Does One Size Fit All in Corporate Governance?
Evidence from Brazil (and other BRIK Countries)

Bernard S. Black
University of Texas at Austin, Law School and McCombs Business School

Antonio Gledson de Carvalho
Fundacao Getulio Vargas School of Business at Sao Paulo

Érica Gorga
Fundacao Getulio Vargas Law School at Sao Paulo

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Bernard S. Black[*]
University of Texas at Austin
Law School and McCombs Business School

Antonio Gledson de Carvalho[**]
Fundacao Getulio Vargas
School of Business at Sao Paulo

Érica Gorga[***]
Fundacao Getulio Vargas
Law School at Sao Paulo

Abstract. A central issue in corporate governance research is whether "good" governance practices are often universal (one size mostly fits all) or depend strongly on country and firm characteristics. We report evidence that most supports the second view. We first conduct a case study of Brazil, in which we survey Brazilian firms' governance practices at year-end 2004, construct a corporate governance index, and show that the index, and subindices for ownership, board procedure, and minority shareholder rights predict higher lagged Tobin's q. A disclosure subindex is important by itself, but loses significance with other subindices in the same regression. In contrast to other studies, greater board independence predicts *lower* Tobin's q. Firm characteristics also matter: governance predicts market value for nonmanufacturing (but not manufacturing) firms, small (but not large) firms, and high-growth (but not low-growth) firms. We then extend prior studies on India, Korea, and Russia, and compare those countries to Brazil. Our multi-country results suggest that country characteristics importantly influence which aspects of governance predict firm market value, and at which firms that association is found. They support a flexible approach to governance, with ample room for firm choice, rather than a top-down regulatory approach.

Keywords: Brazil, Korea, India, Russia, corporate governance, boards of directors, minority shareholders

JEL codes: G18, G30, G34, G39, K22, K29

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[*]University of Texas School of Law, 727 E. Dean Keeton Street, Austin, TX 78705.E-mail: bblack@law.texas.edu. Tel: (512) 471-4632, Fax: (512) 232-1767.

[**]FGV-EAESP, Av Nove de Julho, 2029 – Sala 912, São Paulo, SP, Brasil 01313-902. Email: gledson.carvalho@fgv.br. Tel: (5511) 3281-7767.

[***] FGV-EDESP, R. Rocha, 233, São Paulo, SP, Brazil 01330-000, Email: erica.gorga@fgv.br.Tel: (5511) 3281-3628.

1 – Introduction

Capital market development has been linked to improved resource allocation (Wurgler, 2000) and economic growth (e.g., Levine and Zervos, 1998). Other studies provide evidence that capital market development is related to protection of minority investors (e.g., La Porta et al., 1997, 1998a and 1998b; and Gleaser, Johnson and Shleifer, 2001). These studies highlight the importance of understanding how corporate governance might be improved. One approach treats legal rules as central. Good governance is achieved through rules that protect minority investors. An implicit assumption is that one size largely fits all: good corporate governance practices are universal and a common set of rules should be applied to all countries and all firms within a specific country. Examples of this approach include the Sarbanes-Oxley Act in the U.S. and the OECD principles of corporate governance (OECD, 2004).

Under a competing view, optimal firm governance varies between developed and emerging markets (Bebchuk and Hamdani, 2009), and possibly between different emerging markets (Durnev and Fauver, 2007), and between different firms within a country (see, for example, Arcot and Bruno, 2006; Bruno and Claessens, 2007; Demsetz and Lehn, 1985). If so, then an overly strict regulatory scheme, such as the Sarbanes-Oxley Act in the US, or India's Clause 49 listing rules, may be overkill for some firms (e.g., Litvak, 2007; Romano, 2009). This view, if correct, supports a flexible approach to governance, which leaves room for firms to adjust their governance to firm specific needs. Examples include comply or explain rules, such as the UK Combined Code on Corporate Governance (Financial Reporting Council, 2006), and multiple governance tiers for stock exchange listing, exemplified by the Brazilian stock exchange, Bovespa, as discussed below.

To our knowledge, there is only limited evidence on the extent to which a common set of governance practices would be beneficial for most firms in most countries. We seek to address that gap here. We first conduct an in-depth study of the relationship between corporate governance and firm market values in Brazil. We then extend prior in-depth studies of India, Korea, and Russia (conducted by one of us) to make them as comparable as possible to the Brazil study. We use these four country studies to assess which governance practices predict higher firm market values, for which types of firms, in which

countries. These studies, taken together, cover the "BRIK" countries – the four major "BRIC" emerging markets, plus Korea but minus China, which is unique due to government control of most major firms. They provide a reasonable cross-section of practices in major emerging markets, and a reasonable basis for assessing the extent to which one size fits all in corporate governance.[1]

This article also adds to other corporate governance studies in methodology. When assessing the importance of particular aspects of corporate governance, we control for other aspects of governance. Omitting these controls, which is a common practice in studies of particular aspects of governance such as board independence, disclosure, audit committees, etc., may produce omitted variable bias. By examining how adding these controls affects the association between firm market value and aspects of governance, across four countries, we can assess this source of bias; we find that it is often important.

Our results provide evidence that one size is far from fitting all. In all four countries, an overall corporate governance index predicts higher firm market values. But when we examine which aspects of governance drive that result, and for which firms, there are some common themes, but also large differences. A simple cross-country regression, finding that a particular governance aspect predicts firm market value (such as the Dahya, Dimitrov, and McConnell (2008) study of board independence) tells us little about whether that governance aspect predicts firm market value in any particular country, especially after controlling for other aspects of governance. The question of what matters in corporate governance, for which firms, in which countries, remains largely unanswered.

Stepping back from this particular study, there are two broad approaches to evaluating how corporate governance affects firms' market value or performance, each with strengths and limitations. One approach relies on multi-country cross-sectional studies (e.g., Aggarwal, Erel, Stulz and Williamson, 2006; Klapper and Love, 2004; Durnev and Kim, 2005; Doidge, Karolyi and Stulz, 2007). These studies are *broad-but-shallow*. They potentially offer generalizability across countries, but may ignore important variations across countries and firms, and have other limitations. For example, what matters in

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[1] Our discussion below of related literature omits studies of China for the same reason.

governance may differ between developed and emerging markets, yet most cross-country studies either mix the two or examine only developed markets. What matters within each country may depend on local rules and institutions, but cross-country studies cannot address those details. For emerging markets, most studies rely on two dated measures (a 2001 survey by Credit Lyonnais Securities Asia and a 2002 disclosure survey by Standard and Poor's). In each, the governance measures are limited in scope, are purely cross-sectional, and cover only the largest firms in each country. The S&P survey is limited to disclosure, and the CLSA survey relies partly on analyst views, which could be affected by firm performance. Control variables are limited, due to data availability.

The second approach involves *narrow-but-deep* studies of particular, important countries. These studies sacrifice generalizability but let researchers develop governance measures that are tailored to a particular country's legal rules, focus on particular types of countries, cover a deeper cross-section of firms within a country, and permit stronger control variables. In some studies, access to panel data or legal shocks can provide stronger identification than in cross-country studies. The principal published studies cover Hong Kong (Cheung, Connelly, Limpaphayom and Zhou, 2007); Korea (Black, Jang and Kim, 2006a); Russia (Black, 2001; Black, Love and Rachinsky, 2006); and India (Black and Khanna, 2007).[2]

This study falls in the second category, but with an important twist. We study Brazil, thus gaining depth but sacrificing generalizability. We then recapture some generalizability by comparing Brazil to other important emerging markets.

Brazil is an important country to study for several reasons. It is one of the largest emerging market economies. In Brazil, private benefits of control have historically been high and legal rules and firm-level governance have been weak.[3] Weak legal rules are

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[2] Working papers which find an association between an overall governance index and firm market value include Balasubramanian, Black and Khanna (2009, India); Black, Kim, Jang and Park (2009, Korea). See also Dharmapala and Khanna (2009) (effect of enforcement of corporate governance rules in India). But see Connolly Limpaphayom and Nagarajan (2008, Thailand) (finding no association between a governance index and firm market value).

[3] Dyck and Zingales (2004) study the premium paid for control blocks in 39 countries; of these, Brazil has the highest average premium, at 65% of the trading value of the shares. Nenova (2003) estimates that Brazil has a relatively high value of control, at 23% of firm value, and low scores on international measures of investor

important for a study of how firm-level governance affects value, because they leave more room for firm-level governance to vary in economically significant ways (Durnev and Kim, 2005). At the same time, firm-level governance has been rapidly changing. The principal other emerging markets which have been studied to date (Russia, India, and Korea) have one-share-one-vote capital structures.[4] In contrast, most Brazilian public firms issue both voting common shares and preferred shares which are, in effect, nonvoting common shares – preferred shares have limited voting rights but economic rights similar to common shares. Below, we refer to minority common shareholders and preferred shareholders together as *minority shareholders*. Finally, prior research on firm-level governance in Brazil has been limited because even basic information such as the number of independent directors on a firm's board is not publicly available.

