II, the coefficient estimate for the interaction term predicts that the difference in valuation between the 33<sup>rd</sup> and 66<sup>th</sup> percentile of financial dependent industries to be two percentage points for a company with an index COMM1 equal to 3 compared to a company with COMM1 equal to 1.

Next we check whether the associations between corporate governance, external financial dependence and performance are affected by the size of the company, avoiding issues of simultaneity by using the average size of the companies within the respective industry (regression 5.1). The results in Table 9 show that companies belonging to industries with larger shares of big companies are higher valued if they have stronger corporate governance in the form of independent board committees and executives on the board (columns II and VI). The interaction terms with the BEBCHUK index (column IV) as well as with the country index INV\_PROT1 are not statistically significant. These regression results remain when interacting the company indexes with the investor protection index. Here, COMM1 and INDEP1 (columns III

and VII) are again statistically significant, but BEBCHUK is now statistically significant only at the 10% level (column V). When including all three company indexes, either alone (column VIII) or interacted with investor protection (column IX), we find the same results, with again INDEP1 more important than COMM1. This evidence suggests that the market considers strong corporate governance to increase value, especially for those companies that are naturally large enough. This could be because only these companies can bear the costs of it.

Lastly, we investigate how cross-industry differences in external financial dependence and natural company size interact with company corporate governance practices and legal regimes (regression 5.2). We do this for the samples of all companies and of manufacturing companies only (Table 10). We find the earlier results of good corporate governance practices having more impact for larger companies to be confirmed again in the case of COMM1 (columns I and II) and INDEP1 (columns V and VI), with the coefficients of the interaction terms with external dependence to remain significant only in the specification with INDEP1.

Putting the results from regressions (4), (5.1) and (5.2) on the associations between corporate governance, external financing, size and performance together reinforces the view that strong corporate governance can be very beneficial in the case of highly financial dependent companies, as it favors more efficient management, capital allocation and higher valuation, and can be even more valuable for large size companies. This evidence, in line with previous studies (e.g., Chhaochharia and Grinstein, 2005) suggests that only large companies can effectively bear the cost of a strong corporate governance regime, while for smaller companies it can be “too much of a good thing”. Overall, we can conclude that better corporate governance helps in efficient capital allocation, and subsequently performance, mainly for companies that depend heavily on external financing and for large companies, and that (too) strict requirements may have costs for companies that largely rely on internal financing and for small companies.



## 5. Conclusions

In this paper we have analyzed whether and through what channels corporate governance at the company and country level affects performance and company valuation. Consistent with existing studies, we find that better corporate governance at the company level exerts a positive effect on performance. Not everything contributes equally to this association, though. The presence of board committees and board independence seem to play a more important role for company performance than other corporate governance practices. We also find that corporate governance is more important for companies that especially rely on external financing. This is likely because of two channels. Corporate governance acts as a *signaling* device for companies having positive NPV projects, thus allowing a more efficient capital allocation. And once funds have been allocated, corporate governance helps through the *monitoring* of management.

In terms of shareholder protection at the country level, and different from other results, we find a neutral or negative impact. Specifically, for companies with poor corporate governance practices, there is very little or no impact of better investor protection and for companies with good corporate governance practices, there is a discount from better investor protection. We find that only for large companies or for companies that naturally depend heavily on external financing do strict corporate governance practices or requirements increase valuation.

This suggests that the optimal form of corporate governance is not necessarily a strong form of corporate governance. This has important policy implications. Increasing the number and severity of country-level regulations may not always lead to superior performance. A straight-jacket of many corporate governance rules can, besides being costly in terms of direct outlays, limit managerial freedom of initiative, and thereby negatively affect performance. A policy-maker needs to decide both whether to intervene and if so, what (new) rules are the most efficient to improve companies' performance and shareholders' returns, bearing in mind that stronger rules do not necessarily mean better corporate governance.

The paper does come with its caveats. One is the sample, which is limited to relatively well-developed countries where issues such as public enforcement and the quality of the judicial system are less in doubt than in many emerging markets and developing countries. Furthermore, there may be other mechanisms at work in these countries that discipline companies, but that are not captured through the investor protection measures we use (for example, competition in factors markets, well-functioning banks and other financial institutions). As such, the effects might well be different from those developing countries where enhancing country level governance is likely to have positive effects on value. Indeed, results do not need to negate the findings in the literature that in general better corporate governance frameworks improve company valuation and performance. There are also likely important interactions between company corporate governance practices and overall public governance, including the presence of corruption that need to be considered when evaluating the effects of stronger corporate governance regimes.

