

Evolution and Determinants of Firm-Level Corporate Governance Quality in Brazil

Alexandre Di Miceli da Silveira^a

School of Economics, Management and Accounting, University of São Paulo
(FEA/USP)

Ricardo Pereira Câmara Leal^b

Coppead Graduate School of Business, Federal University of Rio de Janeiro
(Coppead/UFRJ)

André Luiz Carvalhal-da-Silva^c

Coppead Graduate School of Business, Federal University of Rio de Janeiro
(Coppead/UFRJ)

Lucas Ayres B. de C. Barros^d

Mackenzie Presbyterian University, Brazil

^a Assistant Professor of Finance and Accounting at the School of Economics, Management and Accounting of the University of São Paulo (FEA/USP). Tel: (+55) 11 5054-1888. e-mail: alexfea@usp.br.

^b Professor of Finance at the Coppead Graduate School of Business, Federal University of Rio de Janeiro (Coppead/UFRJ). Tel: (+55) 21 2598-9800. e-mail: rleal@ufrj.br (contact author).

^c Assistant Professor of Finance at the Coppead Graduate School of Business, Federal University of Rio de Janeiro (Coppead/UFRJ). Tel: (+55) 21 2598-9878 e-mail: andrec@coppead.ufrj.br.

^d Assistant Professor of Finance at the Mackenzie Presbyterian University. Tel: (+55) 11 9645-4435. e-mail: lucasayres@mackenzie.com.br.

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Abstract

This paper analyzes the evolution and the determinants of firm-level corporate governance practices in Brazil from 1998 to 2004 using a broad corporate governance index. A key contribution is to examine the voluntary adoption of corporate governance guidelines under an almost “no listing requirements” environment in Brazil over a reasonable time span while most studies use cross-section samples over one or a few years. This is probably one of the few papers to investigate the impact of ownership structure on the quality of corporate governance practices segregating control and cash flow rights. Also, we perform regression analyses employing a robust panel-data GMM-based procedure that accounts for the main sources of endogeneity associated with our empirical design. Our data shows that overall firm-level corporate governance quality is steadily improving but is still low and that heterogeneity has increased during the sample period. Voluntarily joining stricter listing requirements, either by cross-listing in the US or by joining Bovespa’s New Market, is positively associated with firm-level corporate governance quality. We found no clear evidence of the influence of other potential determinants, such as growth perspectives, firm size, firm value, and ownership structure, and we doubt the methodological reliability of previous findings suggesting that there is a causal relationship from value and ownership to corporate governance practices.

Key-words: Corporate Governance, Governance Mechanisms, Corporate Governance Index, Agency Theory, Ownership Structure.

EFMA classification code: 150.

1. Introduction

For the most part, the recent literature compares corporate governance mechanisms and standards among countries, trying to evaluate whether different levels of investor protection impacts ownership concentration or the adoption of better corporate governance practices. This approach, based on the seminal work of La Porta et al. (1998), builds on the principle that the level of legal protection offered to external investors to prevent the expropriation of their wealth by managers and/or controlling shareholders is the key element to explain different corporate governance patterns across countries. Under this perspective, the firms' ownership structure and, consequently, their corporate governance model, can be seen as an equilibrium response to the legal environment where they operate. Other studies, such as La Porta et al. (2000), Claessens et al. (2002) and Beck et al. (2001) provide additional analysis on the relation between finance and the level of investors' legal protection, suggesting that differences on the legal framework and on the enforcement of the law impact dividend policy, the availability of external finance, and firms' market value as well.

It is possible, however, that firms within the same country could show sharply different corporate governance standards and overall quality. Besides, differences between firms' corporate governance quality could be linked to some of their observable characteristics. This idea is corroborated by Klapper & Love (2004), who have noted a large degree of variation in the quality of corporate governance practices adopted by firms that are submitted to the same contractual environment, finding examples of firms with high corporate governance ratings in countries with weak investor protection and vice-versa. This approach was developed earlier by Himmelberg et al. (1999, 2004), who argue that the level of protection offered to investors has two components: an external one, related to the legal environment where the firm operates, and an internal one, related to the type of activity carried out and to other observable firm characteristics. In this sense, Himmelberg et al. (2004, p. 2) argue that "investor protection refers collectively to those features of the legal, institutional, and regulatory environment — and characteristics of firms or projects — that facilitate financial contracting between inside owners (managers) and outside investors". Under this point of view, therefore, it is possible that firms within a country offer different levels of protection to their investors, due to their operational specificities and to their varied degrees of motivation to voluntarily adopt better corporate

governance practices (since the potential gains from better governance would not be the same for all firms).

