ISSN 0956-8549-574

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

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DISCUSSION PAPER NO 574

DISCUSSION PAPER SERIES

October 2006

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Corporate Governance and Regulation:

Can There Be Too Much of a Good Thing?

Valentina G. Bruno and Stijn Claessens[*+]

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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 corporate governance plays a crucial role in efficient company monitoring and shareholder protection, and consequently positively impacts valuation. We find substitution in valuation impact between corporate governance measures at the company and country level, with a possibility of over-regulation. Corporate governance appears also more valuable for companies that rely heavily on external financing, consistent with the hypothesis that corporate governance main role is to protect external financiers.

[*] We thank the Institutional Shareholder Services (ISS) for providing us with data on companies' corporate governance practices, and Vidhi Chhaochharia, Luc Laeven, Konstantinos Tzioumis and Michela Verardo for stimulating conversations. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the World Bank, its Executive Directors, or the countries they represent. Email: sclaessens@worldbank.org, vbruno@worldbank.org

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1. Introduction

In this paper, we explore the impact of country legal regimes and company corporate governance practices on company performance in a cross-country framework. Corporate governance is nowadays a widely used concept with many studies of country legal regimes or company-specific corporate governance practices and structures. These studies have highlighted what aspects of legal regimes and main corporate governance practices can boost performance and explored the channels through which corporate governance may improve performance. Although both legal regimes and company practices have been found to matter in corporate governance, by how much each does has not much been researched to date. By using data on company practices for companies from different legal regimes, we can specifically investigate the impact of country rules and detailed company-level practices on company valuation and degree of substitutability or complementarity between rules and practices. We find that the magnitude of the impact of company specific corporate governance practices varies by different legal systems and, in particular, we find that there can substitutions and even overregulation.

The importance of corporate governance has become well established in recent years. Corporate governance can be expected to 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, however, the existing empirical literature tackles the investigation of corporate governance from either only a country or company point of view. In their widely cited papers, La Porta et al. (1997, 1998,

2000, henceforth LLSV) show that higher investor protection at country level is associated with greater access to finance, more capital markets development, and higher valuation. Within the same system, however, companies adopt different corporate governance practices. 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 singular country affect shareholders, bondholders and investors and more generally company behavior and performance. These studies have tried to identify the corporate governance aspects most important for company behavior and valuation.

Studying, however, both country level corporate governance regime and company corporate governance practices at the same time can be important. For one, companies' specific corporate governance choices have to be considered in light of the level of corporate governance regime at the country level. Take, for instance, two similar companies implementing exactly the same governance practices but located in two different countries. The corporate governance practices may be valued differently by investors depending on whether they are required or voluntarily adopted. Or shareholders may consider some aspects of the legal regime as substitutes to corporate governance practice and value corporate governance practices differently depending on the legal regime in the country. Or, ceteris paribus, 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. 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. Institutional shareholders and corporations, if dissatisfied with

the country's legal regime and corporate governance practices, may lobby to change the regime. In other words, both the strength of country protection and companies' corporate governance practices are aspects to account for when studying the impact of corporate governance. By taken both into account, we can detect which practices affect performance, any degree of complementarity/substitutability between practices and legal regimes, and the magnitude of impact on performance. For instance, we will understand whether the constitution of board committees is important, whether their independence plays a role, and to what extent they impact in the presence of different legal regimes. The characteristics of the countries analyzed allow us to focus our attention on the effects of regulation rather than corporate governance practices alone.

When doing a cross-country analysis, the variety in corporate governance practices increases and, given the differences in legal regimes and consequent requirement, it will be all the more important to capture all the various corporate governance aspects. In part because they focus on one country only, however, the majority of the company-level studies only cover a few corporate governance aspects. The fact that studies for different countries looking at the association between board independence and performance have found contradictory results (Hermalin and Weisbach, 2003), may be due to the lack of a comprehensive coverage of aspects of corporate governance practices.[1] A company may not have an independent board, but may have strong board committees and a non-entrenched board, which still guarantee appropriate internal and external (market) monitoring. Moreover, for a cross-country analysis it will be important to cover as much of the specifics of the countries as possible, especially the details of the different legal frameworks, or other various

[1] For instance, the study by Gompers, Ishii and Metrick (2003) limit the coverage of corporate governance to the presence (or the lack) of anti-takeover provisions (ATPs) in companies' charters, thus potentially ignoring other important governance practices

aspects affecting the impact of corporate governance practices. Here, building on LLSV-contributions, much progress has been made in recent years to document various aspects of countries' legal regimes, and we can draw on this literature.

To our knowledge, only two studies have so far looked at both macro and micro perspectives. Durnev and Kim (2005) and Klapper and Love (2004) show the impact of corporate governance to be a decreasing function of legal protection. However, these studies have used only a broad measure of corporate governance in the form of an index based on the responses from financial analysts on aspects of transparency, independence, accountability, social responsibility and discipline. Apart from being more subjective, which can introduce biases, such index treats all corporate governance practices equally. However, for US companies, Bebchuk et al. (2004) find that not everything equally matters for performance, and that the associations between a broad index and performance may be driven by only few aspects. More generally, with more detail on corporate governance practices one can answers 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? Do compensation arrangements give incentives to managers to exert more effort, and hence generate higher performance? How do these aspects impact depend on the local legal regimes? Are there interactions between certain aspects of legal regimes and corporate governance practices in terms of company performance?

The Institutional Shareholder Services (ISS) dataset provides us with a unique opportunity to investigate the interaction between the corporate governance regime at the country and company's level, and performance in a cross-country framework. The coverage of companies and countries is quite wide, approximately 5300 U.S. companies and 2400 non-U.S. companies from 22 advanced economies for the period

2003 – 2005. In contrast to the above empirical studies, not only we do have a broad measure of the company's corporate governance quality in the form of an index, but we actually know the adopted corporate governance practices of each company. Amongst others, ISS gathers information on the composition and independence of boards and committees, the level of shareholders' involvement in the company's decisions, compensation agreements, and relations with the auditors.

Using this data, we find that across all 23 countries mainly three corporate governance channels are positively and significantly associated with performance: the country-level protection of minority shareholders, the degree of board independence, and the existence and independence of board committees. The importance of minority rights protection has been well documented. The independency of board committees matters more for performance than simply their formal existence. Also, the level of board entrenchment is inversely associated with performance, but this evidence is weaker. On the contrary, transparency and compensation practices do not seem to be associated with superior performance or better incentives for managers. The corporate governance channels are particularly evident for highly financial dependent industries, where strong and independent boards mean more highly valued companies. Corporate governance helps relax external financing constraints, by alleviating signaling problems, and ensures that managers exert enough effort in value maximizing projects and do not expropriate private benefits. We also find evidence that strong corporate governance practices pay off less for small size companies, maybe because strong corporate governance practices involves cost in terms of monitoring, time and resources which could offset the benefits. However, once we control for cross-industry differences in external financing dependence, we find that size no longer

matters, which suggest that corporate governance matters more for external financing, independently of size considerations.

Importantly, we find substitution effects between the strength of legal protection and the companies' corporate governance practices. In particular, we find that better country level investor protection matters less when companies already have strong internal corporate governance (and vice-versa). We even find that excessive regulation can harm valuation, consistent with the hypothesis that excessive regulation can harm managerial initiative and generate lower returns. This has important consequences from a regulatory viewpoint. If high investor protection in the form of strong, independent, and pro-shareholder boards is already in place, as for the average US company, there is less value to increase the regulatory burden.[2] On the contrary, if companies of a specific country tend to adopt weak corporate governance practices, regulatory intervention will definitively beneficial. 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.

We contribute to the literature in various ways, both in findings and methodological aspects. In terms of findings, we are the first to document the possible counter-effects of strong regulation. The fact that strong regulation does not necessary mean optimal regulation has important policy implications. By bearing in mind that stronger corporate governance does not necessary mean better corporate governance and assessing the impact of the different corporate governance channels, a policy-

[2] 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.

maker can decide whether to intervene is an efficient way to improve companies' performance and shareholders' returns.

In methodological aspects, by using detailed panel data on companies' corporate governance practices, we can be less concerned about reverse causality issues. Since we base our analysis on detailed aspects of corporate governance, we can also disentangle the channels through which corporate governance acts. We furthermore ensured that our results are robust to the inclusion of different and various control variables, the use of different statistic techniques and performance variables (Tobin's Q and ROA), and autocorrelation issues. We furthermore show that corporate governance acts especially as a bonding-monitoring-discipline device for companies that can expect much 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, the main financial data used in the analysis and the empirical methodology used. Section 4 discusses the results and section 5 concludes.