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**TABLE 1.A: CORPORATE GOVERNANCE INDICATORS BY COUNTRY**

Country	COUNTRY INDICATORS							FIRM INDICATORS											
	Revised LLSV Anti- Director	ICRG Law and Order	DLLS Self- Dealing	INV_ PROT1	INV_ PROT2	INV_ PROT3		COMM1		COMM2		BEBCHUK		INDEP1		INDEP3		TRANSP	
	Obs.		Value					Min: 0	Max: 4	Min: 0	Max: 3	Min: 0	Max: 4	Dummy	Min: 0	Max: 3	Min: 0	Max: 3	
							Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	
AUSTRALIA	205	0.8	1	0.76	1.80	2.56	0.80	205	2.77	205	0.85	205	1.02	203	0.57	203	2.23	145	1.77
AUSTRIA	47	0.5	1	0.21	1.50	1.71	0.50	47	0.31	47	0.00	47	1.00	5	0.80	5	2.60	7	2.28
BELGIUM	47	0.6	0.83	0.54	1.43	1.97	0.50	47	1.25	47	0.25	47	0.74	22	0.27	15	1.66	2	1.41
CANADA	466	0.8	1	0.64	1.80	2.44	0.80	466	3.82	466	1.97	466	1.99	465	0.86	461	2.20	157	2.80
DENMARK	61	0.8	1	0.46	1.80	2.26	0.80	61	0.11	61	0.06	58	1.56	18	0.88	18	2.11	29	1.93
FINLAND	81	0.7	1	0.46	1.70	2.16	0.70	81	0.86	81	0.48	77	1.80	44	0.65	44	2.04	12	1.75
FRANCE	215	0.7	0.81	0.38	1.51	1.89	0.56	215	2.34	215	0.33	211	0.83	194	0.26	185	1.47	189	1.52
GERMANY	217	0.7	0.83	0.28	1.53	1.81	0.58	217	0.65	217	0.01	217	1.05	57	0.75	55	1.94	29	2.10
GREECE	112	0.4	0.58	0.22	0.98	1.20	0.23	112	0.38	112	0.04	63	2.01	73	0.04	37	1.40	3	2.33
HONG KONG	140	1	0.75	0.96	1.75	2.71	0.75	140	1.48	140	0.62	110	2.06	136	0.08	135	1.57	47	2.25
IRELAND	33	1	1	0.79	2.00	2.79	1.00	33	3.09	33	0.90	33	1.00	32	0.31	32	1.59	10	2.70
ITALY	122	0.4	0.58	0.42	0.98	1.40	0.23	122	1.13	122	0.09	121	1.04	84	0.08	50	1.42	59	2.32
JAPAN	1409	0.9	0.83	0.5	1.73	2.23	0.75	1409	1.04	1409	0.01	1407	1.35	1408	0.00	3	1.00	932	2.42
NETHERLANDS	123	0.5	1	0.2	1.50	1.70	0.50	123	1.25	123	0.72	115	0.74	51	0.92	47	2.59	15	2.13
NEW ZEALAND	38	0.8	1	0.95	1.80	2.75	0.80	38	2.71	38	0.34	38	1.00	37	0.37	37	1.70	24	2.20
NORWAY	58	0.7	1	0.42	1.70	2.12	0.70	58	0.43	58	0.24	51	1.15	17	0.82	16	2.37	15	1.86
PORTUGAL	33	0.5	0.83	0.44	1.33	1.77	0.42	33	0.42	33	0.09	27	1.03	19	0.26	3	2.00	10	1.70
SINGAPORE	119	1	0.89	1	1.89	2.89	0.89	119	2.55	119	0.87	55	1.40	107	0.50	94	2.18	27	2.77
SPAIN	120	1	0.78	0.37	1.78	2.15	0.78	120	1.71	120	0.25	100	1.02	46	0.13	5	1.40	21	1.95
SWEDEN	102	0.7	1	0.33	1.70	2.03	0.70	102	0.89	102	0.16	101	2.01	62	0.53	56	2.32	25	1.72
SWITZERLAND	135	0.6	0.83	0.27	1.43	1.70	0.50	135	1.30	135	0.45	135	1.10	60	0.78	59	1.86	21	2.66
UK	787	1	0.97	0.95	1.97	2.92	0.97	787	2.98	787	1.59	785	1.05	780	0.35	770	1.34	457	2.46
USA	1187	0.6	0.83	0.65	1.43	2.08	0.50	1187	3.94	1187	2.66	1160	1.82	1187	0.97	1179	2.01	792	2.61
<b>Total obs.</b>	5857							5857		5857		5629		5107		3509		3028	
<b>Average</b>		0.73	0.89	0.53	1.61	2.14	0.65		2.25		1.04		1.41		0.46		1.85		2.38
<b>Median</b>		0.70	0.89	0.46	1.70	2.12	0.70		3		0		1		0		2		2

Table 1.A reports the country legal regime variables (INV\_PROT1, INV\_PROT2, and INV\_PROT3) and the company corporate governance indicators (COMM1, COMM2, BEBCHUK, INDEP1, INDEP3, and TRANSP). In particular, the country indicators consist of combinations of normalized values from 0 to 1 of the revised LLSV index, the ICRG Law and Order Index and the Anti-Self Dealing Index. The company-level governance indicator COMM1 considers the existence of board committees, while COMM2 their independence. BEBCHUK is constructed following the entrenchment index developed by Bebchuk et al. (2004). INDEP1 is a dummy equal to 1 if a board consists of a majority of independent directors. In addition to independence, INDEP3 takes into account the presence of the former CEO on the board and the separation of the roles between the CEO and the Chairman. TRANSP ranks the degree of potential account manipulation within the company. The composition of each index is given in Table 1.B

**Table 1.B: INCIDENCE OF THE CORPORATE GOVERNANCE PROVISIONS FOR EACH INDICATOR**

This table shows the composition of each corporate governance indicator and the percentage of incidence of each provision. The percentages are computed over the total company-year observations of each indicator.