In our Brazil study, we focus on publicly traded Brazilian firms which are not controlled by the state or subsidiaries of foreign parent firms – which we call *private* firms. We study whether an overall Brazil Corporate Governance Index (*BCGI*) predicts a lagged measure of firm market value; which aspects of governance contribute to the overall association, and which types of firms show an association between governance and market value. We use hand-collected data on Brazilian firms' governance practices at year-end 2004 (from an early 2005 survey) to construct a broad Brazil Corporate Governance Index (*BCGI*) composed of equally weighted subindices covering six aspects of corporate governance (board structure, ownership structure, board procedure, disclosure, related party transactions, and minority shareholders rights). We find a statistically significant and economically strong association between the overall *BCGI* index and firm market value, proxied by Tobin's *q*. A worst to best change in the index predicts almost a doubling in Tobin's *q*, from 1.16 to 2.13. This contrast with the previous results that used public data

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rights, corporate law enforcement, and disclosure.

[4] We put aside China (and studies of Hong Kong which include mainland Chinese firms) because most Chinese public firms are state-controlled. See, for example, Cheung, Connelly, Limpaphayom, and Zhou (2007, Hong Kong)); Cheung, Jiang, Limpaphayom, and Lu (2010, China). Just as emerging market firms may need different governance than firms in developed markets, so too state-controlled firms may need different governance than privately controlled firms.

(Carvalhal-da-Silva and Leal, 2005; Leal and Carvalhal-da-Silva, 2007) and did not find a robust association between firm-level governance and market value.[5]

Turning to subindices, our results suggest that the overall index results derive mostly from subindices for ownership, board procedure, and minority shareholder rights. Turning to subsamples, there is a significant association between *BCGI* and market value for nonmanufacturing (but not manufacturing) firms, small (but not large) firms, and high-growth (but not low-growth) firms.

Board structure, especially board independence, is a central aspect of corporate governance. In contrast to the principal cross-country study of board independence (Dahya, Dimitrov and McConnell, 2008) and country studies of Korea (Black and Kim, 2009; Choi, Park and Yoo, 2007), we find a significant *negative* association between board independence and firm market value. Thus, our results highlight the dangers in generalizing from a cross-country study, especially one that mixes developed and emerging markets, to a particular market, or from one emerging market to another.

Our findings, for board structure and other aspects of governance, on which subindices and which firms show an association between corporate governance and market value in Brazil differ substantially from other country case studies. There are some common themes across countries, but these need an "out of sample" test in other major emerging markets before one can have much confidence in them. Our study thus provides evidence that the value of corporate governance practices varies based on firm and country characteristics, neither of which is well understood. They support the view that optimal firm governance likely differs between developed and emerging markets, as well as between different emerging markets. These differences support a flexible approach to governance, in which firms can adjust their governance to firm specific needs.

This paper proceeds as follows. Section 2 discusses our survey, data, governance index, and methodology. Section 3 examines the association between governance and firm

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[5]Leal and Carvalhal-da-Silva (2007) find that a governance index based on publicly available data predicts firm market value using cross-sectional data from 2002 (with similar results for 1998 and 2000). However, their index loses significance if they remove two elements associated with cross-listing (use of an international accounting firm and financial reporting using IAS or US GAAP), or if they use panel data and firm fixed or random effects (Carvalhal-da-Silva and Leal, 2005).

market value. Section 4 compares our results to those from other country-level and cross-country governance studies. Section 5 concludes.

2 – Data, Governance Index and Methodology

2.1 – Sample, Governance Survey and Other Data Sources

Our results are based primarily on an extensive survey distributed in January 2005 to all firms listed on Bovespa (2005 Brazil CG Survey). We received 116 replies to the survey, including 88 from privately controlled firms (*Brazilian private firms*), and the rest from firms with majority control by the state or a foreign parent company. Black, De Carvalho and Gorga (2009) provide details on the survey and responses.[6]

We focus here on Brazilian private firms. The response rate for these firms was 28% (88/313 firms). However, many small firms have very limited trading. The response rate was 34% (66/194) for firms with at least somewhat active trading (trading on 26 or more days during 2004; that is, at least once every two weeks), versus 18% for other firms; and was 61% if we weight firms by market capitalization. Thus, measured by market capitalization, our sample is reasonably representative of the Brazilian stock market, with a tilt toward larger firms.

We obtain enough information to construct the index for 84 of the 88 responding private firms. For our regression analysis, we exclude 12 financial firms, 5 firms without sufficient data to construct Tobin's q, and one firm with missing data for control variables. This leaves a usable sample of 66 firms. These firms represent 50% of private and non-financial firms by market capitalization.

In 2000, Bovespa introduced several optional *higher* listing levels, with stricter governance standards than a regular listing: Level 1, Level 2, and Novo Mercado ("new market") (Bovespa, 2006). We summarize these rules in Black, De Carvalho and Gorga (2009). However, most new listings on Novo Mercado and Level 2 post-date the period we study (De Carvalho and Pennacchi, 2007). Of our sample firms, 17 were listed on Bovespa

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[6] Black, De Carvalho and Gledson (2010) provide a more compact overview of Brazilian governance and our survey results, intended for a non-Brazil audience.

Level 1 (which has slightly higher standards than a traditional listing), 2 were listed on Level 2, and 4 on Novo Mercado. A number of Level 2 and Novo Mercado requirements are elements of our governance index.

We use several additional data sources. The list of publicly traded companies, their market capitalization, and listing level comes from Bovespa, at www.bovespa.com.br/principal.asp. We obtain financial data from the Brazilian financial database Economatica, at www.economatica.com, and basic company information from annual reports, available from InfoInvest at www.infoinvest.com.br. Information on cross-listing exchanges, levels, and dates is provided by Kate Litvak (see Litvak, 2007), based on the databases maintained by Bank of New York, at www.adrbny.com, Citibank, at wwss.citissb.com/adr/www/brokers/index.htm, CVM, at www.cvm.gov.br, Deutsche Bank, at www.adr.db.com, and JP Morgan, at www.adr.com.

The Korea, India, and Russia datasets are described in Black, Jang and Kim (2006); Balasubramanian, Black and Khanna (2010); and Black, Love and Rachinsky (2006), respectively.

2.2 – Brazil Corporate Governance Index

We rely on data from the survey and information from annual reports to construct an overall Brazil Corporate Governance Index (*BCGI*). We construct the index as follows. We identify a total of 41 firm attributes that are often believed to correspond to good governance, on which we have reasonably complete data, reasonable variation across firms, and sufficient difference from another index element. We do not examine governance attributes required by Brazilian law, for which there will likely be little variation across firms, as well as limited ability to detect noncompliance through a survey. Most elements are dichotomous (coded as "1" if a firm has the attribute; "0" otherwise). We normalize continuous variables to run from 0 to 1. Table 1 describes the index components and provides summary data on them for the firms used in our regressions. We group these elements into indices as follows.

Board Structure (7 elements). Board independence and existence of an audit committee are often considered to be core parts of corporate governance. In Brazil, the

"fiscal board" plays a role similar to that played by an audit committee in other countries, so our governance index considers this institution as well. We divide board structure subindex into two sub-subindices: *board independence* (4 elements, focusing on director independence and separation of the posts of CEO and board chairman) and *audit committee and fiscal board* (3 elements, focusing on the existence of the audit committee and fiscal board, and whether these organs include a minority shareholder representative).

Ownership Structure (5 elements). Many Brazilian firms use dual-class structures, with insiders retaining voting common shares and outsiders holding primarily preferred shares, thus creating a wedge between the voting and economic rights of the controllers.[7] This wedge between voting and economic ownership provides an incentive for self-dealing, and predict lower firm value (Claessens, Djankov, Fan, and Lang, 2002). Accordingly, measures of this wedge are often included in an overall corporate governance index (see, for example, Black, Jang, and Kim, 2006a). Our ownership structure subindex includes the proportion of nonvoting shares in a firm's overall capital, the fractional ownership of voting shares by the largest shareholder, the wedge between this person's voting and economic rights, whether the control group is small (and hence more likely to be cohesive), and whether there are large outside blockholders who can monitor the controller.

Board Procedure (6 elements). A firm's internal procedures are a third common aspect of corporate governance. Our index assesses whether a board meets at least 4 times per year, whether it regularly evaluates the CEO and other executives, whether board members receive materials in advance of board meetings, and whether the firm has a bylaw governing the board and a code of ethics.

Disclosure (12 elements). We extract from the survey 12 elements of disclosure as to which there is reasonable variation across firms. These include, among other things, whether the firm prepares financial statements that comply with a set of international accounting standards; prepares English language financial statements; provides financial disclosures, such as a statement of cash flows, that are common in other countries but not

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[7] Valadares and Leal (2000) and Leal, Carvalhal-da-Silva and Valadares (2000) find high concentration of voting power in Brazilian firms, largely due to the practice of issuing preferred shares.

required in Brazil; posts financial statements on a company web site; discloses major shareholders; discloses related party transactions; and so on.

Related Party Transactions (4 elements): We extract from the survey 4 elements relating to the existence of related party transactions, and approval procedures for these transactions.

Minority Shareholder Rights (7 elements): There is evidence that takeout rights are an important protection for minority shareholders in Brazil.[8] We extract from the survey 7 elements involving takeout rights on a sale of control and freezeout rights at prices exceeding the legal minimum; shareholder rights for election of directors; a procedure for arbitration of disputes with shareholder; preemptive rights; and minimum free float of 25% of outstanding shares.