In this paper, we try to answer two broad questions: i) Have firms in Brazil voluntarily improved their corporate governance standards over time? ii) What motivates some firms in Brazil to voluntarily adopt better corporate governance, understood as the practices recommended by market agents through codes of best practices? Regarding the methodological approach, the papers of Anand et al. (2006), Blundell et al. (2000), Leal & Carvalhal-da-Silva (2007), and Silveira et al. (2004) are used as main references. Firstly, we examine the evolution of governance practices among Brazilian listed firms from 1998 to 2004, analyzing a broad corporate governance index and its four sub-indices (disclosure; board composition and functioning; ethics and conflicts of interest; and shareholder rights) throughout the period. Then we proceed to investigate the determinants of firm-level corporate governance quality among Brazilian listed companies, aiming to identify the firm characteristics associated with higher corporate governance ratings using a robust GMM-based panel data regression approach. This robust procedure is designed to eliminate or substantially mitigate the most relevant endogeneity problems that can generate spurious correlations between our governance index and many observed firm characteristics.

This line of research is important because the vast majority of academic papers on corporate governance have focused on evaluating the impact of corporate governance mechanisms and practices on firm value. However, analyzing the evolution of firm level corporate governance quality and relating their voluntarily adopted practices to firm characteristics is also important, since it helps to understand what can lead companies to improve their governance practices in places where the level of corporate governance quality reflects decisions voluntarily taken by firms (or to be more specific in the Brazilian case, decisions mainly taken by the firms' controlling shareholders).

Our data shows that recent years have seen an increase in the overall level of corporate governance in Brazil, though at a sluggish pace, and that firm-level corporate governance quality in Brazil can still be considered unsatisfactory. Moreover, we did not observe a convergence towards the voluntary adoption of corporate governance practices. Rather, we observed an increasing divergence, leading to a higher heterogeneity of overall corporate governance quality

among Brazilian firms. Additionally, this divergence is reflected in all governance dimensions (board of directors, disclosure, shareholder rights, and ethics).

The results from our regressions suggest that the issuance of ADRs Levels 2 or 3 and joining one of Bovespa's premium listing segments (Level 2 or New Market) positively influence firm-level corporate governance quality. Also, they confirm statistically the importance of the aggregate movement of Brazilian listed firms towards the improvement of governance practices throughout the sample period. We found no clear evidence, on the other hand, of the importance of other potential determinants of governance quality, such as ownership structure, growth perspectives, firm size, and firm value.

The main contributions of this study are the following: 1) our sample comprises a relatively long time period in which we can examine whether firms changed their governance standards in the absence of major legal requirements to do so (and in an almost "no listing requirements" environment); 2) the enactment of corporate governance landmarks in Brazil and abroad during this period, such as the reform of the Brazilian Corporation Law and the release of Bovespa's three special listing segments in 2000, the approval of the Sarbanes-Oxley Act and the issuance of CVM's¹ Recommendation on Corporate Governance in 2002, provides an opportunity to qualitatively evaluate if these events had a positive overall impact on the level of firms' compliance with better governance practices; 3) to our knowledge, this is the first paper to analyze the determinants of governance quality using a robust statistical procedure that explicitly addresses the main sources of endogeneity we should worry about, in particular the likely two-way causality relationship between governance practices and some firm characteristics; 4) this is one of the few papers to analyze the impact of ownership structure on the quality of voluntarily adopted corporate governance practices, and it is probably the first one to analyze it segregating the impact of control rights from cash flow rights held by controlling shareholders.

The paper is structured as follows: section 2 discusses the evolution of corporate governance regulation and self-regulation in place in Brazil throughout 1998-2004; section 3 presents an overview of the previous literature on this line of research; section 4 discusses the

¹ Comissão de Valores Mobiliários (CVM) is the Brazilian Securities and Exchange Commission.

³ Data were collected using the Brazilian Securities Commission's (CVM) DIVEXT System. Controlling shareholders are considered to be the stockholders identified as such by the company itself in its Annual Information (annual report that companies are obliged to send to CVM).

research method, including the model and variable definitions; section 5 presents and discusses the empirical results; and section 6 concludes.