INDICATOR	Constituents				INDICATOR	Constituents		
<b>COMM1</b>	Nomination committee	Compensation committee	Audit committee	Governance committee	<b>INDEP1</b>	Majority of independent board members		
	52%	58%	83%	31%		46%		
<b>COMM2</b>	Independent nomination committee	Independent compensation committee	Independent audit committee		<b>INDEP3</b>	Majority of independent board members	No former CEO on the board	Separated CEO/Chairman
	26%	37%	40%			65%	79%	40%
<b>BEBCHUK</b>	Annually elected board	No poison pills in place	No supermajority for charters/bylaws	No supermajority for merger	<b>TRANSP</b>	Auditor ratified	Consulting fees to auditors less than auditing fees	CEO not having related party transactions
	30%	80%	10%	20%		65%	81%	91%

**TABLE 1.C: PERCENTAGES OF CO-EXISTENCE OF CORPORATE GOVERNANCE PRACTICES FOR THE MAIN INDICATORS**

This table shows the distribution of the company- year observations in the combination of specific corporate governance indicators. For instance, in 553 cases out of 5857 (9.44%), companies have COMM1=0 and INV\_PROT1 less than the median 1.7.

	INV_PROT1			INV_PROT1		total
	< 1.7	>= 1.7		< 1.7	>= 1.7	
<b>COMM1 = 0</b>	553	297	<b>COMM1 = 0</b>	9.44%	5.07%	15.51%
<b>COMM1 = 1</b>	99	1505	<b>COMM1 = 1</b>	1.69%	25.70%	27.39%
<b>COMM1 = 2</b>	124	201	<b>COMM1 = 2</b>	2.12%	3.43%	5.38%
<b>COMM1 = 3</b>	264	1080	<b>COMM1 = 3</b>	4.51%	18.44%	22.94%
<b>COMM1 = 4</b>	1198	536	<b>COMM1 = 4</b>	20.45%	9.15%	29.60%
<b>total</b>	2238	3619	<b>total</b>	38.21%	61.79%	100.00%
<b>BEBCHUK = 0</b>	336	7	<b>BEBCHUK = 0</b>	5.97%	0.12%	6.09%
<b>BEBCHUK = 1</b>	1047	2255	<b>BEBCHUK = 1</b>	18.60%	40.06%	58.66%
<b>BEBCHUK = 2</b>	352	1084	<b>BEBCHUK = 2</b>	6.25%	19.26%	25.51%
<b>BEBCHUK = 3</b>	256	138	<b>BEBCHUK = 3</b>	4.55%	2.45%	7.00%
<b>BEBCHUK = 4</b>	152	2	<b>BEBCHUK = 4</b>	2.70%	0.04%	2.74%
<b>total</b>	2143	3486	<b>total</b>	38.07%	61.93%	100.00%
<b>INDEP1 = 0</b>	381	2366	<b>INDEP1 = 0</b>	7.46%	46.33%	53.79%
<b>INDEP1 = 1</b>	1371	989	<b>INDEP1 = 1</b>	26.85%	19.37%	46.21%
<b>total</b>	1752	3355	<b>total</b>	34.31%	65.69%	100.00%



**TABLE 1.D: SUMMARY STATISTICS OF FINANCIAL DATA**

This table gives summary statistics of the financial data use in the analysis. Tobin's Q and ROA (Return on Assets) are the performance variables. Sales (in logarithm), total assets (in logarithm), the ratio property-plants-equipments (PPE) to sales, 1 year growth of sales (G\_S), the ratio total debt to total equity (D\_E) and the ratio capital expenditures to sales (CAPEX\_SALES) are the control variables. ADR is a dummy equal to 1 if a company had traded ADRs, 0 otherwise. Details on how each variable is constructed are given in the text.

<b>Variable</b>	<b>Obs.</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<b>Tobin' s Q</b>	5773	1.66	0.94	0.45	5.76
<b>ROA</b>	5778	0.06	0.1	-1.08	1.52
<b>Total Assets (\$US) (mill)</b>	5797	10031	28145	5.8	750507
<b>Sales (\$US) (mill)</b>	5797	7940	19246	0	328213
<b>PPE_SALES</b>	5773	0.64	1.24	0	33.56
<b>G_S</b>	5857	0.08	0.22	-0.48	1.09
<b>D_E</b>	5857	1.3	2.95	0	20.42
<b>CAPEX_SALES</b>	5857	0.1	0.19	0	1.09
<b>ADR</b>	5857	0.19	0.39	0	1

**TABLE 2: UNIVARIATE ANALYSIS**

In this table we divide the company-observation in 4 groups: companies with both high (above the median) levels of country and company corporate governance (HiHi), companies with high level of country investor protection but low (below the median) level of company corporate governance (HiLo) and vice-versa (LoHi), and finally companies with both low standards of country and company corporate governance (LoLo). We then compute the average Tobin's Q for each group. The total number of observations is in parentheses.