Table 1. Corporate Governance Index: Elements and Summary Statistics

Description and summary statistics for elements of Brazil Corporate Governance Index (*BCGI*), for 66 private, nonfinancial Brazilian private firms which responded to the Brazil CG Survey 2005 and have sufficient financial data to compute Tobin's *q* for 2005, 2006 or both. All variables except Ow1-Ow4 are coded as yes=1, no=0.

Label	Variable	Mean
Board Structure Index		
Board independence subindex		
BdIn.1	Board includes one or more independent directors	0.73
BdIn.2	Board has at least 30% independent directors	0.47
BdIn.3	Board has at least 50% independent directors	0.20
BdIn.4	CEO is NOT chairman of the board	0.71
	Audit committee and fiscal board subindex	
BdCm.1	Audit committee exists	0.14
BdCm.2	Permanent or near-permanent fiscal board exists	0.68
BdCm3	Audit committee or permanent fiscal board exists and includes minority shareholder representative	0.47
Ownership Structure Index		
Ow.1	Fraction of common shares held by largest shareholder	0.60
Ow.2	1.5*((common shares/(total shares)-1/3) (under Brazilian law the ratio of common/total shares must be ≥ 1/3; this formula ensures that the attainable values of this element spans(0,1))	0.34
Ow.3	(1 – (% of voting shares held by largest owner)/(% of total shares held by largest owner))	0.14

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[8] Nenova (2005) and Carvalhal-da-Silva and Subramanyam (2007) report conflicting results on how 1997 and 2000changes in Brazilian takeout rights affected the market value of the shares affected by the changes. Bennedsen, Nielsen and Nielsen (2007), report that some Brazilian firms voluntarily provide additional takeout rights to shareholders in connection with equity offerings.

Label	Variable	Mean
Ow.4	(((no. of members of control group, winsorized at 11) -1)/10). Number of members of shareholder agreement, if any; otherwise, number of 5% shareholders who together hold 50% of common shares, or 11 (if all together own < 50%)	0.21
Ow.5	firm has an outside 5% institutional investor	0.08
Board Procedure Index		
Pr.1	firm had > 4 physical board meetings in last year	0.80
Pr.2	firm has system to evaluate CEO performance	0.38
Pr.3	firm has system to evaluate other executives	0.41
Pr.4	board receives materials in advance of meeting	0.95
Pr.5	firm has code of ethics	0.58
Pr.6	specific bylaw to govern board	0.56
Disclosure Index		
Di.1	related party transactions disclosed to shareholders	0.67
Di.2	management has regular meetings with analysts	0.61
Di.3	firm discloses direct and indirect 5% holders	0.41
Di.4	firm discloses annual agenda of corporate events	0.42
Di.5	English language financial statements	0.48
Di.6	financial statements include statement of cash flows	0.64
Di.7	quarterly financial statements are consolidated	0.85
Di.8	Financial statements in IAS or US GAAP	0.30
Di.9	MD&A discussion in financial statements	0.83
Di.10	annual financial statements on firm website	0.70
Di.11	quarterly financial statements on firm website	0.62
Di.12	auditor does not provide non-audit services	0.80
Related Party Index		
Rt.1	Firm does not have loans to insiders, significant sales to or purchases from insiders, or rent real property to or from insiders	0.83
Rt.2	Board must approve conflict of interest transaction with controller	0.70
Rt.3	Non-interested directors must approve conflict of interest transaction with controller	0.12
Rt.4	Shareholders must approve conflict of interest transaction with controller	0.12
Minority Shareholder Rights Index		
Sh.1	annual election of all directors	0.39
Sh.2	minority shareholders elect a director	0.47
Sh.3	freezeout offer to minority shareholders based on shares' economic value	0.15
Sh.4	takeout rights on sale of control exceed legal minimum	0.32
Sh.5	arbitration of disputes with shareholders	0.07
Sh.6	Firm has no authorized capital or provides preemptive rights	0.80
Sh.7	free float ≥ 25% of total shares	0.65

Within each subindex, we give equal weight to each element. Thus, to compute Disclosure Index, we sum all 12 elements, and then divide this sum by the maximum score achieved by any firm. Thus, each subindex takes values between 0 and 1. If a firm has a missing value for a particular element, we use its average score for the nonmissing values to compute each index.[9]

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[9] More specifically, if a firm has a missing value for a particular index, we compute the index value as (Σ(values on nonmissing elements) * (total number of elements)/(number of nonmissing elements)).

We sum the subindex scores and divide by 6 (the number of subindices) to obtain an overall *BCGI* score. Since each subindex runs from 0 to 1, this produces roughly equal weighting of the subindices. Thus, BCGI could in theory run from 0 to 1 if a firm had 0 (or 1) scores on each subindex. In practice, BCGI values range from 0.32 to 0.81. Figure 1 provides a histogram showing the overall variation in governance practices, for the 66 firms in our sample. The distribution of *BCGI* scores is reasonably symmetric and close to normal.

Figure 1. Distribution of *BCGI*

Histogram shows fraction of firms with Brazil Corporate Governance Index (BCGI) scores in indicated ranges. Sample = 66 private, non-financial firms which responded to the Brazil CG Survey 2005. Mean = 0.52, standard deviation =0.12 and median = 0.50.
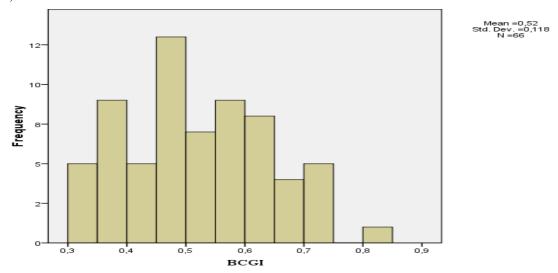

Table 2 provides further data on *BCGI* and its component subindices and sub-subindices. There is substantial spread on each index and subindex, and for *BCGI* as a whole. The mean (median) firm has a raw score of 20.4 (20.0) on the 41 elements.

Table 3 provides Pearson correlation coefficients between BCGI and its components. BCGI correlates positively with each subindex; the correlation coefficients range from 0.14 to 0.77. However, some of this correlation is mechanical, and arises because each subindex forms part of BCGI. To adjust for this, we report in the second row the correlation between each subindex and the complement to that subindex, defined as the average of the other five subindices. The correlation remains fairly high for disclosure at 0.50, but is moderate at 0.28-0.32 for Board Structure, Board Procedure, and Minority

Shareholder Rights subindices, and is small and insignificant for Ownership and Related Party subindices. The inter-subindex correlations are generally positive but moderate. This suggests that, except for Disclosure Subindex, colinearity between subindices should not be a serious concern.

Table 2. Descriptive Statistics for Governance Index

Descriptive statistics for overall Brazil Corporate Governance Index (BCGI), and components of BCGI (before normalizing), for 66 private, nonfinancial firms which responded to the Brazil CG Survey 2005.

	Mean	Std. Dev.	Min.	Max.
Board Structure Index	0.48	0.22	0.00	1.00
Board Independence	0.53	0.29	0.00	1.00
Audit Committee and Fiscal Board	0.48	0.22	0.00	1.00
Ownership Structure Index	0.51	0.16	0.18	1.00
Board Procedure Index	0.61	0.25	0.17	1.00
Disclosure Index	0.61	0.27	0.17	1.00
Related Party Index	0.44	0.17	0.00	1.00
Minority Shareholder Rights Index	0.41	0.21	0.00	1.00
Non-normalized sum of elements	20.41	5.53	11.05	30.88
BCGI (sum of subindices/6)	0.51	0.11	0.33	0.80

Table 3. Correlation Matrix for Corporate Governance Index and Subindices

Correlations among Brazil Corporate Governance Index (*BCGI*) and its components, for 66 private, nonfinancial firms which responded to the Brazil CG Survey 2005. Significant results (at 5% or better) are shown in **boldface**.

	BCGI	BS	OW	PR	DI	RP	SH
BCGI	1	**0.59**	**0.31**	**0.61**	**0.77**	0.14	**0.56**
Subindex complement		**0.32**	0.07	**0.29**	**0.50**	-0.11	**0.28**
Board Structure (BS)		1	-0.09	**0.24**	**0.31**	-0.15	**0.38**
Ownership Structure (OW)			1	0.08	0.01	0.22	0.03
Board Procedure (PR)				1	**0.51**	-0.10	-0.09
Disclosure (DI)					1	-0.16	**0.40**
Related Party (RP)						1	-0.03
Minority Shareholder Rights (SH)							1

2.3 – Brazil Methodology

Our principal dependent variable is the natural logarithm of Tobin's *q* (*ln*(Tobin's *q*)), computed at year-ends 2005 and 2006. Tobin's *q* is a standard dependent variable in governance-to-value studies. Other things equal, if governance affects firm market value, this should be reflected in Tobin's *q*. We take logs to reduce the influence of high-*q* outlier firms, but obtain similar results if we do not take logs. We regress ln(Tobin's *q*) on our

governance indexes and a set of control variables. We use three different econometric models. The first model has the following specification:

$$ln\,Q_{i,t} = \beta_0 + \beta_1 X_i + \beta_2 CGI_i + \varepsilon_{i,t}\,,$$
Model 1

Where:

$ln\,Q_{i,t}$ is the natural logarithm of Tobin's q for firm i at time t (year-ends 2005 or 2006);

X_i is a set of control variables characterizing firm i (we use an extensive set of control variables in order to limit omitted variable bias);

CGI_i is a governance index for firm i, measured at year-end 2004; and

$\varepsilon_{i,t}$ is an error term.