2. Literature

We are interested in disentangling different aspects of corporate governance, inter-relating these aspects with country-specific measures of legal protection and studying their association with performance. We want to do this since such analysis will teach us whether the implementation of more corporate governance practices and legal requirements is unconditionally reflected in higher firm performance. For instance, Gompers, Ishii and Metrick (2003) find that the more antitakeover

provisions (ATPs) a company has in its charter, the lower its performance is.[3] However, the literature has identified some examples of the counter-effects of strong corporate governance. For instance, 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 necessary mean better performance and higher valuation because costs may offset the benefits. The optimal trade-off depends, among others, on the degree of interaction between internal (boards, committees, company charters, disclosure rules) and external (takeovers, product market competition, ownership structure, legal protection) mechanisms of corporate governance.

Theory suggests that there can be trade-offs from more corporate governance requirements. Burkart, Gromb, and Panunzi (1997) argue in particular that too much monitoring and legal protection may hurt managerial initiative and consequently generate lower returns and valuation. They argue that constraints on managers through monitoring may be costly precisely because managerial discretion comes with benefits. The manager is less inclined to show initiative, like searching for new investment projects, when shareholders are more likely to interfere. Along the same lines, Boot et al. (2006) find that corporate governance controls may sometimes prevent management from doing what it wants, thus exacerbating agency problems. In other words, there is a trade-off between the gains from monitoring and those from managerial initiative and excessive monitoring can therefore be inefficient.

Furthermore, there is at least anecdotal evidence that the implementation of corporate governance practices may not be the result of an optimal contracting, but of

[3]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 even assuming it is valid, its association with performance is not necessary monotonic (Hannes, 2002).

external pressures. Increasingly, public opinion, press, and institutional investors consider corporate governance a tick-box exercise, where the more boxes ticked, the better (Arcot and Bruno, 2006). Numerous, sophisticated corporate governance practices inside companies are being required by investors. Worldwide, there is also an increasing appetite for more regulation and rigid laws (e.g., Sarbanes-Oxley, hedge funds transparency law, reforms of the company laws), especially after corporate failures. But many of these requirements do not have strong theoretical, let alone empirical support that they help with firm performance. By using cross-country data, we can test what the impact of higher legal protection is in the presence of already elevated investors' protection at company level (and vice-versa) on performance.

Corporate governance is both a way to protect investors from managerial expropriation thus easing companies in accessing financing and enhancing valuation, and, more generally, a device to reduce agency costs and limit pet projects, leading to more efficient investments, boosting growth and performance. In particular, corporate governance can mitigate the problem of inefficient allocation of resources (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). In general, a company's cost of funds will only be reduced to the extent that investors expect the company to be governed well after the funds have been raised. It is therefore important for the company to bond itself credibly to higher quality corporate governance (Doidge et al., 2004). 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 problem is particularly large for companies that heavily rely on external financing.[4] But a test whether companies which are heavy users of external finance are valued more when better corporate governance practices are in place can not unambiguously show that corporate governance reduces agency problems of moral hazard and adverse selection. The reason is that associations between corporate governance and company financing dependence can arise from reverse causality when companies improve corporate governance practices as commitment devices when raising new funds. Conversely, being more external financing dependent could trigger changes in the companies' corporate governance structure, in part as investors require changes. Therefore, using the actual external measure of external financing—as in Demirguc-Kunt and Maksimovic (1998)—could create endogeneity problems.

In a seminal paper, Rajan and Zingales (1998) show how external financing dependent companies grow more in countries with a higher level of financial development. They solve the simultaneity or omitted variable bias—financially more developed countries having companies with a greater degree of external financing—by identify an industry's need for external finance from data on U.S. companies. The U.S. can provide a benchmark for external financing dependence if two conditions hold: capital markets in the U.S. are relative frictionless, and a

[4] 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 affect 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 could potentially incur. This effect shifts the supply curve down, thus again increasing the quantity of available external finance. Overall, the effect on the equilibrium quantity is always positive.

technological demand at the industry level for external financing carries over to other countries. We use a similar theoretical argument to investigate whether companies belonging to industries that are financially more dependent are higher valued when displaying better corporate governance practices or regimes. This provides a test whether corporate governance adds value because shareholders rights are more protected for those companies most in need of external financing, without the simultaneity problems.

Despite conceptually similar, our analysis differs from the Rajan and Zingales's methodology in two aspects. First, we do not just investigate a country-level measure of governance protection to evaluate the effects in the presence of different external financing dependence, but we also use a measure at the company level. Companies of the same country make different corporate governance choices, which may reflect in different valuations for companies within the same industry. A country-based measure of corporate governance alone, such as the LLSV (1998, 2006) antidirector index, would not fully capture companies' corporate governance heterogeneity. Related, we use the detailed data on company's corporate governance choices, which can identify what channels drive higher valuation in the presence of external financing needs. Second, we do not limit our analysis to manufacturing industries only, but include all companies (except for financial institutions).

Besides affecting the availability and costs of external financing, corporate governance can affect economic performance in a number of ways. By putting more pressure on management and potentially punishing management for bad performance, better corporate governance encourages managers to pursue more value-maximizing projects, be more efficient in company operations, etc. (Jensen, 1986). These effects of corporate governance would not need to differ not in with external financing

dependence. They can be industry or country dependent, varying with company leverage, degree of assets intangibility or because of cross-listing in other exchanges.

Another important variable affecting the impact of corporate governance on company valuation may be the size. In the corporate governance literature, some theories and empirical evidence imply that the strong corporate governance is more beneficial for larger companies than for small companies. For instance, Chhaochharia and Grinstein (2006) find that excessive regulation can be especially counterproductive for small companies, where the costs of complying with corporate governance rules more likely outweighs the benefits. In the general finance literature it has been found that size matters for company performance. Small companies may have better growth opportunities and this is reflected in higher valuation (Shin and Stulz, 2000). Size also proxies for company age; older and larger companies tend to have a lower ratio market-to-book ratio (Durnev and Kim, 2005). Beck at al. (2005), for example, find that there is a size effect in the association between financial development and growth, possibly smaller companies face tighter credit constraints than large companies.

In order to limit the endogeneity problem between the 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 large-size industries 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 as for small companies.

3. Data and Econometric Model

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 U.S. companies and 2400 non-U.S. companies from Canada, Europe, East Asia and Pacific for the period 2003 – 2005. The non-U.S. companies it covers are all large and belong to the main indices of their respective country stock markets. For instance, the U.K. companies mainly belong to the FTSE350 index. On the contrary, the U.S. coverage is wider as it covers also mid- and small cap companies. Therefore, to avoid over-sampling problems we select a sub-sample of U.S. 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;

- whether dual class capital structure exist;
- compensation characteristics: whether option re-pricing is prohibited, all stock-incentive plants are adopted with shareholders approval, company expenses options, and options grants align with company performance;
- relations with the auditors: whether auditors are ratified at the recent shareholder meeting, and the fees paid to auditors are strictly 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 other corporate governance practices which we do not consider in our analysis. This is in part because of missing or non available observations which reduce our sample too much. But it is also because of limited variability within countries among 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 item in our index would generate severe outlier problems which would drive the econometric results.[5] 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

[5] 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 of the corporate governance provisions as done in Bebchuk et al (2004). Of the 18 provisions considered by Bebchuk et al., for example, only 4 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.

are not easily theoretically motivated. We therefore exclude them from our analysis to avoid any spurious results.

Using the above provisions and on the basis of common 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 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 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 poisons 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 1 if a 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. Thus, we construct the index **INDEP2**, which gives points if there is no former CEO on the board and there is a majority of independent directors on the board (with the index to vary from 0 to 2), and the index **INDEP3** which, in addition to INDEP2, considers 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 committees, a higher degree of transparency can be guaranteed by the ratification of the choice of auditors at the shareholders' annual meeting. Further, if fees paid to the auditors do not include consulting charges, the existence of possible conflicts of interests will be less. Recent high-profile frauds and some accounting literature (e.g., Kohlbeck and Mayhew, 2004) highlight the use of related party transactions as 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.
5. *Compensation index*. Some compensation practices could indicate limited shareholders' power or monitoring on the board, leading to private benefits. We therefore give one point if shareholders have power in approving stock plans, if the options are expensed, if re-pricing is prohibited, and if the average options granted in the past three years as a percentage of basic shares (*burn rate*) did not exceed 3% (which would be in line with the peers). The index **COMP** varies from 0 to 4.