2. The Brazilian case: voluntary adoption of corporate governance practices

Some countries have adopted a “comply or explain” approach to improve their corporate governance practices (such as the UK and Germany). In such a system, although it is not mandatory that firms implement corporate governance guidelines, they must publicly disclose which practices they have implemented and explain the ones they elected not to adopt. Brazil has taken a different approach by promoting the almost completely voluntary adoption of good corporate governance practices. Firms do not have to adopt any governance practices besides, of course, what is legally required, and legal requirements are mild, concentrating on disclosure, directors duties, and a mandatory bid rule, to be quite general.

Nonetheless, several entities, the Brazilian securities commission (CVM), other regulators, the São Paulo Stock Exchange (Bovespa), firms, associations interested in the promotion of better corporate governance practices, and institutional investors, have issued guidelines, recommendations, and codes of best practices. In fact, there has been a proliferation of such documents. Thus, one cannot say that the subject has not been addressed by salient organizations and that there has not been a structured discussion of the matter since the mid 90’s.

For the sake of brevity, we will mention only some of the most important initiatives that have been introduced or initiated during our sample period. As far as legal requirements go, in 2001 a new Corporation Law was passed with better provisions pertaining to shareholder rights, such as a mandatory bid rule in favor of minority shareholders when controlling shareholders sell the firm. Pension fund, insurance, and mutual fund authorities have introduced regulations raising the asset allocation ceilings in better governed firms, among other rules that favor better governed firms trading at Bovespa’s premium listings. Authorities have also released recommendations about good corporate governance practices, such as CVM in 2002.

One key innovation was the introduction of the Novo Mercado (New Market), an interesting strategy created by Bovespa to compete with US cross listings. In 2001, it launched its Differentiated Corporate Governance Practices Trading Levels, many times called “Novo Mercado” or New Market. These are premium trading lists with specific disclosure and corporate

governance practices requirements beyond what is mandated by corporate law in Brazil. Companies pledge to join the premium listing requirements by privately contracting with Bovespa. What was very clever about this initiative, compared to similar experiences elsewhere, was that existing companies were free to migrate between listings when they wished. Of course, new public firms are free to choose their listing segment at the time of their IPO. To make migration easier for existing traditional listing firms, Bovespa created three premium listings. The traditional listing had no listing requirements and no disclosure and corporate governance practices requirements other than those in the corporate law. The three new premium listing segments are Level 1 (L1), that requires mostly additional disclosure, Level 2 (L2), that requires everything in L1 plus an assortment of corporate governance practices, and, finally, the “Novo Mercado” proper (NM), which is equal to L2 with the additional requirement that the firm does not use non voting shares, which dominated the Brazilian stock market until recently. Details can be found at Bovespa’s website.

By the beginning of 2007, Bovespa’s new market initiative was already a success. There were no IPOs first listing at the traditional segment of the market anymore. Many companies migrated to L1, L2 or NM and these new listings now correspond to most of the trading, largely due to L1. At the beginning of 2007, the three premium listings reached 100 companies, about a fourth of the number of listed firms at Bovespa. At the same time, of its approximate US\$ 2.2 billion daily trading volume, L1 corresponded to about 40%, NM to approximately 20%, and L2 to 5%, leaving the traditional listing and its 300 or so firms with around 35% of total trading volume. On February 28, 2007, Bovespa had 399 listed firms, of which 51 were listed at the NM, 14 at L2, 36 at L1, and 298 in the traditional listing. De Carvalho & Pennacchi (2007) studied migration to Bovespa’s new market and report positive and significant abnormal returns on the new listing segment joining day. They also report greater liquidity and potentially lower control premiums.

In closing, we could also mention the efforts of the Brazilian Corporate Governance Institute (IBGC) to introduce its code of best practices. Although, theirs is not the only one of such codes, it is possibly the most widely known by companies in general because other codes were introduced by interested parties, such as pension funds and firms. IBGC was founded in 1995, introduced a first version of the code in 1998 and its third and current version in 2003.