Many studies examine specific aspects of corporate governance, such as board structure (in Dahya, Dimitrov and McConnell, 2008) or disclosure (in cross-country studies that rely on the S&P disclosure index). A concern with this approach is that different aspects of governance are often correlated. Therefore, the coefficient on a particular subindex in Model 1 could reflect the effect of another omitted subindex (omitted variable bias). We therefore also use Model 2 when assessing subindices. It includes both a particular subindex and its complement (the equally weighted average of the other five subindices):

$$\ln Q_{i,t} = \beta_0 + \beta_1 X_i + \beta_2 CGI_i + \beta_3 CGI_i^{comp} + \varepsilon_{i,t}\,,$$
Model 2

where

CGI_i^{comp} is the complement of sub-index CGI_i.

Finally, Model 3 is used to assess for which type of firms there is an association between governance and market value:

$$ln\,Q_{i,t} = \beta_0 + \beta_1 X_i + \beta_2 CGI_i + \beta_2 \left(CGI_i \times DSS_i\right) + \beta_3 DSS_i + \beta_4 CGI_i^{comp} + \varepsilon_{i,t}\,,$$
Model 3

where

DSS_i is a subsample dummy which equals 1 if a firm is included in a given subsample (such as manufacturing firms) and 0 otherwise.[10]

Many firm characteristics are potentially associated with both Tobin's q and governance. We therefore include an extensive set of control variables, within the limits of Brazilian financial reporting, to address the resulting potential for omitted variable bias. All are averaged over 2001-2004, or the available period if shorter. Table 4 defines the principal financial and other non-governance variables used in this paper, and provides summary statistics. Our principal control variables are as follows. All are commonly used in other corporate governance studies. *Firm size:* we use *ln*(assets) to control for the effect of firm size on Tobin's q. *Firm age*: we include years listed as a proxy for firm age, because younger firms are likely to be faster-growing and perhaps more intangible asset-intensive, which can lead to higher Tobin's q. *Leverage*: We include leverage (measured as debt/assets, winsorized at 1.00) because leverage can influence Tobin's q by providing tax benefits and reducing free cash flow problems. Leverage is also mechanically related to Tobin's q, since both variables use the same denominator.

Growth prospects and profitability: Tobin's q is related to a firm's growth prospects and current profitability. We control for growth prospects using sales growth, and for profitability using both net income/assets and *EBIT*/sales. *Capital intensity:* we control for capital intensity using PPE/sales. *Liquidity*: we include share turnover (traded shares/total shares) as a measure of share liquidity, since share prices may be higher for firms with more liquid shares. *Inside ownership*: we include ownership by the largest shareholder as a measure of insider ownership. *Voting parity:* this variable controls for the firm's use of nonvoting preferred shares. It equals 0 if the firm issues the legal minimum of 1/3 common shares, and scales to 1 for a firm which issues only common shares. *Industry:* since both board structure and Tobin's q may reflect industry factors, we include industry dummies. *ADR dummy*: many large Brazilian firms cross-list their shares in the U.S., usually on the New York Stock Exchange or the NASDAQ National Market. This variable can proxy for foreign investor interest, liquidity, and enhanced disclosure.

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[10] When running model 3 for the full BCGI index, we omit the index complement.

Table 4. Nongovernance Variables

Table describes and provides summary statistics for the principal nongovernance variables used in this paper. Sample is 66 Brazilian private firms which responded to the Brazil CG Survey 2005. Data is from Economatica unless otherwise stated. Control variables are averages for 2001-2004, or available period if shorter. Tobin's *q* is measured at year ends 2005 and 2006 (128 total observations). Monetary amounts in millions of Brazilian Reais.

Panel A. Variable definitions

Tobin's *q*	Computed as (book value of debt + market value of common and preferred shares)/(book value of assets). Market value is based on last trade during the year for firms with less than daily trading.
Assets	Total assets
Leverage	Total liabilities/(total assets), winsorized at 1
Years listed	Number of years since original listing (as of 2006)
Sales growth	Arithmetic average growth
PPE/sales	Ratio of property, plant and equipment to sales.
Net income/assets	Ratio of net income to assets, winsorized at 0
EBIT/sales	Ratio of earnings before income and taxes to sales, winsorized at 0.
Share turnover	Common + preferred shares traded/(common + preferred shares)
Ownership	Percentage share ownership by largest shareholder.
Voting parity	1.5*((common shares)/(common shares + preferred shares)-1/3)
ADR dummy	1 if firm has issued ADRs in the US; 0 otherwise.
Industry dummy variables	8 industry groups, plus residual *other* category for total of 9 groups.

Panel B. Summary Statistics

Variable	Mean	Median	Std. Dev.	Minimum	Maximum
Tobin's *q*	1.41	1.25	1.82	0.65	8.86
***Ln*(Tobin's *q*)**	0.34	0.23	0.60	-0.43	2.18
Ln(assets)	13.8	13.7	1.61	9.47	17.36
Leverage	0.31	0.30	0.26	0.00	1.07
Years listed (as of 2004)	23.9	25.0	13.7	2.00	63.0
Sales growth	0.23	0.21	0.11	0.03	0.62
PPE/sales	0.47	0.33	0.42	0.00	1.83
Net income/assets	0.09	0.06	0.13	0.00	0.62
EBIT/sales	0.12	0.09	0.10	0.00	0.59
Share turnover	0.17	0.11	0.22	0.00	1.31
Ownership	0.61	0.62	0.27	0.10	1.00
Voting parity	0.49	0.57	0.24	0.00	1.00
ADR dummy	0.26	–	0.44	0.00	1.00

For robustness purposes, we use three estimation procedures for each model. In the first, we use a quasi-panel data structure, with one time period for independent variables two for the lagged dependent variable, and firm random effects. In the second, we pool observations of Tobin's *q* for both 2005 and 2006. In both approaches, we use year

dummies and firm clusters. In the third approach, we use ordinary least squares, robust standard errors and the mean of Tobin's q for 2005 and 2006 as the dependent variable.[11]

2.4 – Methodology for Other Countries

The methodologies in the India, Korea, and Russia country studies are set forth in the respective papers on each country; In brief, the Korea and India studies use OLS with robust standard errors and Tobin's q measured at the year end following the governance measurement date; the Russia study uses panel data with firm fixed effects after in the a single year .

The Brazil, India and Korea studies were constructed to be as comparable to each other as local laws and data availability permitted. They have similar subindices, except that the Korea index does not have a subindex for related party transactions and the India index does not have a subindex for ownership parity,[12] Control variables also vary slightly across these countries, due to data availability. The Russia study uses a composite index which draws from no less than six indices compiled by others, available for different firms at different times. The underlying indices and subindices do not map well onto the Brazil, India, and Korea subindices, except for disclosure. Below, in tables and regressions that report multicountry results, we normalize all overall indices, and each subindex, to mean zero and variance one, similar to the Brazil index.[13]

In regressions that combine results from several countries, we are able to use Brazil, India and Korea but not Russia. These combined regressions use only control variables available in all three countries. We verify in robustness checks that using only the common control variables has little effect on individual country results.

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[11] In unreported robustness checks, we run regressions using Tobin's q, rather than ln(Tobin's q) as the dependent variable, add board size as an additional control variable (this variable is insignificant), replace firm age with ln(firm age) as a control variable. Results are similar to those we report.

[12] Data on related party transactions is not available in Korea. Data needed to construct an ownership parity index is not readily available in India; it could be hand collected for known business groups, but would likely not be meaningful because India generally lacks the circular holdings that produce a disparity between economic and voting ownership in Korea.

[13] This normalization affects coefficients but not t-statistics. In the original studies, the Russian indices were normalized; the India and Korea indices were not. The *t*-statistics are accordingly quite close to those reported in the individual studies; explanations for the differences are available from the authors on request.

2.5 – Methodological concerns: causality and endogeneity

We have only cross-sectional data for governance and no good instruments, so we can assess correlation, but not causation. However, we can say a little bit about the likelihood that our results provide decent guides to causation. First, looking forward in time from the measurement dates for the governance index and the control variables to dates for Tobin's q should limit the role of reverse causation, in which Tobin's q predicts governance. Moreover, Black and Kim (2010) find only fairly weak evidence of reverse causation in Korea. The optimal differences flavor of endogeneity, with firms optimally choosing their governance to meet firm-specific needs is more likely to be a serious concern if observable firm financial and ownership characteristics are strong predictors of firm-level governance choices. However, Black, Jang and Kim (2006b) report that firm characteristics, other than firm size, only weakly predict Korean firms' governance choices. For India, Balasubramanian, Black and Khanna (2010) report that firm size, sales growth, and profitability all significantly predict higher governance scores. However, when they attempt to use financial and ownership characteristics to predict governance, adjusted R^2 values are consistently negative, as is the change in adjusted R^2 from adding additional controls. These results suggest that the optimal differences flavor of endogeneity may be a limited concern in Brazil as well.