Summary statistics

Of the total 7078 observations in the ISS dataset, we exclude financial companies and companies of countries with no La Porta et al. (1997, 2006) LLSV index (Bermuda, 9 observations) or for which we have just 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 thus left with a total of 5857 company-year observations, for which we have a complete set of information for what concerns 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 in INDEP1, 922 in INDEP2, 2348 in INDEP3, 2829 in TRANSP, and 2458 in COMP. Amongst others, we have very limited information about 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).

Table 1.A reports summary statistics of the governance indicators described above by country. The analysis of the data by country shows us an interesting picture of the differences in corporate governance practices across countries. Hong Kong, Singapore, Spain, and UK score the highest (5) in the LLSV index, while Greece and Belgium rank at the bottom with a score of 2. 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 of decision to shareholders. On matters of board independence, Italian and Japanese companies are clearly at the bottom of the rank in all three corporate governance indicators (INDEP1, INDEP2, INDEP3). There is not much variation in the TRANP index across countries. Finally, Canadian (COMP=3.42) and British companies (COMP=3.29) tend to be more strict on matters regarding compensation.

Table 1.B shows the percentage of incidence of the 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, companies have a nomination committee (52%), but only in 26% of the cases we observe an independent nomination committee. 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%) a simple majority is required to amend the company charters/bylaws. In 72% of companies, there is no former CEO on the board (INDEP2), and in 91% of company-year observations the CEO is not considered to have related party transactions (TRANSP). Finally, shareholders' approval of stock plans is largely required (89%), but only in 36% of the cases is the option burn rate in line with peers.

Table 1.C shows the overlap or lack thereof between country-level requirements and corporate governance practices, and among corporate governance practices. For instance, it shows the relation between the level of investor protection (LLSV) and the existence of committees (COMM1). The majority of companies in countries with the

LLSV index less than 3 has *no committees* in the board (6.45%). However, when LLSV index is equal to 3 the majority has *all four committees* (20.23%). When LLSV index is between 3.5 and 4, only *one committee* is present on average (23.99%). Finally, when LLSV index is higher than four, in the majority of the cases (14.22%) do companies have *three committees*. Therefore, there is not a clear and monotonically trend between investor protection at the country level and the existence of board committees.

Similarly, we can consider the correlation between the indicators BEBCHUK and LLSV. In the majority of the cases, BEBCHUK is equal to one, independently from the LLSV value. Also, when BEBCHUK =1, COMM1=1 or COMM1=3 are equally likely. We also see some congruence among company corporate governance practices. There are, for example, a large number of companies with both all four board committees and an independent board (31.11%). However, board independence is uncorrelated with the presence of all four provisions in the BEBCHUK indicator (2.99%)

Financial data

For U.S. companies, financial data are downloaded from COMPUSTAT, while for non-U.S. companies we use Worldscope data. As mentioned before, our companies are large in size, with an average total assets of $US10 million and an average total sales of $US7.9 million (Table 1.D).

We use Tobin's Q as our main performance measure. We construct it following the method in Kaplan and Zingales (1997) and subsequently also used in Gompers et al. (2003). Specifically, Tobin's Q is defined as the market value of assets divided by the book value of assets, where the market value of assets is computed as book value

of assets plus the market value of common stock less the sum of the book value of common stock and balance sheet deferred taxes. The average Tobin's Q of the companies in our sample is 1.67. 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 of the companies in our sample is 0.06.

As control variables, we use the logarithm of sales (LOG_SALES), the ratio property-plants-equipments to sales (PPE_SALES), the 1 year growth of sales (G_S), the ratio capital expenditures to sales (CAPEX_SALES), the ratio total debt to common equity (D_E), and a dummy ADR equal to 1 if a company had traded American Depository Receipts.[6]

We construct the measure of external financing dependence as in Rajan and Zingales (1998) by using the COMPUSTAT universe of US companies for the year 2000. The Rajan and Zingales original industrial measure refers to only US manufacturing industries for the year 1980; as our data are for the period 2003-2005, we construct an update measure of the 2000 US external financing dependence for all 2 digit SIC code industries. Originally, Rajan and Zingales use the 3 digits ISIC code for identifying industries, which typically corresponds to the two 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.[7]

[6] We take the 1% and 99% centile of the variables G_S and D_E due to the presence of serious outliers. As common in the literature, we also drop negative values of common equity.

[7] 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.

Econometric model and strategy

To investigate the associations between corporate governance, external financing dependence and performance, we use two econometric specifications.

Corporate governance and 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 firm characteristics, over the period 2003 – 2005. Specifically, we estimate the following cross-country OLS regression with time and industry fixed effects:

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

where Y is Tobin's Q, the country variable $LLSV$ is the La Porta et al. (1998) country anti-director rights index as revised by Djankov et al. (2006), 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.

We control for the usual variables found to be associated with performance, size, tangibility of assets, and cross-listing in other exchanges, for which we use the logarithm of sales (in US$), the ratio property, plants, and equipment (PPE) to sales, and a dummy equal to 1 if a firm trades American Depository Receipts (ADRs) as proxies. As argued in 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 as well. 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 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). In addition, as further robustness checks we use a second 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.

Regression (1) is run with time fixed effects, 2-digit SIC code industry fixed effects, and clustered standard error at country level as this is the source of possible autocorrelation. We do not use country fixed effects because the LLSV 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 common in this literature, financial companies are excluded in the main regressions, but we do perform robustness checks including financial companies.

Theoretical and empirical literatures predict the coefficients β_1, β_2 to be positive, while γ to be negative. Since we are interested is the overall economic effect of an increase in the investors' protection strength in the presence of different company's corporate governance practices, we investigate as well some net effects by summing various coefficients.

Corporate governance, external financing dependence, 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 CG and estimate the following model:

$$Y_{i,k,t}^{c} = \alpha + \beta \cdot CG_{i,t}^{c} \cdot EXT\_DEP_{k} + Size_{i,t}^{c} + (Fixed\ effects)_{k,t}^{c} + \varepsilon_{i,k,t}^{c}, \qquad (2)$$

where 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. Y and CG are as defined above. The regression is run with country, industry, and time fixed effects, with robust standard errors clustered at the industry level. The United States is dropped as it is the benchmark. To control for legal characteristics, instead of fixed country effects, we alternatively use the $LLSV$ index of investors' protection. As valuation measure we use Tobin's Q.

If corporate governance matters more for external financing dependent companies, we would expect the coefficient β 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 the management enhances investors' confidence for those companies and lead to higher company's valuation.

As robustness checks, we control for the tangibility of companies' assets and cross-listing in other exchanges. We also run cross-section versions of regression (2) to filter the time effect in the estimation. In this specification, we consider the year with the greatest number of observations (2005) in order to limit the problem of losing too many degrees of freedoms and we take the two-year 2004-2005 average Tobin's Q as performance measure.

Corporate governance, external financing dependence, size and performance

As in other papers, we check whether our evidence is robust even when controlling for cross-industry differences in size. As a proxy measure of each industry's natural size, we use the industry *k*'s share of employment in companies with more than 20 employees in the United States.[8] The models we estimate with this size variable are then[9]:

$$Y_{i,k,t}^{c} = \alpha + \beta \cdot CG_{i,t}^{c} \cdot Large\ firm\ share_{k} + Size_{i,t}^{c} + (Fixed\ effects)_{k,t}^{c} + \varepsilon_{i,k,t}^{c}, \qquad (3.1)$$

and

$$Y_{i,k,t}^{c} = \alpha + \beta_1 \cdot CG_{i,t}^{c} \cdot Large\ firm\ share_{k} + \beta_2 \cdot CG_{i,t}^{c} \cdot EXT\_DEP_{k} + Size_{i,t}^{c} + (Fixed\ effects)_{k,t}^{c} + \varepsilon_{i,k,t}^{c}, \qquad (3.2)$$

[8] Such proxy is available from the 2000 U.S. 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 three 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 of the number of companies classified according to the 2 digit SIC code. Since in our regression we control also for industry fixed effects, other than countries and time dummies, this could generate a lost of degree of freedoms. There are few cases where more than one industry classified according to the 3 digit NAICS code correspond to one industry classified according to the 2 digit SIC code. In such circumstances, we take the average.

[9] As in Beck et al. (2005), we find a very small positive correlation between Large Firm Share and External Dependence, which suggests that the industry characteristics explaining firm size are not the same as the characteristics explaining technological dependence on external finance.

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 U.S. Census, and Y, EXT_DEP, $Size$ and CG are as defined above. The regressions are run with country, industry, and time fixed effects, with robust standard error clustered at the industry level. Again, if corporate governance matters more for large and high external financing dependent companies, we would expect the coefficients β_1 and β_2 to be positive and significant.