Firms may decide to implement better corporate governance practices if they view that this is in their best interest, particularly if it leads to a lower cost of capital and better market valuations. Thus, it is very important that companies signal to the market that they are striving to minimize the potential occurrence and the harmful effects of agency conflicts by pledging to certain corporate governance policies and practices. This may be the reason why firms could be interested in incurring in costly signaling about their behavior in this field. The simple declaration of the voluntary adoption of better corporate governance practices may not be enough. Thus, cross-listing in the US and other markets perceived as more protective of investors, as well as adopting costly private contracting in their own home markets, may be partial solutions to this problem. It is quite possible that among the potential incentives for controlling shareholders to embrace better corporate governance practices are, besides the possibility of a higher market value and a lower cost of capital, better market image, more efficient decision processes at the top, better internal controls and operational performance, and better wealth diversification opportunities for the controlling group. Nothing comes without costs though. Controlling shareholders may fear losing complete discretion on important corporate decisions, resisting new external views at the top. There may also be a loss of potential control premiums (see Carvalhal-da-Silva & Subrahmanyam, 2007) accompanied by a likely reduction of private benefits, such as informal operations and arbitrary related-party transactions. There is also the increase of explicit corporate governance costs (maintenance of an investor relations department, preparation of financial statements under international accounting standards, higher compensation for board members, greater transparency before market competitors, etc.). A discussion about the role of private contracting in emerging markets can be found in Klapper & Love (2004) and references therein.

3. Literature review and potential determinants of firm-level corporate governance quality

This paper belongs to a body of literature in corporate governance that investigates why firms within the same contractual environment voluntarily choose different firm-level corporate governance quality (understood as governance practices recommended by market agents). Below, we present results of research that point out to potential determinants of corporate governance quality and describe the ones that are tested in this work.

Klapper & Love (2004) indicate three main potential determinants of firm-level corporate governance quality: the “utility” of corporate governance, the nature of the firm’s operations, and the firm’s size. Firstly, because the main goal of corporate governance is to reduce the firm’s cost of capital by improving investors’ confidence that they will get a proper return on their investment, we should expect that firms with greater need to raise money in the future (firms with better future growth opportunities) would perceive a greater “utility” in the adoption of better corporate governance practices, compared with firms with poor prospects for raising money from external investors. Next, in line with Himmelberg et al. (1999, p. 358), some firms would find it easier to expropriate investors’ wealth due to the nature of their operations. As an example, firms with a large presence of tangible assets would find it harder to divert or steal investors’ resources, given that these assets would be more easily monitored and hard to be channeled to other uses. As a result, firms with a greater presence of intangible assets would have more incentives for the adoption of better corporate governance practices, because they would have to signal investors that they don’t intend to use their resources improperly. The size of the firm is the third potential determinant of firm-level corporate governance. According to Klapper & Love (2004), the firm’s size influences corporate governance quality ambiguously. On the one hand, bigger firms could face greater agency costs due to their larger free cash flow, leading them to voluntarily adopt better corporate governance practices in order to mitigate this problem. On the other hand, smaller firms are expected to grow faster and, therefore, to need more external financing. This could lead them to adopt better governance practices as well. Therefore, both would have different incentives to voluntarily achieve better corporate governance standards.

Durnev & Kim (2005) also analyzed the potential determinants of firm-level corporate governance quality. Specifically, they investigated how certain firm attributes influence the choice of corporate governance practices and interact with the legal environment they are inserted in. The authors developed a theoretical model yielding three predictions: i) growth opportunities, the need for external funding and ownership concentration are the three main attributes that make companies adopt better governance practices; ii) companies with better governance practices are valued higher by markets; and iii) adopting better governance practices is more relevant in countries with weaker legal investor protection. Subsequently, the authors carried out empirical tests and found evidence corroborating the three model predictions.

Anand et al. (2006) empirically examined the extent to which firms adopt recommended but not required corporate governance guidelines in Canada. The authors found evidence that the voluntary behavior towards better corporate governance practices has been increasing over time and that a convergence in the level of adoption of suggested practices is taking place in Canada. Regarding the determinants of the voluntary adoption of recommended corporate governance practices, they found that the presence of a majority shareholder or executive blockholder is negatively associated with better governance standards. On the other hand, they also found that the presence of either significant investment opportunities or a higher level of research and development expenditures encourages the firm to improve the value of their index reflecting board quality. The authors argue that these factors would be indicative of a firm's need or desire to access capital markets in the future and, as a result, a prime determinant for firms implementing governance mechanisms would be to appeal to prospective investors.