One should note that firm market value is based on trading prices for noncontrolling shares, and does not capture private benefits of control. Governance could affect market value gains either by affecting total firm value or the division of this value between insiders and outsiders. We cannot distinguish between these two broad channels.
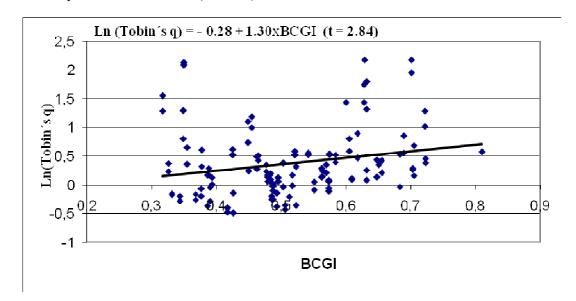
3 – Empirical Results

3.1 – Overall Index

We begin by assessing the univariate association between firm-level corporate governance and firm market value. Figure 2 provides a scatter plot of *BCGI* against pooled values of ln(Tobin's q) for both years, plus a regression line from a simple pooled OLS regression of Tobin's q on *BCGI* plus a constant term. There is a visually apparent correlation between the two. The simple correlation is 0.29 and the regression coefficient is

1.30 (t = 2.84).The correlation is economically significant. A worst (0.32) to best (0.81) change in *BCGI* predicts an increase in Tobin's q from 1.16 to 2.13.

In Table 5, we turn to multivariate analysis, and regress *ln*(Tobin's q) against *BCGI* and control variables, using Model 1. Regression 1 presents results with firm random effects. The coefficient on *BCGI* is 1.28 – essentially the same as the univariate result – and is statistically significant at the 1% level. Regression 2 reports pooled OLS results and Regression 3 reports results with the mean of Tobin's q for 2005 and 2006 as the dependent variable. The results from all three specifications are very similar. For conciseness, in subsequent tables, we present results only for firm random effects regressions, but confirm that all three specifications give similar results.

Figure 2. BCGI (Brazil Corporate Governance Index) and Tobin's q

Scatter plot of *BCGI* versus pooled values of ln(Tobin's q) from year-ends 2005 and 2006. Sample size = 128 year=firm observation (66 firms).

Several control variables are statistically significant. Of particular note: older firms present lower Tobin's q. More profitable and more leveraged firms have higher Tobin's q.

3.2 – Subindex Results

We examine in Table 6 which aspects of governance are associated with firm value. Column 1 in Table 6 represents eight regressions estimated using Model 1 (one regression

for each sub-index or sub-subindex taken separately) in a firm random effects regression. We suppress the coefficients on the control variables. The Ownership, Board Procedure, Disclosure and Shareholder Rights subindices all take positive coefficients that are statistically significant at the 1% or 5%. Board Structure is not statistically significant.

Most subindices are correlated with each other, albeit only moderately (see Table 3). Therefore, when assessing the relevance of each index individually, as in Column 1, one could be capturing the effect of omitted aspects of governance. To control for such a bias, we use two similar procedures reported in columns 2 to 4. Columns 2 and 3 present two regressions based on Model 1, but including all subindices as separate variables in a single regression. Column 4 presents eight regressions based on Model 2, each reporting the coefficient on the subindex (Column 4a) and its complement (Column 4b). Board Structure subindex becomes negative and statistically significant at the 1% (Column 2) and 5% (Column 4a) levels, while Disclosure subindex loses statistical significance. The other subindices which were significant in Column 1 retain statistical significance, although their coefficients bounce around a bit.

Table 5. Governance to Value: Overall Brazil Governance Index

Regressions of *ln*(Tobin's *q*), observed at year-ends 2005 and 2006, on Brazil Corporate Governance Index (*BCGI*) and control variables. Dependent variable in regression (3) is mean of 2005 and 2006 values. Sample = 128 observations (66 firms). *t*-statistics, using firm clusters for regressions (1) and (2), and White's heteroskedasticity-consistent standard errors for regression (3),are in parentheses. R^2 is overall for random effects and adjusted for other regressions. *, **, and *** indicate significance levels at 10%, 5%, and 1% levels. Significant results (at 10% level) in **boldface**.

Dependent variable	*Ln*(Tobin's *q*)		
	Econometric method		
	Firm random effects	Pooled OLS	Mean of 2005 and 2006
	(1)	(2)	(3)
Overall Index (*BCGI*)	**1.28 *****	**1.16 ****	**1.28 ****
	(2.77)	(2.59)	(2.56)
Ln(assets)	-0.03	-0.03	-0.04
	(0.75)	(0.63)	(0.76)
Leverage	**0.54 ****	**0.56 ****	**0.54 ****
	(2.24)	(2.24)	(2.04)
Years listed	**-0.010 ****	**-0.011 ****	**-0.010 ****
	(2.18)	(2.28)	(2.02)
Sales growth	0.16	0.17	0.17
	(0.38)	(0.39)	(0.36)
Net income/assets	**2.53 *****	**2.51 *****	**2.45 *****
	(5.10)	(4.97)	(4.49)
EBIT/sales	**0.96 ****	**0.98 ****	**0.93 ****

Dependent variable	*Ln*(Tobin's *q*)		
	Econometric method		
	Firm random effects	Pooled OLS	Mean of 2005 and 2006
	(1)	(2)	(3)
	(2.30)	(2.37)	(2.05)
PPE/sales	0.14	0.14	0.16
	(0.85)	(0.80)	(0.83)
Share turnover	-0.30	-0.29	-0.28
	(-1.25)	(1.22)	(1.05)
Ownership	0.04	0.05	0.04
	(0.28) *	(0.31)	(0.22)
Voting/common shares	0.44	0.42 *	**0.45** *
	(1.81)	(1.76)	(1.67)
ADR dummy	0.02	0.02	0.03
	(0.14)	(0.10)	(0.14)
Intercept and industry dummies	Yes	Yes	Yes
Firm clusters, year dummies	Yes	yes	n.a.
Overall R^2	0.75	0.75	0.79

Table 6. Governance to Value for Brazil Subindices

Firm random effects regressions of *ln*(Tobin's *q*) on subindices as shown. Control variables and sample are the same as in Table 22, regression (3). Regressions (1)-(2) are similar to Table 5, except that we replace *BCGI* with the indicated subindices, as separate variables. In regression (3) (regression (4)), we replace BCGI with each subindex, separately (the subindex plus a reduced index = BCGI - indicated subindex). *t*-values, based on firm clusters are in parentheses. *, **, and *** respectively indicate significance levels at 10%, 5%, and 1% levels. Significant results (at 10% level) in **boldface**.

Dependent variable	Ln(Tobin's q)				
Specification	Subindices one at a time	All subindices together		Subindex	Index complement
Column	(1)	(2)	(3)	(4a)	(4b)
Board Structure	-0.32	**-0.60** ***		**-0.53** **	**1.68** ***
	(1.11)	(2.62)		(1.99)	(4.58)
Board Independence sub-subindex	-0.18		-0.37 ***	-0.17	**1.15** **
	(1.07)		(2.56)	(1.10)	(2.47)
Audit Committee and Fiscal Board sub-subindex	-0.43		-0.21	-0.04	**1.06** ***
	(0.21)		(1.15)	(0.21)	(2.58)
Ownership	**0.79** ***	**0.53** **	**0.53** **	**0.74** ***	0.72 *
	(2.90)	(2.50)	(2.56)	(2.67)	**(1.73)**
Board Procedure	**0.46** **	**0.62** ***	**0.61** ***	**0.39** **	**0.81** **
	(2.47)	(3.65)	(3.55)	(2.18)	(2.01)
Disclosure	**0.42** **	0.02	0.01	0.25	**0.99** *
	(2.09)	(0.10)	(0.07)	(1.16)	(1.92)
Related Party	-0.19	-0.34	-0.35	-0.15	**1.18** ***
	(0.54)	(1.23)	(1.32)	(0.50)	(2.96)
Minority Shareholder Rights	**0.48** **	**0.58** ***	**0.59** ***	**0.39** **	**0.85** *
	(2.35)	(3.12)	(3.26)	(1.97)	(1.77)
Control variables	yes	yes	yes	yes	yes
Intercept, year and industry dummies	yes	yes	yes	yes	yes
Overall *R*^{2}	–	0.80	0.80	–	–

These results highlight the need to construct an overall index to assess the importance of governance, and to control for the rest of the overall index when assessing a particular aspect of governance. Compare, for example, the cross-country study by Dahya, Dimitrov and McConnell (2008), who find a positive association between board independence and firm market value in a cross-country study, but do not have available an overall index. If board independence is correlated with the rest of such an index, as in Brazil (see Table 3), the rest of the overall index is an omitted variable. Our Brazil results suggest that this omitted variable could explain the positive association that they find between board independence and firm value.

Consider also the S&P transparency and disclosure index, which many studies use as a measure of governance (e.g., Durnev and Kim, 2005; Doidge, Karolyi and Stulz, 2007), and report that this index predicts higher firm market value. In Brazil, we obtain similar results for a disclosure subindex alone, but this subindex loses significance when we control for the rest of an overall index. Thus, failing to control for the rest of an overall index could either suppress significance that would be found with this control (as we find for board structure), or lead to spurious significance (as we find for disclosure).