4. Results

Corporate governance and performance

We first show the results of the associations between governance choices and performance, estimated from equation (1). As we face missing observations, we first consider the association of the indices COMM1, BEBCHUK, and INDEP1 with Tobin's Q, as these three indices have the most observations (Table 2).

When we consider the three indices separately[10] (columns I, II, and III), each of the coefficients are positive and significant at the 1% level, meaning that the existence of board committees, lack of entrenchment at the board level, and board independence are positively associated with higher valuation. The interaction terms with LLSV are

[10] Additionally, we replicate the test performed in Bebchuk et al. (2004) on US companies only. We find that the governance indicator BEBCHUK is positive and significant also for our sample of companies. Bebchuk et al., however, do not control for potential autocorrelation, but only for heteroskedasticity and cross-sectional dependence (Fama Mac-Beth). However, autocorrelation is an important issue in panel data. Indeed, when we regress Tobin's Q on the indicator BEBCHUK for our sample of US companies, we find that the governance coefficient is significant at 2% level when using White heteroskedastic errors, but only at 9% when clustering at the company level.

all negative and significant, which means that the impact of these corporate governance practices at the company level is less when investors' protection at country level is already high. The index BEBCHUK becomes significant at only the 10% level when is not included alone in the regression, and in particular, the interaction with LLSV is not significant.

By calculating the economic impact of the constructed indices we can show the impact of changes in legal reforms, where we find a result suggesting possible overregulation. The regression result of column VI implies that a one point increase in the LLSV anti-director index is associated with an increase in Tobin's Q of 0.328 - 0.087 * COMM1 - 0.198 * INDEP1. The overall magnitude of the impact of legal reform thus depends on the degree of corporate governance in place at the board level, and in particular, investor country protection is the less relevant the better the board governance already is. For instance, when COMM1 = 1 and INDEP1 = 0, the level Italian companies at which are on average, the effect of an increase of one in the LLSV index corresponds to an increase in Tobin's Q by 0.241, of a 14% increase over the average Q of 1.67. However, for COMM1=4 and INDEP1=0, higher shareholder protection at the country level is associated with a small decrease in Q by 0.02, 1% less than the average Tobin's Q. The effect is more negative when the board consists of a majority of independent directors (INDEP1=1), as is for example, the case for US companies, because an increase in LLSV-index of one is associated with a decrease in Tobin's Q by 0.218.[11]

We can also consider the impact of a one-point increase in COMM1 on Tobin's Q: this is equal to 0.429 - 0.087 x LLSV, which means that if LLSV is 5, as in the

[11] In our sample there are 1589 company-year observations having COMM1=4 and INDEP=1, the largest majority of which having the LLSV index equal to 3.

case of UK, the impact is roughly nil. This suggests that constituting board committees is almost irrelevant when investors' protection is already high at the country level. This is not true, however, when considering the degree of board independence INDEP1, as the overall effect is still positive even when the LLSV index is at 5.

The coefficients of the control variables are in line with the results found in the literature (e.g., Shin and Stulz, 2000, Durnev and Kim, 2005): size (log of sales) and capital intensity (the ratio property, plants, and equipments over sales) are negative and highly significant, while the dummy ADR is positive and significant. Furthermore, such results are confirmed even when we cluster the standard error at the company level (results not shown here). However, the significance of all the coefficients dramatically increases, which may indicate that we are underestimating the true standard errors and clustering at country level is therefore more appropriate.

We perform several robustness checks, to confirm both the significance of the results and the economic impact of the corporate governance variables (Table 3). First, we run regression (1) including financial companies (SIC code 6). The results found before are confirmed, and they are actually more significant (column I). The coefficient of BEBCHUK is significant at the 1.5% and the interaction with the LLSV is now significant at the 3.3%. When we consider the economic effects, the overall negative effect on performance in the case of strong corporate governance is still confirmed.

High values of Tobin's Q may be triggered by special circumstances not captured by other variables, including industry fixed effects. This may be the case, for instance,

for high-tech companies,[12] which are associated with higher valuation by nature. To control for this, we run regression (1) excluding such companies:[13] the coefficient of BEBCHUK loses its significant, but all the previous results remain valid (column II).

We further control for differences in the legal systems which may not be entirely captured by the LLSV anti-director index (column III). Indeed, different corporate governance practices could be due to existing different country regulations and historical traditions. For instance, UK and European companies are characterized by a flexible regulatory system known as "comply or explain", which companies do not have to abide by law. On the contrary, US and Canadian companies follow a tradition of legislative provisions rather than regulatory practices. We control for these institutional differences by adding dummies for continents (Europe, Asia, and America). The signs and coefficients of the corporate governance variables for the resulting regression are largely not affected by this inclusion: the coefficients of COMM1 and INDEP1 are now significant at the 1.9% level, and in particular the effect of board independence is slightly lower (from 0.97 – column VI, Table 2 – to 0.79). The negative impact of strong regulation is still confirmed: on average, an increase of one in the LLSV index is associated with a decrease in Tobin's Q by 0.19 if the company has all 4 committees and an independent board.

Durnev and Kim (2005) argue that the LLSV antidirector index captures only de jure aspects of regulation, but not de facto levels of enforcement.[14] In their paper, they

[12] Such companies are identified by the 4 digit SIC codes: 3571, 3572, 3575, 3577, 3578, 3579, 3651, 3652, 3661, 3663, 3669, 3671, 3672, 3675, 3676, 3677, 3678, 3679, 3674, 3821, 3822, 3823, 3824, 3825, 3826, 3829, 3827, 3861, 3812, 3844, 3845, 4812, 4813, 4822, 4841, 4899, 7371, 7372, 7373, 7374, 7375, 7376, 7377, 7378, 7379.

[13] Financial companies are again excluded.

[14] This is not entirely correct, because the LLSV index measures, amongst others, the difficulty faced by minority shareholders in challenging resolution that benefit controlling shareholders but damage the company. Further, in our sample we do not have countries like Ghana or Kazakhstan that score the

correct for the level of enforcement by multiplying the LLSV index by the rule of law, an index developed by the International Country Risk Guide (ICRG). Unfortunately, we do not have an update measure of the rule of law for our sample period. We overcome this problem by taking the ex-post measure of private control of self-dealing developed by Djankov et al (2006).[15] This index of private enforcement looks at the ease with which minority shareholders can prove wrongdoing of management or controlling shareholders. We therefore create the variable LEGAL by multiplying the LLSV anti-director index and the ex-post private control of self-dealing. The new index ranges from a minimum of 0.74 to a maximum of 5, with a standard deviation of 1.021. We use this variable as a measure of the effective degree of investors' protection in our regression, as it takes into consideration both de jure and de facto levels of investors' protection.

Column IV shows the results. The impact of LEGAL is positive and significant. The coefficients of COMM1 and INDEP1 remain positive and significant, and the interaction terms with LEGAL are negative and significant at the 4% and 10% percent respectively. The effects of excessive regulation are clear from this econometric specification as well: following the same example as above, when COMM1 = 4 and INDEP1 = 1 one standard deviation increase in LEGAL is associated with a decrease in Tobin's Q by 0.13.

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maximum (5) as UK does. Nevertheless, we correct the LLSV index for the degree of enforcement, too.

[15] The self-dealing index constructed by Djankov et al. (2006) is the sum of two indices: the ex-ante private control of self-dealing and the ex-post control of self dealing. The ex-ante index keeps track of disclosure and approval requirements imposed by law and in some aspects it is very similar to the LLSV index. Not surprising, for our sample of countries the correlation between the LLSV index and the ex-ante private control of self-dealing index is very high (0.70). The ex-post control of self dealing mainly looks at enforceability issues (standing rights to sue, ease of holding management or the body liable for civil damages) as it scores how easy it is for minority shareholders to obtain redress through the courts in case of legal disputes.

As further robustness checks, we include three extra control variables in equation (1): the one year growth of sales to control for growth opportunities (G_S), the ratio of capital expenditures to sales to control for investment opportunities (CAPEX_SALES), and the ratio debt to equity to control for leverage and degree of debt financiers' monitoring (D_E) (column V). The results found confirm the evidence mentioned above.