	INV_PROT1 HIGH	INV_PROT1 LOW	difference
			<i>HL-LH= -0.61***</i>
<b>COMM1 HIGH</b>	1.70 (1587)	2.03 (1427)	<b>HH-LH= -0.33***</b>
<b>COMM1 LOW</b>	1.42 (1988)	1.53 (771)	<b>HL-LL= -0.10***</b>
difference	<b>HH-HL= 0.28***</b>	<b>LH-LL= 0.50***</b>	<b>HH-LL= 0.17***</b>
			<i>HL-LH= -0.62***</i>
<b>BEBCHUK HIGH</b>	1.57 (1212)	2.16 (735)	<b>HH-LH= -0.59***</b>
<b>BEBCHUK LOW</b>	1.53 (2233)	1.69 (1370)	<b>HL-LL= -0.15***</b>
difference	<b>HH-HL= 0.035</b>	<b>LH-LL= 0.47***</b>	<b>HH-LL= -0.12***</b>
			<i>HL-LH= -0.61***</i>
<b>BOARD IND YES</b>	1.74 (976)	2.07 (1338)	<b>HH-LH= -0.32***</b>
<b>BOARD IND NO</b>	1.46 (2336)	1.56 (374)	<b>HL-LL= -0.10**</b>
difference	<b>HH-HL= 0.28***</b>	<b>LH-LL= 0.50***</b>	<b>HH-LL= 0.17***</b>

**TABLE 3: CORPORATE GOVERNANCE AND PERFORMANCE**

This tables reports country random effects regressions of Tobin's Q on a country level index of investor protection (INV\_PROT1, INV\_PROT2, INV\_PROT3), company corporate governance indicators (COMM1, COMM2, BEBCHUK, INDEP1, INDEP3, and TRANSP), their interaction terms, and various controls (the logarithm of sales (LOG\_SALES), the ratio property-plants-equipments to sales (PPE\_SALES), and a dummy equal to one if a company has traded ADRs). Regressions are run with 2-digit SIC code industry fixed effects, time fixed effects, and robust standard error clustered at country level (in parentheses). Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Dependent variable	Tobin's Q									
	I	II	III	IV	V	VI	VII	VIII	IX	
INV_PROT1	-0.09 (0.18)	-0.09 (0.16)	0.02 (0.50)	-0.003 (0.16)	-0.07 (0.31)	0.09 (0.38)	0.57* (0.29)			
INV_PROT2								0.54 (0.34)		
INV_PROT3									0.72* (0.40)	
COMM1	0.54*** (0.14)						0.46*** (0.13)	0.46*** (0.17)	0.29*** (0.06)	
COMM2		0.81*** (0.10)								
BEBCHUK			0.75** (0.29)				0.53*** (0.17)	0.54 (0.36)	0.29*** (0.08)	
INDEP1				2.37*** (0.39)			0.98*** (0.17)	0.71*** (0.27)	0.54*** (0.13)	
INDEP3					0.56*** (0.19)					
TRANSP						0.41*** (0.12)				
COMM1* INV_PROT	-0.23*** (0.09)						-0.20** (0.083)	-0.14* (0.07)	-0.24** (0.10)	
COMM1* INV_PROT		-0.38*** (0.10)								
BEBCHUK * INV_PROT			-0.41** (0.18)				-0.31*** (0.11)	-0.22 (0.17)	-0.41*** (0.14)	
INDEP1 * INV_PROT				-1.16*** (0.20)			-0.46*** (0.12)	-0.21** (0.10)	-0.49*** (0.15)	
INDEP3 * INV_PROT					-0.32*** (0.11)					
TRANSP * INV_PROT						-0.24*** (0.07)				
LOG SALES	-0.12*** (0.01)	-0.11*** (0.01)	-0.07** (0.03)	-0.12*** (0.01)	-0.09*** (0.02)	-0.13*** (0.01)	-0.14*** (0.01)	-0.12*** (0.01)	-0.14*** (0.01)	
PPE_SALES	-0.06*** (0.01)	-0.06*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.06*** (0.01)	-0.05 (0.01)	-0.06*** (0.01)	
ADR	0.12* (0.06)	0.14** (0.06)	-0.002 (0.12)	0.11 (0.07)	-0.05 (0.12)	0.10 (0.06)	0.16** (0.06)	0.11 (0.07)	0.16** (0.06)	
Constant, Industry & Year dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Obs.	5749	5749	5526	5002	3419	2997	4854	4854	4854	
Number of countries	23	23	23	23	23	23	23	23	23	
R squared	0.23	0.23	0.18	0.23	0.20	0.22	0.25	0.24	0.25	

**TABLE 4: CORPORATE GOVERNANCE AND PERFORMANCE**

This tables reports country random effects regressions of Tobin's Q on 3 dummy variables equal to 1 if a company has high standards of corporate governance at both country and company level (HiHi), or has high legal protection at country level but low at the company level (HiLo) (and vice-versa, LoHi), or had both low country and company governance levels (LoLo), 0 otherwise. The group LoHi is dropped as it is the reference. INV\_PROT1 is the country indicators of legal protection. COMM1, COMM2, BEBCHUK, INDEP1, INDEP3, and TRANSP are the company level governance indicators. The logarithm of sales (LOG\_SALES), the ratio property-plants-equipments to sales (PPE\_SALES), a dummy equal to one if a company has traded ADRs are the control variables. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively. The F-Test indicates whether the estimated coefficients are significantly different.