To further examine what aspects of board structure drive the unexpected negative coefficient on Board Structure Subindex, we break this Subindex into two sub-subindices – Board Independence, and Audit Committee and Fiscal Board -- and report results in Columns 3 and 4. Board Independence takes a significant *negative* coefficient, and largely drives the overall results for board structure. To assess robustness, we examine a continuous measure of board independence, the proportion of independent directors. This variable also takes a negative coefficient, and is significant in some specifications, depending on how we control for the rest of *BCGI*. A dummy variable that equals 1 for the 19 firms with three or more independent directors, and 0 otherwise, is negative and reliably significant, controlling for board size and for the rest of *BCGI*. Thus, the negative coefficient on board independence is not sensitive to the details of how we measure board independence.

22

3.3 – Firm Characteristics

In this section we assess whether the association between governance and firm market value varies with firm characteristics. We focus four characteristics: *industry sector* (manufacturing versus nonmanufacturing firms); *size* (large versus small firms); *growth* (faster versus slower-growing firms); and *profitability* (more- versus less-profitable firms). For industrial sector, our sample includes 45 manufacturing and 21 non-manufacturing firms. For the other characteristics, we split the sample at the median, so that each subsample includes 33 firms. Table 7 reports estimations of Model 3 (firm random effects specification). We report only the coefficient on governance for each subsample and the difference between the two subsamples.

Table 7, column (1) reports the results for the overall index: *BCGI* is a significant predictor of Tobin's *q* for nonmanufacturing firms, but not manufacturing firms, for small firms but not large firms, and for high-growth but not low-growth firms. However, the difference between the two groups is not statistically significant for large versus small firms. There is no appreciable difference between the coefficient on *BCGI* for high versus low-profitability firms.

Table 7: Governance to Value for Brazil Subsamples

Firm random effects regressions of *ln*(Tobin's *q*), observed at year-ends 2005 and 2006. For manufacturing firms, column (1) regression includes *BCGI*, non-manufacturing dummy, interaction between *BCGI* and non-manufacturing dummy, and control variables; column (2) regression includes non-manufacturing dummy, Board Structure Subindex, index complement, and their interactions with non-manufacturing dummy; all regressions include same control variables as Table 5. Regression equations for other subsamples and subindices are similar. First row repeats results from Table 5, regression (1) and Table 6, regression (1). Sample = 128 observations (66 firms); sample splits for size, growth and profitability are at median. *t*-statistics based on firm clusters are in parentheses. *, **, and *** indicate significance levels at 10%, 5%, and 1% levels. Significant results (at 10% level) in **boldface**.

Dependent variable	Ln(Tobin's q)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	BCGI	Board structure	Ownership	Board procedure	Disclosure	Related party	Shareholder rights
Full Sample	**1.22*****	**-0.61*****	**0.50****	**0.64*****	0.07	-0.25	**0.57*****
	(2.75)	(2.69)	(2.42)	(3.65)	(0.34)	(1.03)	(3.10)
Manufacturing firms (n = 45)	0.75	**-0.61***	**0.57****	0.33	-0.01	0.04	0.00
	(0.99)	(1.82)	(1.99)	(1.45)	(0.04)	(0.14)	(0.01)
Nonmanufacturing firms(n = 21)	**2.37*****	0.03	**0.94****	0.42	**0.86*****	-0.80	**1.32*****
	(4.18)	(0.09)	(2.54)	(1.22)	(2.59)	(1.55)	(4.83)
(manufacturing minus nonmanufacturing)	**-1.63***	-0.64	-0.37	-0.09	**-0.87****	0.84	-1.32***
	(1.72)	(1.31)	(-0.84)	(0.20)	(2.06)	(1.33)	(3.49)
Large firms	0.79	-0.59	**0.63****	-0.07	-0.25	-0.05	0.39
	(1.11)	(1.19)	(1.84)	(0.25)	(0.72)	(0.17)	(1.33)
Small firms	**2.06*****	**-0.45***	**0.91****	**0.69*****	0.41	-0.29	0.33
	(2.83)	(1.67)	(2.17)	(3.25)	(1.36)	(0.49)	(1.30)
(large minus small)	-1.26	-0.14	-0.28	**-0.76****	-0.66	0.24	0.06
	(1.17)	(0.23)	(0.52)	(2.10)	(1.58)	(0.35)	(0.13)
High-growth firms	**2.18*****	-0.39	**0.87*****	0.44	**0.72*****	0.13	**0.57****
	(3.02)	(0.85)	(2.58)	(1.48)	(2.78)	(0.29)	(1.94)
Low-growth firms	0.46	-0.54	0.43	0.32	-0.08	-0.25	0.14
	(0.71)	(1.92)	(0.90)	(1.44)	(0.34)	(0.63)	(0.57)
(high-minus low-growth)	**1.72****	0.15	0.44	0.12	**0.80*****	0.38	0.43
	(1.85)	(0.85)	(0.74)	(0.33)	(2.42)	(0.69)	(1.04)
High-profitability firms	**1.19***	**-0.74****	**1.01****	0.40	0.19	-0.50	0.41
	(1.72)	(2.30)	(2.30)	(1.43)	(0.68)	(0.86)	(1.43)
Low-profitability firms	**1.30****	-0.42	**0.59***	**0.38***	0.30	-0.02	0.33
	(2.11)	(1.46)	(1.88)	(1.65)	(1.25)	(0.08)	(1.20)
(high- minus low-profitability)	-0.11	**-0.32****	0.42	0.02	-0.11	-0.48	0.08
	(0.12)	(2.30)	(0.85)	(0.05)	(0.41)	(0.86)	(1.43)

The remaining columns of Table 7 show results for subindices, from a regression similar to Model 3, which includes separately each subindex and an interaction term between that subindex and the subsample dummy. Board structure subindex is significant and negative for the full sample. For subsamples, it is usually negative, but is significant or marginally significant only for manufacturing firms and high-profitability firms. This makes us cautious about placing too much reliance on the full-sample coefficient. Ownership, in contrast, is reliably positive and is significant or marginally significant in most subsamples. Disclosure and Shareholder Rights subindices are important in explaining the stronger association between Tobin's q and *BCGI* for non-manufacturing firms and for high-growth firms. Board Procedure Subindex is associated with Tobin's q for small, but not for large firms.

4 – What Aspects of Corporate Governance Matter in Emerging Markets

In Section 3, we provided evidence that firm-level governance in Brazil is associated with higher lagged Tobin's q; some aspects of an overall governance index predict Tobin's q while others do not; and firm characteristics affect these predictive effects. In this section we verify which aspects of firm-level governance are consistently important across Brazil, India, Korea and in part, Russia; which are not; and how these results vary across different types of firms. We do so by extending our methodology to other emerging markets for which there exist similar data, and also by comparing our findings with those from other "case studies" of emerging markets in other to assess which corporate governance elements are consistently important across countries.

Our conclusions are tentative, for several reasons. First, as discussed above, the studies are subject to endogeneity concerns. Time-series studies with firm fixed or random effects are preferable, but among our comparison studies, only the Russia study has time series data, and it is the least comparable to the others. Second, differences in local legal rules and practices mean that different studies use somewhat different governance indices. For example, the Brazil subindex for Shareholder Rights is not identical to the similarly named subindices in India and Korea, because many Brazilian firms use a dual-class structure and Brazil has unusual takeout rights. Third, different countries have different

regulatory minima, which affect the elements on which there is within-country variation and the range of variation; for example, India requires all firms to have an audit committee and has high minimum requirements for independent directors. Fourth, weak or no results could mean that there is little or no association between governance and firm market value, but could also reflect a poor index, or a small sample size which limits statistical power. Our sample sizes are 66 firms for Brazil, 99 for Russia, 250 for India, and 485 for Korea – larger than would be achievable for each country in a multicountry study, but still limited, especially for Brazil and Russia.

4.1 – Multicountry Results for Indices and Subindices

Table 8 provides estimates for each country separately based on Model 1, using a random effects for Brazil OLS for India and Korea, and firm-index fixed effects for Russia.[14] Coefficients on control variables are omitted from the tables. The left hand columns show results for the overall index and for each subindex, simply substituted for the overall index in the same regression. The right hand columns show results when all subindices are included as separate control variables in the *same regression*; this approach is not feasible for Russia.[15]

Consider first what is common for all countries. An overall governance index significantly and positively predicts Tobin's q in all four countries. There are also strong common patterns for subindices included one at a time. Almost all individual coefficients are positive. A minority shareholder rights subindex is positive and significant in all three countries with this subindex; disclosure subindex is positive and at least marginally significant in all four countries; ownership parity subindex is positive and significant in the two countries with this subindex; board procedure subindex is positive and significant in Brazil and Korea and positive in India.

Board structure is more mixed, with significant positive coefficients in India and Korea, but an insignificant negative coefficient in Brazil. Related party transactions are insignificant, with mixed sign, in the two countries with this subindex, Brazil and India.

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[14] For Brazil, Table 8 replicates Column 1 of Table 5 and Column 2 of Table 6.

[15] In robustness checks, we obtain similar results for subindices if we include the subindex in a regression together with its index complement, similar to the last two columns of Table 6.