Finally, we perform additional robustness checks (results not shown here). We use return on assets (ROA) as a performance measure instead of Tobin's Q. The coefficients of the LLSV index, COMM1 and INDEP1 are still significant at the 10%, 5% and 1% respectively, as well as are the interaction terms. We also modify the indicator COMM1 by excluding the information on the existence of the governance committee. The presence of a governance committee is not advocated by all codes of corporate governance, and in general it is believed that the presence of a nomination, audit, and compensation committee is more important to assure effective monitoring by the board than the existence of a governance committee. Our results, however, are not affected by this modification in the COMM1 indicator. We also run regression (1) excluding companies with dual class capital structures and the results do not change.[16] Finally, to assure that the significance and the magnitude of the coefficients estimated are not driven by outliers, we perform two checks: we run regression (1) using the quantile methodology and winsorising the values of Tobin's Q at the 1%. The signs, coefficients and the overall negative effect in the case of strong corporate governance are all confirmed under these specifications.

[16] Bebchuk et al. (2004) exclude firms with a dual class structure, arguing that in these companies the holding of superior voting rights might be sufficient to provide incumbents with a powerful entrenching mechanism that renders other entrenching provisions relatively unimportant.

In Table 4, we investigate whether other company corporate governance features, as captured by the indices INDEP2, INDEP3, TRANSP and COMP, are significantly associated with Tobin's Q. Such indices are more refined because they consider, for instance, other aspects of independence rather than simply the percentage of independent members on the board. However, the sample is reduced by 30-50% and these results thus have to be considered with some caveats.

The indices INDEP2 and INDEP3 are never significant (columns I and II), which suggests that in terms of independence, what matters is the effective independence at board level rather than other matters such as the separation of the CEO/Chairman roles.[17] In this context, it is important to highlight that the ISS use stricter criteria when judging independence than what companies effectively state in their annual reports. The evidence nevertheless confirms some of existing studies which find contradictory results on the performance effect of the separations between CEO/Chairman (e.g., Brickley, Coles, and Jarrell, 1997).

Also, while TRANSP and COMP do not seem to impact performance (columns III and IV), the coefficients of the indices COMM1 and INDEP1 continue to remain positive and significant, while BEBCHUK is significant in 3 out of 4 specifications.

Finally, we analyze the impact of the three indices covering the composition and level of independence of the board committees (Table 5). We run again equation (1), adding the three committee indices and the entrenchment index one by one. We exclude the dummy on board independence since the probability of having independent committees depends, amongst other, on the degree of independence of the board. Including simultaneously highly correlated variables, such as board and

[17] We also run regression (1) with a dummy equal to 1 if the company has a separated CEO/Chairman. Both the estimated coefficient and the interaction term are not significant.

committees independence, could create multicollinearity problems and underestimate true standard errors.

We first consider COMM1 and COMM2 separately (columns I, and II, respectively). The coefficient of COMM2 is higher than the coefficient of COMM1, highlighting a greater impact of independence of committees rather than the mere existence of them. These results remain even after adding the BEBCHUK index to the regressions (columns III and IV). The coefficient of the interaction terms are again negative and significant, suggesting a greater impact in case of lower investors' protection. As before, an increase in the LLSV anti-director index is associated with a decrease in Tobin's Q when corporate governance practices of the company already suggest an elevated level of protection. All the above results are robust to the inclusion of continental dummies and further control variables, and using return on assets (ROA) as a performance variable (results not reported).

Corporate governance, external financing dependence, and performance

We next discuss the results of the associations between corporate governance, financing dependence and performance using regression specification (2). Table 6 shows the coefficients of the interaction term when taking the governance indicators one by one, with the logarithm of sales as the only control firm variable. The regression is estimated using OLS and includes country, industry, and time dummies. The interaction terms coefficients of external financing dependence with COMM1, COMM2, INDEP1, and INDEP2 are all positive and significant, while BEBCHUK, INDEP3, TRANSP, and COMP are not statistically significant. This suggests that companies belonging to industrial sectors that rely more on external financing perform better the more board committees they have and if committees on the board

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 helps companies' performance particularly when naturally dependent on external financing.

In Table 7, we check whether the significance of the interaction terms related to COMM1, COMM2, INDEP1, and INDEP2 remains after adding as further controls the ratio PPE to sales, the dummy for ADR companies, and the LSSV index. We find that the magnitude and the significance of the results found above are confirmed. We can show the importance of some corporate governance features for more financing dependent firms using the following example. The industries at the 33% and 66% percentile have a ratio of external financing dependence equal to 0.024 and 0.47 respectively. The coefficient estimate for the interaction term for the regression in column I predicts that the difference between the valuation of the 33rd and 66th percentile financial dependent industry to be 2.3% higher in a company with an index COMM1 equal to 3 compared to a company with COMM1 equal to 1.

We find further that the coefficient estimate of INDEP1 (0.10) (column V) is higher than that for committees COMM1 (0.026) and COMM2 (0.029), indicating the importance of board independence for valuation with regards to higher external financing dependence. This is confirmed in the regression presented in column IX. When including the interaction terms *external dependence X COMM1* and *external dependence X INDEP1* in the same econometric specification, the coefficient of the interaction with COMM1 is still positive but not significant anymore. The degree of independence of the board is reducing the impact on performance of the presence of

board committees, indicating that the market pays great attention to the degree of board independence when allocating funds.

As robustness check, we run a cross-sectional version of the regression (2). In their original paper, Rajan and Zingales study the relations between external financing dependence, financial development and growth using a cross-section specification. In our test, we consider the corporate governance practices in the year 2005, because we have the largest number of observations. As dependent variable, we compute the two year average 2004 – 2005 Tobin's Q. We run again regression (2) without time fixed effects and making the standard errors heteroscedastistic robust. The results (Table 8) confirm that companies belonging to particularly highly financially dependent industries enjoy higher valuation when their corporate governance, represented by the indicators COMM1, COMM2, INDEP1 and INDEP2, is better.[18]

Finally, we check whether the associations between corporate governance, external financing 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 (regressions 3.1 and 3.2). The results in Table 9 show that companies belonging to industries with larger shares of big companies (regression 3.1) perform better if they have stronger corporate governance in the form of independent board committees and executives on the board (columns I, III, V, VII). This evidence suggests that the market views strong corporate governance to increase value only for those companies that are naturally large enough. This could be because only these companies can naturally bear the costs of it. When controlling for cross-

[18] We also ran regression (2) including the "direct" effects (e.g., we ran $Y_{i,k,t}^{c} = \alpha + \beta_1 \cdot \text{COMM1}_{i,t}^{c} + \beta_2 \cdot \text{COMM1}_{i,t}^{c} \cdot EXT\_DEP_k + Size_{i,t}^{c} + (Fixed\ effects)_{k,t}^{c} + \varepsilon_{i,k,t}^{c}$, and so forth). The results on the interaction terms are unchanged and the coefficient of the COMM1 term is still signification, but COMM2, INDEP1, INDEP2 are not statistically significant.

industry differences in external financing dependence, we find that earlier results are only confirmed in the case of COMM1 (column II), but the coefficients of the interaction terms with *external dependence* remain significant in all the specifications, but the interaction term with size no longer (columns II, IV, VI, and VIII).

Putting together the results from regression (1) and from regressions (2) and (3) on the associations between corporate governance, external financing, size and performance, 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 and higher valuation. 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, but too strict requirements may have costs for companies that largely relying internal financing and for small companies.

5. Conclusions

In this paper we have analyzed how and through what channels corporate governance affects performance. Consistent with existing studies, we find that corporate governance exert a positive effect on performance. This is because corporate governance acts as a *monitoring* and *discipline* device, ensuring that management pursues value-maximizing goals. Not everything contributes equally to this association, though. The level of shareholder protection at country level, board committees, and independence seem to play a more important role in firm performance than other corporate governance practices.

We also that corporate governance is more important to companies that especially rely on external financing. This is because corporate governance acts as a *signaling*

device of positive NPV projects, thus allowing a more efficient capital allocation in the presence of segmented markets. Once the funds have been allocated and the *signaling* role ends, corporate governance still ensures its positive role through the *monitoring* of the management.

Finally, we find that an optimal form of corporate governance is not necessarily a strong form of corporate governance. Increasing the number and severity of country-level regulations or the number of company-level practices may not always lead to superior performance. The straight-jacket imposed by strong corporate governance can, besides being costly, limit managerial freedom of initiative, and thereby negatively affecting performance. Overall our results suggest that only for large companies or for companies that naturally depend heavily on external financing do very strict corporate governance practices or requirements make sense.