In Brazil, Silveira et al. (2004) found a negative relation between voting rights held by controlling shareholders and corporate governance quality and a negative relation between the wedge of voting rights and cash flow rights held by controlling shareholders and corporate governance quality. On the other hand, they found that firms' size and the issuance of ADRs is associated with better corporate governance quality in Brazil. Overall, their results back up the idea that corporate governance is not an exogenous variable, being determined to some extent by observable firm characteristics.

In addition to the variables previously tested in the literature (described in the paragraphs above), we test the following potential determinants of firm-level corporate governance quality: ownership structure including control rights and cash flow rights, issuance of Level 2 or Level 3 ADRs, joining Bovespa's premium listing segments Level 2 or New Market, and type (identity) of controlling shareholders. Table 1 shows a summary of all variables tested in our paper, including the rationale explaining the expected relationship with corporate governance quality. The operational definition of all variables are presented in section 4.1 and summarized in Table 3.

[insert Table 1 here]

4. Research Method

4.1. Theoretical and Operational Definition of Variables

4.1.1. Corporate governance quality

The proxy for corporate governance quality used in this paper was originally built by Leal and Carvalhal-da-Silva (2007). The authors have created an index called “Corporate Governance Practices Index” (CGI). The CGI is computed from the responses to twenty-four binary and objective questions, all of them assessed using publicly available secondary data. Each positive answer adds one point, so that the final score for each firm ranges from 0 to 24 (worst to best corporate governance quality). The index was built taking into account four dimensions deemed important by the literature to assess corporate governance quality: disclosure; board composition and functioning; ethics and conflicts of interest; and shareholder rights. We use an equally weighted version of the index because it is easier to reproduce. Also, although equally weighting all 24 questions entails a subjective evaluation, it has been argued in the literature that this procedure is probably less questionable than imposing more complex weighting schemes. The CGI questions are presented in Table 1. Further information about the index construction (including the evidence supporting the inclusion of each question) can be found in Leal and Carvalhal-da-Silva (2007).

[insert Table 2 here]

4.1.2. Firms’ market value

There are several operational definitions for this concept. We will use two alternative variables in our study:

- Tobin’s Q : estimated as the ratio of market value to book value of assets. Market value of assets is computed as market value of equity plus book value of assets minus book value of equity at year-end. The numerator “market value of equity” was computed directly by the ECONOMATICA database as the price of the most liquid stock (voting or non-voting) times the total number of shares (voting and non-voting).
- Market value of shares divided by their book value.

4.1.3. Other explanatory variables

- Ownership structure variables (six alternative proxies):

- 1VDIR and 3VDIR: defined as the percentage of common stock (voting capital) owned directly by the largest shareholder and the three largest shareholders, respectively³.
- 1TDIR and 3TDIR: defined as the percentage of total shares (voting and non voting capital) owned directly by the largest shareholder and the three largest shareholders, respectively.
- WEDGE1 and WEDGE3: defined as the ratio of voting capital to total capital owned directly by the largest shareholder and the three largest shareholders, respectively.
- Future growth opportunities (GROWTH): proxied by the cumulative percentage variation of net revenues over the previous three years.
- Type of operations (tangibility of assets – TANG): total fixed assets divided by net operational revenues. It is a proxy for the level of tangibility of the firm’s operations.
- Firm size (SIZE): natural logarithm of book value of total assets.
- Profitability (two alternative proxies):
 - ROA (Return on Assets): ratio of operating income to total assets at year-end.
 - ROE (Return on Equity): ratio of net income to equity at year-end.
- Issuance of ADRs (ADR23): binary variable that equals 1 (one) if the company trades ADRs (American Depositary Receipt) levels 2 or 3 in the New York Stock Exchange and equals 0 (zero) otherwise⁴.
- Joining Bovespa’s Corporate Governance premium listing segments (N2NM): binary variable, equal to 1 (one) if the company is listed in Bovespa’s Level 2 or New Market and equal to 0 (zero) otherwise⁵.
- Leverage (LEVER): ratio of total (non-equity) liabilities to total assets at year-end.
- Share liquidity (LIQ): computed by ECONOMATICA based on share trading volumes throughout the previous 12 months.
- Free Float (FLOAT): percentage of outstanding shares available for trading.
- Percentage of voting shares (VOTE): ratio of voting capital to total equity capital.