Dependent variable: Tobin's Q		I COMM1		II COMM2		III BEBCHUK		IV INDEP1		V INDEP3		VI TRANSP	
$\beta_1$	INV_PROT1 HIGH	HIGH	-0.51*** (0.12)	HIGH	-0.55*** (0.08)	HIGH	-0.68*** (0.13)	=1	-0.52*** (0.09)	HIGH	-0.45*** (0.11)	HIGH	-0.82*** (0.17)
$\beta_2$	INV_PROT1 HIGH	LOW	-0.72*** (0.15)	LOW	-0.79*** (0.11)	LOW	-0.73*** (0.13)	=0	-0.76*** (0.13)	LOW	-0.46*** (0.14)	LOW	-0.80*** (0.16)
$\beta_3$	INV_PROT1 LOW	LOW	-0.62*** (0.12)	LOW	-0.70*** (0.06)	LOW	-0.48*** (0.10)	=0	-0.58*** (0.07)	LOW	-0.24*** (0.06)	LOW	-0.42*** (0.08)
	INV_PROT1 LOW	HIGH	<i>dropped</i>	HIGH	<i>dropped</i>	HIGH	<i>dropped</i>	=1	<i>dropped</i>	HIGH	<i>dropped</i>	HIGH	<i>dropped</i>
	LOG SALES		-0.12*** (0.01)		-0.12*** (0.01)		-0.09*** (0.02)		-0.13*** (0.01)		-0.11*** (0.02)		-0.14*** (0.01)
	PPE_SALES		-0.06*** (0.01)		-0.06*** (0.01)		-0.05*** (0.01)		-0.05*** (0.01)		-0.05*** (0.01)		-0.05*** (0.01)
	ADR		0.08 (0.07)		0.12** (0.06)		0.050 (0.09)		0.10 (0.08)		-0.01 (0.11)		0.08 (0.10)
	Constant, Industry & Year dummies		Y		Y		Y		Y		Y		Y
	Obs.		5749		5749		5526		5002		3419		2997
	Number of countries		23		23		23		23		23		23
	R squared (overall)		0.22		0.24		0.20		0.23		0.21		0.25
F-test	$\beta_1 = \beta_2$		p<0.01		p<0.01		p=0.48		p<0.01		p=0.71		p=0.65
	$\beta_1 = \beta_3$		p=0.01		p<0.01		p=0.26		p=0.52		p=0.19		p=0.06
	$\beta_2 = \beta_3$		p=0.21		p=0.27		p=0.18		p=0.10		p=0.23		p=0.06

**TABLE 5: CORPORATE GOVERNANCE AND PERFORMANCE - ROBUSTNESS CHECK 1 -**

This tables reports country random effects regressions of Tobin's Q on 3 dummy variables equal to 1 if a company has high standards of corporate governance at both country and company level (HiHi), or has high legal protection at country level but low at the company level (HiLo) (and vice-versa, LoHi), or had both low country and company governance levels (LoLo), 0 otherwise. The group LoHi is dropped as it is the reference. INV\_PROT1 is the country indicators of legal protection. COMM1, BEBCHUK, and INDEP1 are the company level governance indicators. The logarithm of sales (LOG\_SALES), the ratio property-plants-equipments to sales (PPE\_SALES), a dummy equal to one if a company has traded ADRs are the control variables. In columns a. extra control variables are added (sales growth, debt/equity ratio and capital expenditures/sales ratio). Columns b. include financial companies. Columns c. use ROA instead of Tobin's Q as performance variable. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively. The F-Test indicates whether the estimated coefficients are significantly different.