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TABLE 1.A: CORPORATE GOVERNANCE INDICATORS BY COUNTRY

This table reports the legal regime variable (LLSV), the mean, minimum, and maximum of the corporate governance indicators by country. In particular, 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, INDEP2 takes into account the presence of the former CEO on the board, and INDEP3 the separation of the roles between the CEO and the Chairman, too. TRANSP ranks the degree of potential account manipulation within the company, while COMP looks at the presence of specific compensation agreements. The composition of each index is given in Table 1.B

Indicator	LLSV		COMM1		COMM2		BEBCHUK		INDEP1		INDEP2		INDEP3		TRANSP		COMP	
	Min: 0	Max: 5	Min: 0	Max: 4	Min: 0	Max: 3	Min: 0	Max: 4			Min: 0	Max: 2	Min: 0	Max: 3	Min: 0	Max: 3	Min: 0	Max: 4
									Dummy									
	Obs.	Value	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Country																		
AUSTRALIA	205	4	205	2.77	205	0.85	205	1.02	203	0.57	203	1.41	203	2.23	145	1.30	72	2.76
AUSTRIA	47	2.5	47	0.31	47	0.00	47	1.00	5	0.80	5	1.60	5	2.60	7	1.85	17	2.17
BELGIUM	47	2	47	1.25	47	0.25	47	0.74	22	0.27	15	0.80	15	1.66	2	1.50	5	2.60
CANADA	466	4	466	3.82	466	1.97	466	1.99	465	0.86	462	1.59	461	2.20	157	1.89	101	3.42
DENMARK	61	4	61	0.11	61	0.06	58	1.56	18	0.88	18	1.72	18	2.11	29	1.62	5	2.40
FINLAND	81	3.5	81	0.86	81	0.48	77	1.80	44	0.65	44	1.59	44	2.04	12	1.41	10	2.90
FRANCE	215	3	215	2.34	215	0.33	211	0.83	194	0.26	185	1.08	185	1.47	189	1.19	55	2.27
GERMANY	217	2.5	217	0.65	217	0.01	217	1.05	57	0.75	55	1.29	55	1.94	29	1.58	87	2.00
GREECE	112	2	112	0.38	112	0.04	63	2.01	73	0.04	37	0.94	37	1.40	3	2.00	6	2.83
HONG KONG	140	5	140	1.48	140	0.62	110	2.06	136	0.08	135	0.95	135	1.57	47	1.85	NA	NA
IRELAND	33	4	33	3.09	33	0.90	33	1.00	32	0.31	32	1.18	32	1.59	10	1.90	3	4.00
ITALY	122	2.5	122	1.13	122	0.09	121	1.04	84	0.08	50	0.76	50	1.42	59	1.76	24	2.83
JAPAN	1409	3.5	1409	1.04	1409	0.01	1407	1.35	1408	0.00	1407	0.57	3	1.00	932	1.89	1389	1.42
NETHERLANDS	123	3	123	1.25	123	0.72	115	0.74	51	0.92	47	1.76	47	2.59	15	1.46	29	2.58
NEW ZEALAND	38	4	38	2.71	38	0.34	38	1.00	37	0.37	37	0.97	37	1.70	24	1.66	8	2.87
NORWAY	58	3.5	58	0.43	58	0.24	51	1.15	17	0.82	16	1.75	16	2.37	15	1.60	6	2.16
PORTUGAL	33	2.5	33	0.42	33	0.09	27	1.03	19	0.26	4	1.00	3	2.00	10	1.40	5	3.00
SINGAPORE	119	5	119	2.55	119	0.87	55	1.40	107	0.50	98	1.39	94	2.18	27	1.96	NA	NA
SPAIN	120	5	120	1.71	120	0.25	100	1.02	46	0.13	5	0.80	5	1.40	21	1.57	2	3.00
SWEDEN	102	3.5	102	0.89	102	0.16	101	2.01	62	0.53	58	1.39	56	2.32	25	1.48	40	2.80
SWITZRELAND	135	3	135	1.30	135	0.45	135	1.10	60	0.78	59	1.42	59	1.86	21	1.85	8	2.02
UK	787	5	787	2.98	787	1.59	785	1.05	780	0.35	776	1.20	770	1.34	457	1.88	357	3.29
USA	1187	3	1187	3.94	1187	2.66	1160	1.82	1187	0.97	1187	1.73	1179	2.01	792	1.75	1170	1.31
Total obs.	5857		5857		5857		5629		5107		4935		3509		3028		3399	
Average		3.48		2.25		1.04		1.41		0.46		1.19		1.85		1.76		1.75

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.

INDEX	CORPORATE GOVERNANCE PROVISIONS			
COMM1	Nomination committee	Compensation committee	Audit committee	Governance committee
	52%	58%	83%	31%
COMM2	Independent nomination committee	Independent compensation committee	Independent audit committee	
	26%	37%	40%	
BEBCHUK	Annually elected board	No poison pills in place	No supermajority for charters/ bylaws	No supermajority for merger
	30%	80%	10%	20%
INDEP2	Majority of independent board members	No former CEO on the board	Separated CEO/ Chairman	
	46%	73%	48%	
TRANSP	Auditor ratified	No consulting fees to auditors	CEO not having related party transactions	
	58%	38%	91%	
COMP	Option repricing prohibited	Shareholders approve stock plans	Options are expensed	Option Burn rate in line with the peers
	40%	89%	21%	36%

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 378 cases out of 5857 (6.45%), companies have COMM1=0 and LLSV less than 3. Similarly, in 12 cases out of 5639 (0.21%) total non-missing company-year observations for which we have data for both BEBCHUK and LLSV, companies have BEBCHUK=0 and LLSV less than 3, and so forth. The sum of all percentages in each matrix is 100%. Differences in the sum by columns and rows within the same indicator are due to different total company-year observations.

	LLSV					**BEBCHUK**						**INDEP1**		
	< 3	**= 3**	**= 3.5/ 4**	**> 4**	***total***	**= 0**	**= 1**	**= 2**	**= 3**	**= 4**	***total***	**= 1**	**= 0**	***total***
COMM1 = 0	6.45%	2.99%	3.76%	1.31%	*15.51%*	0.87%	8.79%	3.48%	0.14%	0.00%	*13.29%*	0.80%	2.90%	*3.70%*
COMM1 =1	1.28%	0.41%	23.99%	1.71%	*27.39%*	0.21%	18.07%	9.58%	0.16%	0.02%	*28.03%*	0.98%	29.27%	*30.25%*
COMM1 = 2	0.89%	1.23%	1.91%	1.35%	*5.38%*	0.27%	3.39%	1.55%	0.30%	0.09%	*5.60%*	2.35%	3.75%	*6.10%*
COMM1 = 3	1.02%	3.48%	4.22%	14.22%	*22.94%*	0.62%	19.06%	2.58%	0.41%	0.07%	*22.74%*	10.97%	15.09%	*26.06%*
COMM1 = 4	0.22%	20.23%	7.84%	1.31%	*29.60%*	4.12%	9.34%	8.33%	5.99%	2.56%	*30.34%*	31.11%	2.74%	*33.85%*
total	*9.86%*	*28.34%*	*41.72%*	*19.90%*	*100.00%*	*6.09%*	*58.65%*	*25.52%*	*7.00%*	*2.74%*	*100.00%*	*46.21%*	*53.75%*	*100%*

TABLE 1.C: PERCENTAGES OF CO-EXISTENCE OF CORPORATE GOVERNANCE PRACTICES FOR THE MAIN INDICATORS (cont'd)

	LLSV					BEBCHUK						INDEP1		
	< 3	**= 3**	**= 3.5/ 4**	**> 4**	***total***	**= 0**	**= 1**	**= 2**	**= 3**	**= 4**	***total***	**= 1**	**= 0**	***total***
BEBCHUK = 0	0.21%	5.76%	0.07%	0.05%	*6.09%*							4.98%	0.89%	*5.87%*
BEBCHUK = 1	7.67%	10.93%	24.43%	15.63%	*58.66%*							19.88%	36.77%	*56.65%*
BEBCHUK = 2	1.30%	4.96%	16.68%	2.58%	*25.51%*							11.71%	14.83%	*26.54%*
BEBCHUK = 3	0.09%	4.46%	2.06%	0.39%	*7.00%*							6.78%	1.05%	*7.83%*
BEBCHUK = 4	0.00%	2.70%	0.04%	0.00%	*2.74%*							2.99%	0.12%	*3.11%*
total	*9.27%*	*28.80%*	*43.28%*	*18.65%*	*100.00%*							46.34%	53.66%	*100%*
INDEP1 = 1	1.33%	25.51%	12.57%	6.79%	*46.21%*									
INDEP1 = 0	3.76%	3.70%	32.19%	14.14%	*53.79%*									
total	*5.09%*	*29.21%*	*44.76%*	*20.93%*	*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.