⁴ ADRs Level 2 and Level 3 require firms to comply with strict corporate governance rules, including the filing of 20-F annual reports and compliance with Sarbanes-Oxley sections – unlike Level 1, which is much less demanding.

⁵ Since Level 2 and New Market require the most important governance practices for listing, we decided to include a dummy variable that segregates these firms from firms listed in Level 1 or the traditional listing segment.

- Payout ratio (PAYOUT): cash and stock dividends divided by net income.
- Dividend Yield (DIVYIELD): annual dividends per share divided by share price at the beginning of the year.
- Firm Age (AGE): number of years since the foundation of the firm.
- Industry: set of seventeen binary variables (IND1,...,IND17) representing different industries. These variables attribute 1 to firms that belong to a specific industry and 0 to firms from other industries. We adopted the classification criterion of the ECONOMATICA database (with twenty categories, three of which are not represented in our sample).
- Identity of controlling shareholders (TYPE1,...,TYPE4): set of four binary variables (FOR, SHB, FAM, SOE) representing different types of controlling stockholders: (i) foreign private ownership (FOR): control in the hands of a multinational or group of foreign investors; (ii) shared control (SHB): control in the hands of a group of national and/or international investors through a shareholder agreement; (iii) family ownership (FAM): control in the hands of one or several families, including control by foundations or holdings representing the company founders or heirs; and (iv) state-owned firms (SOE): control exercised by the Federal or State government.

All variables employed are summarized in Table 3.

[insert Table 3 here]

4.2. Population, Sample and Data Collection

The sample is comprised of financial and non-financial firms listed at the São Paulo Stock Exchange (Bovespa). The sample does not include companies with: i) incomplete or unavailable information; ii) negative book value of assets; iii) negative book value of common equity; and iv) firms that did not trade (firms without a minimal level of liquidity on their shares). The final sample is comprised of about 200 firms each year (823 firm-year observations) representing around 90% of Brazilian stock-market capitalization.

The questionnaire was answered using secondary data collected from the INFOINVEST (www.infoinvest.com.br) and ECONOMATICA (www.economatica.com.br) databases. Data on

firms' annual filings was obtained for 1998, 2000, 2002, and 2004. Public companies are required to file information about the previous calendar year by the end of April of each year.

4.3. Research model and methodological discussion

Based on the hypotheses described in Table 1, we first estimated the model below using the panel data regression procedure developed by Blundell & Bond (1998) and known as the System GMM estimator (GMM-Sys, for short).

$$\begin{aligned} \text{CGI}_{it} = & \alpha + \beta_1 \text{GROWTH}_{it} + \beta_2 \text{TANG}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{ADR23}_{it} + \beta_5 \text{N2NM}_{it} + \beta_6 \text{OWN}_{it} + \\ & + \beta_7 \text{VALUE}_{it} + \beta_8 \text{PROFIT}_{it} + \beta_9 \text{AGE}_{it} + \beta_{10} \text{LEVER}_{it} + \sum_{l=1}^3 \gamma_l \text{TYPE}_{lit} + \sum_{m=1}^3 \varphi_m \text{YEAR}_{mit} + u_i + \varepsilon_{it} \end{aligned}$$

Equation 1

In Equation 1, i represents the firm and t the year (with $t = 1998, 2000, 2002, 2004$). ε_{it} is the random error term from the i -th firm in the t -th year. The term u_i captures unobserved firm characteristics that are time-invariant (or did not vary over the sample period). Based on the hypotheses summarized in Table 1, we expect statistically significant coefficients with the following signs:

- $\beta_1, \beta_4, \beta_5, \beta_7, \beta_8 > 0$;
- $\beta_2 < 0$;
- Since the direction of the relationship between firm size and firm-level corporate governance, and between ownership structure and firm-level corporate governance are ambiguous, we do not have an expected sign for the coefficients β_3 and β_6 ;
- The remaining coefficients relate to control variables and do not have an expected sign.