		COMM1	I.a Q	I.b Q	I.c ROA	BEBCHUK	II.a Q	II.b Q	II.c ROA	INDEP1	III.a Q	III.b Q	III.c ROA
$\beta_1$	INV_PROT1 HIGH	HIGH	-0.48*** (0.11)	-0.47*** (0.12)	-0.063*** (0.02)	HIGH	-0.65*** (0.11)	-0.67*** (0.12)	-0.074*** (0.01)	=1	-0.50*** (0.08)	-0.50*** (0.08)	-0.070*** (0.01)
$\beta_2$	INV_PROT1 HIGH	LOW	-0.62*** (0.14)	-0.69*** (0.15)	-0.079*** (0.02)	LOW	-0.68*** (0.11)	-0.70*** (0.13)	-0.082*** (0.01)	=0	-0.72*** (0.11)	-0.73*** (0.12)	-0.085*** (0.01)
$\beta_3$	INV_PROT1 LOW	LOW	-0.58*** (0.11)	-0.59*** (0.11)	-0.065*** (0.02)	LOW	-0.44*** (0.10)	-0.47*** (0.10)	-0.050** (0.02)	=0	-0.55*** (0.07)	-0.55*** (0.06)	-0.069*** (0.012)
	INV_PROT1 LOW	HIGH	<i>dropped</i>	<i>dropped</i>	<i>dropped</i>	HIGH	<i>dropped</i>	<i>dropped</i>	<i>dropped</i>	=1	<i>dropped</i>	<i>dropped</i>	<i>dropped</i>
	LOG SALES		-0.11*** (0.01)	-0.10*** (0.01)	0.008** (0.003)		-0.08*** (0.02)	-0.08*** (0.021)	0.011** (0.004)		-0.12*** (0.01)	-0.11*** (0.01)	0.005 (0.003)
	PPE_SALES		-0.06*** (0.01)	-0.03*** (0.006)	-0.003* (0.001)		-0.05*** (0.01)	-0.036*** (0.004)	-0.002 (0.002)		-0.05*** (0.01)	-0.03*** (0.006)	-0.003** (0.001)
	ADR		0.09 (0.07)	0.04 (0.06)	-0.021** (0.009)		0.06 (0.08)	0.024 (0.08)	-0.027** (0.012)		0.11 (0.07)	0.05 (0.07)	-0.018** (0.009)
	SALES GROWTH		0.69*** (0.14)				0.74*** (0.16)				0.67*** (0.15)		
	DEBT_EQUITY		-0.01** (0.006)				-0.01*** (0.005)				-0.01** (0.006)		
	CAPEX_SALES		0.12 (0.15)				0.05 (0.26)				0.03 (0.26)		
	Constant, Industry & Year dummies		Y	Y	Y		Y	Y	Y		Y	Y	Y
	Obs.		5749	6893	5757		5526	6597	5531		5002	5963	5009
	Number of countries		23	23	23		23	23	23		23	23	23
	R squared (overall)		0.25	0.25	0.19		0.23	0.23	0.18		0.25	0.26	0.22
F-test	$\beta_1 = \beta_2$		p<0.01	p<0.01	p=0.04		p=0.57	p=0.52	p=0.33		p<0.01	p<0.01	p=0.08
	$\beta_1 = \beta_3$		p=0.04	p=0.01	p=0.87		p=0.20	p=0.27	p=0.39		p=0.51	p=0.45	p=0.93
	$\beta_2 = \beta_3$		p=0.23	p=0.20	p=0.33		p=0.16	p=0.19	p=0.22		p=0.07	p=0.11	p=0.26

**TABLE 6: CORPORATE GOVERNANCE AND PERFORMANCE - ROBUSTNESS CHECK 2 -**

This tables reports country random effects regressions of Tobin's Q on 3 dummy variables equal to 1 if a company has high standards of corporate governance at both country and company level (HiHi), or has high legal protection at country level but low at the company level (HiLo) (and vice-versa, LoHi), or had both low country and company governance levels (LoLo), 0 otherwise. The group LoHi is dropped as it is the reference. INV\_PROT2 and INV\_PROT3 are the country indicators of legal protection. COMM1, BEBCHUK, and INDEP1 are the company level governance indicators. The logarithm of sales (LOG\_SALES), the ratio property-plants-equipments to sales (PPE\_SALES), and a dummy equal to one if a company has traded ADRs are used as control variables. Regressions are run with 2-digit SIC code industry fixed effects, time fixed effects, and robust standard error clustered at country level (in parentheses). Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively. The F-Test indicates whether the estimated coefficients are significantly different.

Dependent variable: Tobin's Q		I			II			III		
		COMM1	INV_PROT2	INV_PROT3	BEBCHUK	INV_PROT2	INV_PROT3	INDEP1	INV_PROT2	INV_PROT3
$\beta_1$	INV_PROT HIGH	HIGH	-0.50*** (0.13)	-0.50*** (0.12)	HIGH	-0.62*** (0.16)	-0.57*** (0.17)	HIGH	-0.50*** (0.10)	-0.48*** (0.10)
$\beta_2$	INV_PROT HIGH	LOW	-0.73*** (0.15)	-0.72*** (0.15)	LOW	-0.64*** (0.16)	-0.59*** (0.17)	LOW	-0.74*** (0.14)	-0.72*** (0.14)
$\beta_3$	INV_PROT LOW	LOW	-0.61*** (0.12)	-0.62*** (0.12)	LOW	-0.42*** (0.10)	-0.38*** (0.09)	LOW	-0.56*** (0.07)	-0.55*** (0.07)
	INV_PROT LOW	HIGH	<i>dropped</i>	<i>dropped</i>	HIGH	<i>dropped</i>	<i>dropped</i>	HIGH	<i>dropped</i>	<i>Dropped</i>
	LOG SALES		-0.12*** (0.01)	-0.12*** (0.01)		-0.09*** (0.02)	-0.08*** (0.02)		-0.13*** (0.01)	-0.12*** (0.02)
	PPE_SALES		-0.06*** (0.01)	-0.06*** (0.01)		-0.05*** (0.01)	-0.05*** (0.01)		-0.05*** (0.01)	-0.05*** (0.01)
	ADR		0.08 (0.07)	0.08 (0.07)		0.03 (0.10)	0.02 (0.11)		0.09 (0.08)	0.08 (0.08)
	Constant, Industry & Year dummies		Y	Y		Y	Y		Y	Y
	Obs.		5749	5749		5526	5526		5002	5002
	Number of countries		23	23		23	23		23	23
	R squared (overall)		0.22	0.22		0.20	0.19		0.23	0.23
F-test	$\beta_1 = \beta_2$		p<0.01	p<0.01		p=0.69	p=0.73		p<0.01	p<0.01
	$\beta_1 = \beta_3$		p=0.01	p<0.01		p=0.27	p=0.28		p=0.44	p=0.32
	$\beta_2 = \beta_3$		p=0.11	p=0.15		p=0.22	p=0.24		p=0.08	p=0.09