Table 8. Governance Indices and Subindices across Countries

Brazil: Firm random effects regressions of *ln*(Tobin's *q*) on normalized corporate governance indices and subindices as shown; *t*-values based on firm clusters. **India and Korea:** OLS regressions. **Russia:** Firm-index fixed effects regressions. **All countries:** Governance index and subindices are normalized to mean = 0, σ = 1, control variables and sample are as in original study; outliers are excluded if a studentized residual from regressing ln(Tobin's q) on governance index (or subindex when included one at a time) > ± 1.96. t-statistics based on White's heteroskedasticity-consistent standard errors (or for Brazil, firm clusters) are in parentheses. *, **, and *** indicate significance levels at 10%, 5%, and 1% levels. Significant results (at 10% level) in **boldface**.

Dependent variable	Ln(Tobin's q						
Country	Russia	Brazil	India	Korea	Brazil	India	Korea
Overall Governance Index	**0.067*****	**0.1408*****	**0.1058*****	**0.0783*****			
	(4.61)	(2.77)	(3.08)	(5.74)			
Subindices		One at a time			Together, as separate variables		
Board Structure		-0.072	**0.0614***	**0.046*****	**-0.133*****	0.0342	**0.039*****
		(1.11)	(1.69)	(3.39)	(2.62)	(0.88)	(2.90)
Ownership Parity		**0.128*****		**0.050*****	**0.085****		**0.046*****
		(2.90)		(4.40)	(2.50)		(3.93)
Board Procedure		**0.1132****	0.035	**0.0327*****	**0.1532*****	-0.001	0.006
		(2.47)	(1.01)	(2.65)	(3.65)	(0.03)	(0.46)
Disclosure	**0.107****	**0.1143****	**0.0684***	**0.0349*****	0.0055	0.0625	**0.0267*****
	(2.44)	(2.09)	(1.70)	(3.85)	(0.10)	(1.49)	(3.06)
Related Party Transactions		-0.0335	0.0356		-0.0573	0.0177	
		(0.54)	(1.04)		(1.23)	(0.51)	
Minority Shareholder Rights		**0.1027****	**0.0980*****	**0.0269*****	**0.1247*****	**0.0846****	0.0144
		(2.35)	(2.99)	(2.65)	(3.12)	(2.46)	(1.40)
Control variables		yes	yes	Yes	Yes	yes	Yes
No of firms		66	250	485	66	250	485

These results weaken if we include subindices together in the same regression, thus addressing the potential for omitted variable bias when subindices are included one at a time. The principal common themes are for ownership parity, which remains strong in Brazil and Korea, and minority shareholder rights, which remain strong in Brazil and India, and remain positive but lose significance in Korea. Other subindex results weaken more substantially. Disclosure remains significant only in Korea; board procedure remains significant only in Brazil, and the coefficient on board structure is entirely mixed -- significant and positive in Korea; significant and negative in Brazil; insignificant in India.

To further explore the commonalities and differences for subindices, we adopt a different approach in Table 9. We combine Brazil, India, and Korea together, ignoring the differences between indices. For Brazil, we use the mean value of Tobin's q for 2005 and 2006 as the dependent variable. The regression specification is otherwise similar to model 1, but adds country dummies and analytic weights so that each country's firms have equal weight in the overall regression. We examine subindices both one at a time, in the first data

column of Table 9, and including each subindex and its index complement in a single regression (in the last two columns). We address missing subindices (related party transactions for Korea; ownership parity for India) by dropping observations for that country when studying these subindices. All regressions use only control variables which are available in all three countries.

Table 9: Brazil, India, and Korea in One Regression

OLS regressions of ln(Tobin's q) on normalized corporate governance index and subindices for Korea, Brazil, and India. Analytic weights give each country's firms equal weight in the regression. Overall index and subindices are normalized to mean 0 and σ = 1. Regressions include control variables common to all three countries, industry dummies, and country dummies. Outliers are excluded if a studentized residual from regressing ln(Tobin's *q*) on governance index (or subindex when included one at a time) >+/- 1.96. t-values based on White's heteroskedasticity-consistent standard errors, are in parentheses. *, **, and *** indicate significance levels at 10%, 5%, and 1% levels. Significant results (at 10% level) in **boldface.**

Overall Governance Index	**0.113***** (5.70)		
Subindices	One at a Time	Subindex	Index Complement
Board Structure	**0.049**** (2.28)	0.009 (0.42)	**0.041***** (5.25)
Ownership Parity	**0.039***** (2.74)	**0.036**** (2.50)	**0.016**** (2.26)
Board Procedure	**0.068***** (3.53)	**0.042**** (2.15)	**0.032***** (4.10)
Disclosure	**0.083***** (4.32)	**0.068***** (3.70)	**0.028***** (3.97)
Related Party Transactions	0.02 (0.67)	-0.017 (0.56)	**0.059***** (4.55)
Shareholder Rights	**0.076***** (4.41)	**0.046***** (2.67)	**0.032***** (3.93)

The overall index is highly significant, as expected. Consistent with the "one at a time" results in Table 8, all subindices are positive and significant, except for related party transactions. When we study each index together with its complement, board structure loses significance, but we retain significance for the other four subindices: ownership parity; board procedure; disclosure; and shareholder rights.

Overall, our results suggest that ownership parity, shareholder rights, and probably disclosure are likely to be important across a number of countries. Board procedure is significant in Table 9, but this result is driven by Brazil; in Table 8, the coefficients for India and Korea are small and of mixed sign. We find no overall predictive value for board structure or for related party transactions.

4.2 – Multicountry results for subsamples

We assess in Tables 10 and 11 whether there is evidence of commonality across countries for similar types of firms. We rely on Model 3. Subsample break points are determined separately for each country; thus a large firm in Brazil might have counted as small if transplanted to Korea, and similarly for other subsamples. We can include Russia in this analysis because we use the overall index rather than subindices, but lack industry data for Russia. Table 10 examines each country separately; Table 11 examines Brazil, India, and Korea in a single regression; we drop Russia because it has much more limited control variables.

The surface message from the multicountry regressions in Table 11, we might conclude that governance matters for all kind of firms; manufacturing and not; large and small; high and low growth; high and low profitability. There are no significant differences between any of the subsamples.

But when we examine the more detailed sample splits in Table 10, the picture becomes murkier. Governance predicts Tobin's q more strongly for non-manufacturing firms in Brazil and Korea, but for manufacturing firms in India. These opposing results wash out in Table 11, leading to similar overall results for both types of firms. Governance predicts market value for small firms in all four countries, but for large firms only in Korea and Russia. For profitability, governance matters more for high-profitability firms in India, but coefficients are similar for both subsamples in the other countries. For growth, governance matters more for high-growth firms in Brazil and perhaps in India, and for low-growth firms in Korea and Russia.

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Table 10: Governance for Subsamples Across Countries

Regressions of *ln*(Tobin's *q*) on normalized governance indices. "Manufacturing firms" regression includes corporate governance index, non-manufacturing dummy, interaction between *BCGI* and non-manufacturing dummy, and control variables; "Non-Manufacturing Firms" regression includes non-manufacturing dummy, corporate governance index, and its interaction with non-manufacturing dummy; regressions for each country otherwise use same specification as in Table 8. Regression equations for other subsamples and subindices are similar. Russia regression includes year dummies. Subsamples for size, growth, and profitability are determined by splitting each country sample at the country splits. First row repeats overall index results from Table 8. *t*-statistics based on White's heteroskedasticity-consistent standard errors, are in parentheses. *, **, and *** indicate significance levels at 10%, 5%, and 1% levels (results in **boldface**).

	Brazil	India	Korea	Russia
Full Sample	**0.1408*****	**0.1058*****	**0.0783*****	**0.067*****
	(2.77)	(3.08)	(5.74)	(4.61)
Manufacturing firms	0.083	**0.145*****	**0.095*****	
	(0.99)	(3.28)	(3.69)	
Non-manufacturing firms	**0.262*****	-0.025	**0.198*****	
	(4.18)	(0.41)	(5.39)	
(manufacturing minus nonmanufacturing)	**-0.180***	**0.170****	**-0.103*****	
	(1.72)	(2.34)	(2.83)	
Large firms	0.088	0.015	**0.115*****	**0.125*****
	(1.11)	(0.28)	(6.19)	(3.69)
Small firms	**0.228*****	**0.132*****	**0.090*****	**0.056***
	(2.83)	(2.62)	(2.89)	(1.91)
(large minus small)	-0.14	-0.117	0.025	**0.069***
	(1.17)	(1.60)	(0.71)	(1.83)
High-growth firms	**0.241*****	**0.099***	**0.077*****	0.041
	(3.02)	(1.79)	(4.42)	(1.48)
Low-growth firms	0.051	0.056	**0.138*****	**0.143*****
	(0.71)	(1.22)	(5.86)	(4.62)
(high- minus low-growth)	**0.190***	0.043	**-0.061*****	**-0.102*****
	(1.85)	(0.63)	(2.60)	(3.19)
High-profitability firms	**0.143*****	**0.127****	**0.089*****	**0.077*****
	(2.64)	(2.51)	(4.63)	(2.89)
Low-profitability firms	0.136	0.00	**0.111*****	**0.114*****
	(1.53)	(0.01)	(5.12)	(3.00)
(high- minus low-profitability)	0.007	**0.127****	-0.022	-0.037
	(0.08)	(1.92)	(0.92)	(0.99)

Table 11: Governance in Subsamples Across Countries, All in One Regression

Pooled OLS regression of ln(Tobin's q) on normalized corporate governance index. Sample from Korea, Brazil, and India. Analytic weights give each country's firms equal weight in the regression. Each country =index is =normalized to mean 0 and σ = 1. Regression specification includes country dummies and year dummies, but is otherwise same as in Table 10. Outliers are excluded if a studentized residual from regressing ln(Tobin's q) on governance index (or subindex when included one at a time) >+/- 1.96. t-values based on White's heteroskedasticity-consistent standard errors, are in parentheses. *, **, and *** indicate significance levels at 10%, 5%, and 1% levels. Significant results (at 10% level) in **boldface.**

Industry	Manufacturing **0.094*** (3.41)	Non-Manufacturing **0.151*** (4.55)	Manuf-Non-Manuf. -0.057 (1.32)
Size	Large **0.099*** (3.69)	Small **0.176*** (4.12)	Large-Small -0.077 (1.49)
Growth	High **0.137*** (4.50)	Low **0.122*** (3.43)	High-Low Growth 0.015 (0.33)
Profitability	High **0.139*** (4.48)	Low **0.099*** (3.50)	High-Low Profitability 0.04 (0.95)

Our assessment is that regressions which combine firms from several countries together can provide unreliable inferences for individual countries. We are still some ways away from understanding how the impact of governance differs for different types of firms.