4.4. Addressing endogeneity

Estimation of Equation 1 by Ordinary Least Squares (OLS) or even by more sophisticated traditional panel data regression methods (such as Random Effects or Fixed Effects) is likely to

be inappropriate because they fail to address very important sources of endogeneity related to this kind of empirical model. By “endogeneity” we mean here any phenomena that creates some degree of correlation between the error term (ε_{it} or $\varepsilon_{it} + u_i$, depending on the method employed) and one or more regressors, thus rendering inconsistent the coefficient estimators commonly employed in previous research. Such correlation can arise from measurement errors or relevant omitted variables that are correlated with the regressors. Of paramount importance for this research, though, is the endogeneity that arises from the simultaneous determination of our governance index (the dependent variable) and (possibly) several firm attributes. Specifically, theoretical arguments and empirical evidence strongly suggest that governance quality can influence some of the variables we use as regressors just as much as they might be influenced by it. For example, it is easy to hypothesize that governance practices may substantially impact capital structure decisions (and thus leverage levels), profitability, market value and ownership structure. Also, it could influence the decision of the firm to issue ADRs or to enlist in Bovespa’s Novo Mercado – because it would be a lot less costly to do so for a firm that already has high governance standards. Indeed, most of the empirical corporate governance literature addresses the impact of governance practices on firm value and performance (see Leal, 2004, for a survey of this literature), which makes particularly compelling the argument that we should expect a two-way causality relationship at least between governance and market value. If this is the case, some of our proxies (for market value, ownership structure, etc.) should be regarded as endogenous, which violates the most important assumption of the standard regression methods. Thus, although we are only interested here in the determinants of governance quality, we must not ignore the potentially severe endogeneity problem caused by this reverse causality issue, which is likely to be the main source of spurious correlations in this work.

The GMM-Sys is one of the most appropriate procedures to deal with endogenous covariates in panel data settings similar to ours, especially when there are no reliably exogenous external instrumental variables, as in most corporate finance studies. The estimator allows the efficient use of appropriate lags of the potentially endogenous regressors as their own instruments. By “appropriate” we mean any lagged value of the endogenous variable that is known (or assumed) to be uncorrelated with the error term of the model. For example, if we suspect that firm performance is contemporaneously correlated with the error due to its simultaneous determination with governance quality, we can still use lagged (past) values of our

performance proxy as instruments, assuming that they are exogenous. This strategy will work depending on the degree of error autocorrelation. Fortunately, we can formally test the statistical plausibility of the assumptions we make in using the GMM-Sys by running tests of error autocorrelation and the well-known Sargan/Hansen test of overidentifying restrictions. In any case, by using this estimator we are able to rely on certainly weaker (often much weaker) assumptions than those necessary for producing correct estimates with most other regression methods, including the better-known Random Effects and Fixed Effects panel estimators⁶. In this sense, the procedure we use here can be regarded as more robust than those applied in related previous research. For a detailed discussion of this method and a comparison among several different regression strategies in an empirical setting similar to ours, see Blundell et al. (2000)⁷.

5. Analysis of Results

5.1. Evolution of corporate governance practices in Brazil

The summary statistics of the corporate governance index (CGI) and its four sub-indices from 1998 to 2004 scaled to a 0-10 range are presented in Table 4.

[insert Table 4 here]

According to Table 4, five main conclusions can be drawn:

1. Overall firm-level corporate governance quality is improving in Brazil, but at a slow pace: The CGI index increases systematically from an average grade of 4.16 in 1998 to an average grade of 5.00 in 2004. Conventional mean comparison tests (not reported) show that these

⁶ By using suitable lags as instruments we can also tackle other sources of endogeneity, especially measurement errors. To the extent that the regressor's measurement errors are not perfectly autocorrelated, these instruments will at least mitigate the bias that often arises from this problem. As for omitted variables, we address the issue mainly through the use of control variables and, perhaps more importantly, by controlling for firms' unobserved time-invariant heterogeneity, similarly to a Fixed Effects regression.

⁷ It can also be argued that dealing with the problem of reverse causality employing single-equation GMM-Sys is generally better than resorting to multiple equation methods because the former does not rely on the correct specification of a potentially very complex system of equations nor on instruments derived from questionable exclusion restrictions.