**TABLE 7: CORPORATE GOVERNANCE AND PERFORMANCE - ROBUSTNESS CHECK 3 –**

This tables reports country random effects regressions of Tobin’s Q on the country indicator INV\_PROT1, a dummy variable equal to 1 if the company level of governance is above the median (Hi) and 0 otherwise, and their interaction term. COMM1, BEBCHUK, and INDEP1 are the company level governance indicators. The logarithm of sales (LOG\_SALES), the ratio property-plants-equipments to sales (PPE\_SALES), and a dummy equal to one if a company has traded ADRs are used as control variables. Regressions are run with 2-digit SIC code industry fixed effects, time fixed effects, and robust standard error clustered at country level (in parentheses). Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively. The F-Test indicates the total country effect for companies with an above the median governance level.

Dependent variable: Tobin's Q		I	II	III	IV	V
$\beta_1$	INV_PROT1	-0.13 (0.13)	-0.23 (0.34)	-0.003 (0.16)	0.005 (0.16)	0.11 (0.20)
$\beta_2$	INV_PROT1 * COMM1 HIGH	-0.91*** (0.23)			-0.80*** (0.25)	-0.35* (0.20)
	COMM1 HIGH	1.96*** (0.45)			1.76*** (0.48)	0.85** (0.35)
$\beta_3$	INV_PROT1 * BEBCHUK HIGH		-0.94* (0.49)		-0.63*** (0.22)	-0.53*** (0.20)
	BEBCHUK HIGH		1.72** (0.82)		1.17*** (0.37)	0.97*** (0.33)
$\beta_4$	INV_PROT1 * INDEP1			-1.16*** (0.20)		-0.72*** (0.14)
	INDEP1			2.37*** (0.39)		1.47*** (0.25)
	LOG SALES	-0.11*** (0.01)	-0.07** (0.03)	-0.12*** (0.01)	-0.11*** (0.01)	-0.13*** (0.01)
	PPE_SALES	-0.06*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.06*** (0.01)	-0.05*** (0.01)
	ADR	0.09 (0.07)	-0.005 (0.12)	0.11 (0.07)	0.11* (0.06)	0.14** (0.06)
	Constant, Industry & Year dummies	Y	Y	Y	Y	Y
	Obs.	5749	5526	5002	5526	4854
	Number of countries	23	23	23	23	23
	R squared (overall)	0.22	0.18	0.23	0.23	0.24
	F-test: effect of country investor protection on Q for highly governed companies	$\beta_1 + \beta_2$ = -1.05*** p<0.01	$\beta_1 + \beta_3$ = -1.18* p=0.06	$\beta_1 + \beta_4$ = -1.16*** p<0.01	$\beta_1 + \beta_2$ = -0.80*** p<0.01 $\beta_1 + \beta_3$ = -0.63** p=0.03	$\beta_1 + \beta_3$ = -0.24* p=0.06 $\beta_1 + \beta_3$ = -0.42 p=0.16 $\beta_1 + \beta_4$ = -0.60*** p=0.01

**TABLE 8: CORPORATE GOVERNANCE, EXTERNAL FINANCING DEPENDENCE AND PERFORMANCE**

This table reports country random effects regressions of Tobin's Q on the interaction term between external financing dependence and corporate governance indicators at country (INV\_PROT1) and company level (COMM1, BEBCHUK, INDEP1), and their interaction (INV\_PROT1\*COMM1, INV\_PROT1\*BEBCHUK, INV\_PROT1\*INDEP1). The logarithm of sales (LOG\_SALES) is used as control variable. External dependence is the Rajan and Zingales (1998) measure of financial dependence at industrial level for US companies and updated for the year 2000. Regressions are run with 2-digit SIC code industry fixed effects, time fixed effects, and robust standard error clustered at country level (in parentheses). Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Dependent variable: Tobin's Q	I	II	III	IV	V	VI	VII	VIII	IX
Interaction (external dependence X INV_PROT1)	0.083 (0.12)								
Interaction (external dependence X COMM1)		0.035** (0.01)						0.039** (0.02)	
Interaction (external dependence X INV_PROT1_COMM1)			0.019** (0.008)						0.021** (0.01)
Interaction (external dependence X BEBCHUK)				0.005 (0.02)				-0.029 (0.02)	
Interaction (external dependence X INV_PROT1_BEBCHUK)					0.006 (0.01)				-0.016 (0.01)
Interaction (external dependence X INDEP1)						0.14*** (0.042)		0.090*** (0.02)	
Interaction (external dependence X INV_PROT1_INDEP1)							0.08*** (0.01)		0.051*** (0.01)
LOG SALES	-0.09*** (0.01)	-0.09*** (0.01)	-0.09*** (0.018)	-0.09*** (0.02)	-0.09*** (0.02)	-0.11*** (0.01)	-0.11*** (0.01)	-0.11*** (0.01)	-0.11*** (0.01)
Constant, Industry & Year dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of countries	22	22	22	22	22	22	22	22	22
Obs.	4571	4571	4571	4378	4378	3832	3831	3709	3709
R squared (overall)	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19