4.3 – Assessment of Subindices, Including Other Studies

In this section, we combine our Brazil, India, Korea and Russia results, reported above, with those from other studies, to assess what is currently known and unknown about the impact of different aspects of governance on firm market value.

Board structure and outside directors. In Brazil, we find that board independence is significantly and negatively associated with Tobin's *q*. In Turkey, Ararat, Orbay and Yurtoglu (2010) report a negative association between independent directors and Tobin's q, similar to our Brazil results. The Brazil and Turkey findings contrast to several other studies. For Korea, Black and Kim (2010) and Choi, Park and Yoo (2007) report evidence that outside directors can be valuable, at least for larger firms. For India, Black and Khanna (2007) find evidence that India's Clause 49 reforms, which largely involved board structure and audit committees, raised the value of large firms relative to smaller firms, and Dharmapala and Khanna (2009) report that enforcement of these provisions is value

enhancing. However, Balasubramanian, Black and Khanna (2010) find no evidence that board independence, above the Clause 49 floor, is associated with firm market value.

Why might board independence be either not associated or even negatively associated with market value for Brazilian (and Turkish) firms? One possible reason is that some nominally independent directors are not very independent in fact, and firms appoint these directors to provide cover for self-dealing or other problems. However, in Brazil, at about two-thirds of the firms with an independent director, at least one independent director is elected by minority shareholders -- Brazilian rules give minority shareholders this power in many cases. At about half of these firms, minority shareholders elect two or occasionally more independent directors. In unreported regressions, Element Sh2, which asks whether one or more directors are elected by minority shareholders, is positive but insignificant, with or without controlling for the rest of *BCGI*. So the non-independence of some nominally independent directors cannot be the whole story.

Another possibility is that one or two independent directors can't do much. Perhaps there is value to having three such directors, as the Cadbury Committee recommended for the UK, but less value in having only one or two – a pattern that is common in both Brazil and Turkey. Consistent with this, Black and Kim (2010) find in robustness checks that increasing the proportion of outside directors from the legal floor of 25% to 49% is not associated with higher Tobin's q – only getting to 50% has a value effect.[16] Yet this cannot explain the Brazil results – we find a significant negative coefficient on a dummy variable for 3 or more independent directors.

Ownership parity. We find evidence in Brazil that an ownership parity measure, which assesses whether cash flow rights diverge from voting rights, predicts firm market value in Brazil. This is consistent with evidence from Korea, both in cross section (Black, Jang and Kim, 2006) and in time series with firm-fixed effects (Black, Kim, Jang and Park, 2010), and with cross-country evidence (Claessens, Djankov, Fan and Lang, 2002).

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[16] Results available from the authors on request; not presented in the current version of the paper. Choi, Park and Yoo (2007) report that a continuous measure of board independence is associated with firm market value, but also report that significance vanishes if they use a firm fixed effects specification.

Disclosure.   In each of our four countries, a disclosure subindex predicts firm market value if we do not control for the rest of governance, but this result weakens when we control for the rest of governance.   For Brazil, Disclosure Subindex also loses significance if we simply replace firm age with ln(firm age) as a control variable.   Among other studies, Black, Kim, Jang and Park (2010) so find in time series with firm fixed effects for Korea, as do Cheung, Connelly, Limpaphayom and Zhou (2007) in cross-section for Hong Kong.   The Durnev and Kim (2005) multi-country study finds a positive predictive effect of disclosure, as do Black, Love and Rachinsky (2006) for Russia, but these studies lack controls for the rest of governance.   Overall, the most one can currently say is that disclosure predicts higher firm market value by itself, and *probably* still does so, but less strongly, after controlling for the rest of governance.

Shareholder rights.   A shareholder rights subindex predicts higher firm market value, even after controlling for the rest of governance, in Brazil and India, and is positive but insignificant in cross-section in Korea.   Other evidence on similar subindices is mixed. Cheung, Jiang, Limpaphayom and Lu (2010) find a positive effect for mainland China, but Cheung, Connelly, Limpaphayom and Zhou (2007) and Black, Kim, Jang and Park (2009) find an insignificant negative coefficient in Korea with firm fixed effects.

Related party transactions.   In both Brazil and India, a measure of control over related party transactions is insignificant.   But Black, Love and Rachinsky (2006) find evidence of a positive coefficient on a similar measure for Russia.[17]

Board procedure.   In Brazil, we find a significant positive coefficient on Board Procedure Subindex, but a near zero coefficient in India and Korea.   Black, Kim, Jang and Park (2010) also find an insignificant coefficient on board procedure in Korea using panel data with firm fixed effects.   Brazil may be an outlier; evidence that procedure matters is otherwise thin.

This is an important finding, because the available commercial governance indices rely heavily on procedure measures – in part because they are easy to count.   The

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[17] See Black, Love and Rachinsky (2006), Table 1 (Brunswick index). This result is for a subindex of one of the overall Russian indices, there was no good way to present this within Table 8.

insignificance of procedure, and the mixed results for board independence, support the skeptical views about commercial indices expressed by others (e.g., Bhagat, Bolton and Romano, 2008; Daines, Gow and Larcker, 2010)).

5 – Conclusion

We contribute to the literature on corporate governance indices and the connection between governance and firm value. We build a broad Brazil Corporate Governance Index (*BCGI*) and examine the association between *BCGI* and its subindices and firm market value. We find a positive and statistically significant association between *BCGI* (measured at year-end 2004) and firm market value (measured at year-ends 2005 and 2006). This association is consistent with prior research, both cross-country studies and in other country case studies. But when we examine subindices, the apparent consistency with other studies largely vanishes. Where a number of other studies find a positive association between board independence and firm market value, we find a *negative* association, which is robust to how we measure independence. Where a number of other studies find a positive value of disclosure, we find insignificance, once we control for the rest of an overall index. We find a significant association between firm market value and subindices for Board Procedure, Minority Shareholder Rights, and Ownership.

We also find substantial variation in which firms show an association between governance and firm market value. We find an association for non-manufacturing (but not manufacturing) firms, high-growth (but not low-growth) firms, and small (but not large) firms (though the small-minus-large difference is not statistically significant), and similar associations for high- and low-profitability firms.

When we compare Brazil to India, Korea and Russia, we find some common patterns, but rather more differences, both as to which aspects of governance predict firm market value, and for which firms they results are found.

Our results are not inconsistent with some mandatory minimum rules (perhaps differing based on firm size) potentially adding value. For example, our results can support rules that limit the wedge between voting control and economic ownership. But their principal import is to cast doubt on high regulatory minima, and on the extent to which

similar rules are appropriate in different countries. Our evidence, taken as a whole, suggests that "one size" corporate governance rules will misfit many countries and many firms. They suggest that a better approach might be to provide regulatory flexibility, coupled with sufficient disclosure (sometimes absent in Brazil) so that investors can assess a company's governance choices. That flexibility could come through a comply-or-explain regime, such as those in the UK and Continental Europe. It could come in part, as in Brazil, through firms choosing among different governance levels offered by the stock exchange (compare Mahoney, 1997).

Firm-level governance clearly matters for the privately controlled Brazilian firms in our Brazil case study. A worst to best change in governance predicts an 84% increase in Tobin's q, and an even larger increase in share price. At the same time, our results also suggest that we are some ways from a solid understanding of what matters in governance, in which countries, for which firms, and why.

Firm-level governance appears to matter in predicting firm market value, but which aspects of governance matter vary substantially across countries. The principal regularities from cross-country studies are that board independence and disclosure predict firm market value. The board independence result does not stand up to our in-depth examination of particular countries. The disclosure result is suspect, because in country studies, disclosure weakens when one controls for the rest of governance. Thus, the apparent lessons from cross-country studies are less clear when one looks at country studies. The difficulty in finding robust patterns supports the view that optimal firm-level governance likely depends on country-specific factors, including local legal rules and other market-supporting institutions, and also likely varies across firms.

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