Variable	Obs.	Mean	Std. Dev.	Min	Max
Tobin' s Q	5440	1.67	1.09	0.46	14.40
ROA	5778	0.06	0.11	-1.08	1.52
Total Assets ($US) (thousands)	5797	10031.72	28145.73	5.80	750507
Sales ($US) (thousands)	5797	7940.47	19246.61	0	328213
PPE_SALES	5773	0.64	1.24	0	33.56
G_S	5777	0.06	0.16	-0.45	0.92
D_E	5596	1.05	1.41	0	12.97
CAPEX_SALES	5721	0.08	0.18	0	6.19
ADR	5857	0.19	0.39	0	1

TABLE 2: CORPORATE GOVERNANCE AND PERFORMANCE

This tables reports OLS regressions of Tobin's Q on a country level protection of minority shareholders (LLSV), corporate governance indicators (LLSV, COMM1, BEBCHUK, INDEP1), 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	VI
LLSV	0.093	0.120	0.076	0.224*	0.197***	0.197*	0.328**
	(0.077)	(0.087)	(0.048)	(0.119)	(0.061)		(0.144)
COMM1	0.514***			0.484***		0.444***	0.429***
	(0.129)			(0.135)		(0.105)	(0.127)
BEBCHUK		0.615***		0.449*	0.41*		0.416*
		(0.200)		(0.237)	(0.207)		(0.219)
INDEP1			1.937***		1.848***	1.002***	0.973***
			(0.432)		(0.438)	(0.257)	(0.265)
COMM1* LLSV	-0.098***			-0.091**		-0.089***	-0.087**
	(0.032)			(0.035)		(0.030)	(0.037)
BEBCHUK * LLSV		-0.148**		-0.118	-0.107		-0.111
		(0.064)		(0.075)	(0.065)		(0.069)
INDEP1 * LLSV			-0.395***		-0.374***	-0.207***	-0.198***
			(0.096)		(0.097)	(0.066)	(0.067)
LOG_SALES	-0.146***	-0.097**	-0.146***	-0.151***	-0.155***	-0.162***	-0.169***
	(0.020)	(0.038)	(0.019)	(0.021)	(0.020)	(0.162)	(0.019)
PPE_SALES	-0.078***	-0.065***	-0.074***	-0.074***	-0.071***	-0.076***	-0.072***
	(0.014)	(0.012)	(0.013)	(0.014)	(0.012)	(0.014)	(0.013)
ADR	0.159**	0.031	0.133	0.184**	0.159*	0.178**	0.200***
	(0.069)	(0.150)	(0.085)	(0.063)	(0.080)	(0.070)	(0.071)
Year fixed effects	Y	Y	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y	Y	Y	Y
Obs.	5416	5226	4724	5226	4591	4724	4591
Number of countries	23	23	23	23	23	23	23
R-squared	0.20	0.16	0.21	0.21	0.21	0.22	0.22

TABLE 3: CORPORATE GOVERNANCE AND PERFORMANCE
- ROBUSTNESS CHECKS -

This tables reports OLS regressions of Tobin's Q on country level protection of minority shareholders (LLSV or LEGAL), corporate governance indicators (LLSV, COMM1, BEBCHUK, INDEP1), their interaction terms, and various controls (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). The variable LEGAL is the product of the LLSV index and the ex-post private control of self dealing as defined in Djankov et al (2006). All the regressions are run with 2-digit SIC code industry fixed effects and time fixed effects. Regression (I) includes financial companies. Regression (II) excludes high tech companies. Regressions (III) and (IV) are run with continents fixed effects (Asia, Europe, America) in addition to industry and time fixed effects. Regression (V) is run with the ratio capital expenditures to sales (CAPEX_SALES), 1 year growth of sales (GS), and the ratio debt over equity (D_E) as additional control variables. Robust standard errors clustered at country level are in parentheses. Significance levels are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

Dependent variable	Tobin's Q				
	I	II	III	IV	V
LLSV	0.302**	0.304*	0.376***		0.270*
	(0.120)	(0.153)	(0.129)		(0.139)
LEGAL				0.314**	
				(0.131)	
COMM1	0.383***	0.458***	0.429**	0.313***	0.370***
	(0.104)	(0.158)	(0.170)	(0.109)	(0.110)
BEBCHUK	0.434**	0.297	0.426*	0.303	0.392*
	(0.165)	(0.244)	(0.21)	(0.191)	(0.207)
INDEP1	0.850***	0.728***	0.788**	0.414**	0.822***
	(0.223)	(0.224)	(0.31)	(0.191)	(0.268)
COMM1*LLSV	-0.074**	-0.094**	-0.100**	-0.089**	-0.073**
	(0.030)	(0.046)	(0.044)	(0.034)	(0.033)
BEBCHUK*LLSV	-0.118**	-0.081	-0.117	-0.090	-0.105
	(0.052)	(0.076)	(0.068)	(0.063)	(0.065)
INDEP1*LLSV	-0.175***	-0.133**	-0.163**	-0.087*	-0.165**
	(0.053)	(0.055)	(0.078)	(0.51)	(0.068)
LOG_SALES	-0.153***	-0.149***	-0.167***	-0.160***	-0.128***
	(0.014)	(0.027)	(0.018)	(0.019)	(0.017)
PPE_SALES	-0.047***	-0.064***	-0.071***	-0.070***	-0.074***
	(0.005)	(0.013)	(0.013)	(0.013)	(0.021)
ADR	0.164**	0.178**	0.225***	0.206***	0.169**
	(0.061)	(0.072)	(0.058)	(0.063)	(0.060)
CAPEX_SALES					0.193
					(0.173)
G_S					0.987***
					(0.242)
D_E					-0.017
					(0.012)
Year fixed effects	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y	Y
Continents fixed effects	N	N	Y	Y	N
Obs.	5383	3807	4591	4591	4333
Number of countries	23	23	23	23	23
R-squared	0.24	0.24	0.22	0.22	0.24

TABLE 4: CORPORATE GOVERNANCE AND PERFORMANCE
- BOARD INDEPENDENCE, TRANSPARENCY AND COMPENSATION -

This tables reports OLS regressions of Tobin's Q on a country level protection of minority shareholders (LLSV), corporate governance indicators (LLSV, COMM1, BEBCHUK, INDEP1, INDEP2, INDEP3, TRANSP, COMP), 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). INDEP_n*LLSV is the interaction term between INDEP_n and LLSV, where n=1,2,3. 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
LLSV	0.475***	0.454***	0.512**	0.255
	(0.158)	(0.146)	(0.232)	(0.244)
COMM1	0.803	0.680***	0.478**	0.514**
	(0.170)	(0.124)	(0.177)	(0.191)
BEBCHUK	0.399*	0.449**	0.209	0.453**
	(0.210)	(0.185)	(0.154)	(0.209)
INDEP1			1.128***	1.077***
			(0.252)	(0.358)
INDEP2	0.074			
	(0.144)			
INDEP3		0.084		
		(0.164)		
TRANSP			0.446	
			(0.366)	
COMP				-0.153
				(0.122)
COMM1*LLSV	-0.176***	-0.157***	-0.099*	-0.116*
	(0.044)	(0.033)	(0.056)	(0.061)
BEBCHUK*LLSV	-0.106	-0.118	-0.045	-0.128*
	(0.066)	(0.060)	(0.051)	(0.067)
INDEP_n*LLSV	-0.005	-0.023	-0.217***	-0.190**
	(0.036)	(0.039)	(0.060)	(0.082)
TRANSP*LLSV			-0.126	
			(0.101)	
COMP*LLSV				0.048
				(0.027)
LOG_SALES	-0.161***	-0.164***	-0.202***	-0.206***
	(0.017)	(0.017)	(0.033)	(0.037)
PPE_SALES	-0.077***	-0.075***	-0.079***	-0.074***
	(0.015)	(0.014)	(0.013)	(0.023)
ADR	0.182**	0.144	0.235**	0.243***
	(0.072)	(0.107)	(0.084)	(0.072)
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Obs.	4479	3074	2671	3036
Number of countries	23	23	22	21
R-squared	0.22	0.21	0.25	0.26