**TABLE 9: CORPORATE GOVERNANCE, SIZE AND PERFORMANCE**

This table reports country random effects regressions of Tobin's Q on the interaction term between the average firm size with respect to the industry (large firm share) and corporate governance indicators at country (INV\_PROT1) and company level (COMM1, BEBCHUK, INDEP1), and their interaction (INV\_PROT1\*COMM1, INV\_PROT1\*BEBCHUK, INV\_PROT1\*INDEP1). Large firm share is the Beck et al. (2005) industry k's share of employment in companies with more than 20 employees in the US for the year 2000. The logarithm of sales (LOG\_SALES) is used as control variable. Regressions are run with 2-digit SIC code industry fixed effects, and robust standard error clustered at country level (in parentheses). Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Dependent variable: Tobin's Q	I	II	III	IV	V	VI	VII	VIII	IX
Interaction (large firm share X INV_PROT1)	0.091 (0.13)								
Interaction (large firm share X COMM1)		0.068*** (0.02)						0.078*** (0.02)	
Interaction (large firm share X INV_PROT1_COMM1)			0.036*** (0.01)						0.040** (0.01)
Interaction (large firm share X BEBCHUK)				0.048 (0.03)				0.007 (0.03)	
Interaction (large firm share X INV_PROT1_BEBCHUK)					0.028* (0.01)				-0.002 (0.01)
Interaction (large firm share X INDEP1)						0.209*** (0.08)		0.115** (0.05)	
Interaction (large firm share X INV_PROT1_INDEP1)							0.116*** (0.04)		0.067** (0.03)
LOG SALES	-0.09*** (0.02)	-0.10*** (0.01)	-0.09*** (0.01)	-0.09*** (0.02)	-0.09*** (0.02)	-0.11*** (0.01)	-0.11*** (0.01)	-0.11*** (0.01)	-0.10*** (0.01)
Constant, Industry & Year dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of countries	22	22	22	22	22	22	22	22	22
Obs.	4593	4593	4593	4397	4397	3848	3848	3725	3725
R squared (overall)	0.18	0.18	0.19	0.18	0.18	0.19	0.19	0.20	0.20

**TABLE 10: CORPORATE GOVERNANCE, EXTERNAL FINANCING DEPENDENCE, SIZE AND PERFORMANCE**

This tables reports country random effects regressions of Tobin's Q on the interaction term between external financing dependence or the average firm size with respect to the industry (large firm share) and corporate governance indicators at country (INV\_PROT1) and company level (COMM1, BEBCHUK, INDEP1), and their interaction (INV\_PROT1\*COMM1, INV\_PROT1\*BEBCHUK, INV\_PROT1\*INDEP1). External dependence is the Rajan and Zingales (1998) measure of financial dependence at industrial level for US companies and updated for the year 2000. Large firm share is the Beck et al. (2005) industry k's share of employment in companies with more than 20 employees in the US for the year 2000. The logarithm of sales (LOG\_SALES) is used as control variable. Regressions are run with 2-digit SIC code industry fixed effects, and robust standard error clustered at country level (in parentheses). The sample of companies is all industries (All) excluded financial, or manufacturing industries only (Manu). Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Dependent variable: Tobin's Q	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Interaction (external dependence X COMM1)	0.014 (0.01)	0.011 (0.01)										
Interaction (large firm share X COMM1)	0.054*** (0.01)	0.070*** (0.01)										
Interaction (external dependence X BEBCHUK)			-0.024 (0.02)	-0.027 (0.03)								
Interaction (large firm share X BEBCHUK)			0.072 (0.04)	0.073 (0.04)								
Interaction (external dependence X INDEP1)					0.094*** (0.02)	0.087** (0.04)						
Interaction (large firm share X INDEP1)					0.116* (0.06)	0.238*** (0.07)						
Interaction (external dependence X INV_PROT1_COMM1)							0.008 (0.007)	0.006 (0.01)				
Interaction (large firm share X INV_PROT1_COMM1)							0.028*** (0.008)	0.038*** (0.01)				
Interaction (external dependence X INV_PROT1_BEBCHUK)									-0.008 (0.01)	-0.012 (0.01)		
Interaction (large firm share X INV_PROT1_BEBCHUK)									0.037* (0.02)	0.044** (0.02)		
Interaction (external dependence X INV_PROT1_INDEP1)											0.054*** (0.01)	0.050** (0.02)
Interaction (large firm share X INV_PROT1_INDEP1)											0.064* (0.03)	0.134*** (0.04)
LOG SALES	-0.09*** (0.01)	-0.12*** (0.01)	-0.09*** (0.02)	-0.12*** (0.01)	-0.11*** (0.01)	-0.13*** (0.02)	-0.09*** (0.01)	-0.12*** (0.01)	-0.09*** (0.02)	-0.12*** (0.02)	-0.11*** (0.01)	-0.13*** (0.02)
Constant, Industry & Year dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industries	All	Manu	All	Manu	All	Manu	All	Manu	All	Manu	All	Manu
Number of countries	22	22	22	22	22	22	22	22	22	22	22	22
Obs.	4567	2190	4374	2121	3828	1845	4567	2190	4374	2121	3828	1845
R squared (overall)	0.18	0.19	0.18	0.18	0.19	0.20	0.18	0.19	0.18	0.18	0.19	0.20