TABLE 5: CORPORATE GOVERNANCE AND PERFORMANCE
- COMMITTEES -

This tables reports OLS regressions of Tobin's Q on a country level protection of minority shareholders (LLSV), corporate governance indicators (LLSV, COMM1, COMM2, BEBCHUK), 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
LLSV	0.093	0.050	0.224*	0.152**
	(0.077)	(0.044)	(0.119)	(0.064)
COMM1	0.514***		0.484***	
	(0.129)		(0.135)	
COMM2		0.710***		0.677***
		(0.076)		(0.080)
BEBCHUK			0.449*	0.343*
			(0.237)	(0.187)
COMM1*LLSV	-0.098***		-0.091**	
	(0.032)		(0.035)	
COMM2*LLSV		-0.141***		-0.134***
		(0.021)		(0.021)
BEBCHUK*LLSV			-0.118	-0.089
			(0.075)	(0.057)
LOG_SALES	-0.146***	-0.139***	-0.151***	-0.144***
	(0.020)	(0.022)	(0.021)	(0.022)
PPE_SALES	-0.078***	-0.078***	-0.074***	-0.074***
	(0.014)	(0.014)	(0.014)	(0.014)
ADR	0.159**	0.191***	0.184**	0.215***
	(0.069)	(0.060)	(0.063)	(0.059)
Year fixed effects	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y
Obs.	5416	5416	5226	5226
Number of countries	23	23	23	23
R-squared	0.20	0.21	0.21	0.21

TABLE 6: CORPORATE GOVERNANCE, EXTERNAL FINANCING DEPENDENCE AND PERFORMANCE

This tables reports OLS regressions of Tobin's Q on the interaction term between external financing dependence and corporate governance indicators (COMM1, COMM2, BEBCHUK, INDEP1, INDEP2, INDEP3, TRANSP, COMP), and the logarithm of sales (LOG_SALES) as control variable. External dependence is the Rajan and Zingales (1998) measure of financial dependence at industrial level for U.S. companies and updated for the year 2000. Regressions are run with 2-digit SIC code industry fixed effects, time fixed effects, country fixed effects, and robust standard error clustered at industry 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
Interaction (external dependence X COMM1)	0.027***							
	(0.008)							
Interaction (external dependence X COMM2)		0.031**						
		(0.013)						
Interaction (external dependence X BEBCHUK)			0.010					
			(0.023)					
Interaction (external dependence X INDEP1)				0.109***				
				(0.035)				
Interaction (external dependence X INDEP2)					0.050**			
					(0.009)			
Interaction (external dependence X INDEP3)						-0.019		
						(0.026)		
Interaction (external dependence XTRANSP)							-0.028	
							(0.022)	
Interaction (external dependence X COMP)								-0.017
								(0.035)
LOG_SALES	-0.085***	-0.083***	-0.081***	-0.103***	-0.094***	-0.099***	-0.104***	-0.095***
	(0.020)	(0.020)	(0.020)	(0.021)	(0.018)	(0.026)	(0.020)	(0.016)
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Number of countries	22	22	22	22	22	22	22	20
Obs.	4400	4400	4237	3713	3585	2182	2139	2181
R-squared	0.19	0.19	0.19	0.19	0.19	0.18	0.23	0.22

TABLE 7: CORPORATE GOVERNANCE, EXTERNAL FINANCING DEPENDENCE AND PERFORMANCE

This tables reports OLS regressions of Tobin's Q on the interaction term between external financing dependence and corporate governance indicators (COMM1, COMM2, INDEP1, INDEP2), and various control variables (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, and the LLSV index of shareholders protection). External dependence is the Rajan and Zingales (1998) measure of financial dependence at industrial level for U.S. companies and updated for the year 2000. Regressions are run with 2-digit SIC code industry fixed effects, time fixed effects, country fixed effects, and robust standard error clustered at industry 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	X
Interaction (external dependence X COMM1)	0.026***	0.030***							0.0122	0.019***
	(0.008)	(0.006)							(0.009)	(0.006)
Interaction (external dependence X COMM2)			0.029**	0.038***						
			(0.013)	(0.012)						
Interaction (external dependence X INDEP1)					0.104***	0.152***			0.088*	
					(0.038)	(0.043)			(0.046)	
Interaction (external dependence X INDEP2)							0.049***	0.080***		0.036***
							(0.010)	(0.018)		(0.011)
LOG_SALES	-0.116***	-0.125***	-0.115***	-0.123***	-0.135***	-0.139***	-0.125***	-0.131***	-0.136***	-0.126***
	(0.019)	(0.020)	(0.019)	(0.020)	(0.021)	(0.023)	(0.023)	(0.020)	(0.021)	(0.018)
PPE_SALES	-0.064***	-0.064***	-0.063***	-0.063***	-0.065***	-0.062***	-0.067***	-0.063***	-0.065***	-0.067***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)	(0.020)	(0.023)	(0.022)	(0.021)	(0.023)
ADR	0.191***	0.207***	0.193***	0.020***	0.186***	0.220***	0.174***	0.214***	0.185***	0.171***
	(0.049)	(0.049)	(0.050)	(0.050)	(0.052)	(0.046)	(0.055)	(0.049)	(0.051)	(0.054)
LLSV		0.037		0.041		0.043		0.034		
		(0.031)		(0.031)		(0.035)		(0.037)		
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	N	Y	N	Y	N	Y	N	Y	Y
Number of countries	22	22	22	22	22	22	22	22	22	22
Obs.	4399	4399	4399	4399	3712	3712	3584	3584	3712	3584
R-squared	0.20	0.18	0.20	0.18	0.21	0.19	0.20	0.18	0.21	0.20

TABLE 8: CORPORATE GOVERNANCE, EXTERNAL FINANCING DEPENDENCE AND PERFORMANCE - CROSS SECTION REGRESSION 2004-to-2005 -

This tables reports OLS regressions of 2-year average 2004-to-2005 Tobin's Q on the interaction term between external financing dependence and corporate governance indicators (COMM1, COMM2, INDEP1, INDEP2), and the logarithm of sales (LOG_SALES) as the control variable. External dependence is the Rajan and Zingales (1998) measure of financial dependence at industrial level for U.S. companies and updated for the year 2000. Regressions are run with 2-digit SIC code industry fixed effects, country fixed effects, and White heteroscedastic robust standard error (in parentheses). Significance levels are indicated by *, **, and *** for 10%, 5%, and 1% respectively.

Dependent variable	2 years average Tobin's Q (2004-to-2005)			
	I	II	III	IV
Interaction (external dependence X COMM1)	0.030*			
	(0.017)			
Interaction (external dependence X COMM2)		0.054**		
		(0.024)		
Interaction (external dependence X INDEP1)			0.14***	
			(0.047)	
Interaction (external dependence X INDEP2)				0.049*
				(0.030)
LOG_SALES	-0.081***	-0.080***	-0.095***	-0.091***
	(0.022)	(0.022)	(0.023)	(0.024)
Industry fixed effects	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y
Number of countries	22	22	22	22
Obs.	1516	1516	1423	1377
R-squared	0.18	0.19	0.20	0.20

TABLE 9: CORPORATE GOVERNANCE, EXTERNAL FINANCING DEPENDENCE, SIZE AND PERFORMANCE

This tables reports OLS regressions of Tobin's Q on the interaction term between external financing dependence and corporate governance indicators (COMM1, COMM2, INDEP1, INDEP2), and the interaction term between external finance dependence and the average firm size with respect to the industry (large firm share). External dependence is the Rajan and Zingales (1998) measure of financial dependence at industrial level for U.S. companies and updated for the year 2000. Large firm share is the Beck et al. (2005) industry k's share of employment in firms with more than 20 employees in the U.S. 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, country fixed effects, and robust standard error clustered at industry 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
Interaction (external dependence X COMM1)		0.016**						
		(0.006)						
Interaction (large firm share X COMM1)	0.068**	0.054*						
	(0.030)	(0.031)						
Interaction (external dependence X COMM2)				0.019*				
				(0.010)				
Interaction (large firm share X COMM2)			0.056*	0.040				
			(0.032)	(0.033)				
Interaction (external dependence X INDEP1)						0.089***		
						(0.030)		
Interaction (large firm share X INDEP1)					0.14**	0.069		
					(0.064)	(0.058)		
Interaction (external dependence X INDEP2)								0.046***
								(0.012)
Interaction (large firm share X INDEP2)							0.051	0.012
							(0.034)	(0.039)
LOG_SALES	-0.089***	-0.089***	-0.083***	-0.083***	-0.103***	-0.104***	-0.034***	-0.094***
	(0.021)	(0.089)	(0.020)	(0.020)	(0.022)	(0.058)	(0.019)	(0.018)
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Number of countries	22	22	22	22	22	22	22	22
Obs.	4403	4396	4403	4396	3713	3709	3585	3581
R-squared	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19