⁹ We checked the statistical significance of these differences by computing Levine and Brown-Forsythe equality of variance robust tests. In most cases, the change in variance is statistically significant at least at the 5% level. The results of these testing procedures are available from the authors.

differences are statistically significant (specifically, the change from 2000 to 2002 and from 2002 to 2004 are statistically significant at the 5% and 1% levels, respectively);

2. In spite of an overall corporate governance improvement, firm-level corporate governance quality in Brazil could still be considered unsatisfactory. The average CGI of 5.0 out of 10.0 can be considered a low average corporate governance quality because the CGI comprised several questions (such as 2, 3, 9, 13, 14, and 24) checking governance practices of easy adoption;
3. Rather than a convergence due to the voluntary adoption of corporate governance practices, we observed a divergent evolution in Brazil, leading to a greater heterogeneity of corporate governance quality among Brazilian firms throughout the years. The standard deviation of the CGI increases steadily from 2.07 (1998) to 2.88 (2004), suggesting that there is greater variability of firm-level corporate governance quality in 2004 than in 1998. This can also be noticed by the increasing difference between 3rd and 1st quartiles across the years (2.92 in 1998 to 4.58 in 2004);
4. The divergent evolution of the voluntary adoption of corporate governance practices is reflected in each one of the four CGI sub-indices as well, indicating that the variance in firm-level corporate governance practices is increasing in all governance dimensions⁹. The standard deviation of all CGI dimensions grows steadily throughout the years, supporting the argument of complementarities among governance mechanisms as some firms deciding to voluntarily improve their corporate governance quality tend to do so increasing their grade in all CGI dimensions;
5. Brazilian firms appear to fare better in disclosure (average grade of 6.64 in 2004), with poorer scores on shareholder rights (average grade of 4.02 in 2004).

We believe that CGI score improvements in recent years are associated to firms joining Bovespa's premium segments. It is also quite possible that the introduction of stricter listing and legal requirements in the US might have influenced practices in two ways. First, Brazilian firms listed in the US had to adopt better governance practices in recent years. Second, Bovespa's premium listings represented an attractive alternative to listing in the US for Brazilian firms because cross-listing in the US has become more expensive due to more demanding requirements. Hence, stricter requirements in the US may have influenced more demand for domestic listing in premium segments, improving corporate governance practices anyway.

Besides CGI descriptive statistics, summary statistics for the explanatory variables are shown in Table 5 wherefrom we draw some comments on the evolution of relevant corporate attributes among Brazilian listed firms between 1998 and 2004:

- a) Concentration of voting rights among the three largest shareholders is extremely high (average of 79.3% in 2004) and barely changed throughout the years. However, the concentration of voting rights held by the largest shareholder showed a significant decrease from 2002 to 2004 (dropping from 71.2% to 59.1%);
- b) A similar pattern applies to the concentration of cash flow rights. The concentration between the three largest shareholders remains high (59.7%) but decreases significantly for the largest shareholder from 2002 to 2004 (dropping from 50.1% to 42.6%);
- c) The wedge between control rights and cash flow rights is high and slightly decreases among the largest and the three largest shareholders throughout the years (finishing with 16.5% and 19.5% in 2004, respectively);
- d) There is a systematic and significant improvement in all performance variables throughout the sample period (Q, PBV, and ROA);
- e) Regarding the identity of the controlling shareholder, there is a decrease in the proportion of foreign-controlled firms in the sample. This is probably due to the fact that several foreign-owned firms went private in the beginning of this decade (foreign investors bought listed firms and then decided to take them private). As a result, the proportion of family-controlled firms increased;
- f) There was a strong market capitalization growth from 1998 to 2004 (a nearly 600% increase) for the average firm of the sample;
- g) An increasing percentage of firms within the sample decided to issue ADRs Level 2 or Level 3 (from 8.0% in 1998 to about 15% in 2004);
- h) There was a modest increase in the percentage of firms joining Bovespa's premium listing segments Level 2 and New Market (starting from 2% of all firms in 2002 to 6.3% in 2004). Here, two points deserve closer attention: the premium listing segments were created in 2000; and the resurgence of the IPO movement in Brazil took place in 2004 (with 30 IPOs from 2004 to 2006). As a result, at the end of 2006 there was a significant increase in this percentage, with about 15% of all listed firms in Brazil belonging to Level 2 or New Market listing segments;

- i) The percentage of voting stocks among all shares issued (VOTE variable) remains virtually unchanged throughout the period, with 55% of voting stocks for the average firm in 2004;
- j) Regarding the age of the firms, the sample was mostly comprised of mature firms, with an average and median close to 50 years of age. This is probably a result of the scarce IPO activity during the eighties and nineties in Brazil.

[insert Table 5 here]

Finally, a correlation matrix between the CGI, its sub-indices, and selected explanatory variables is shown in Table 6. From the correlation matrix, we can highlight the more interesting and significant associations¹⁰:

1. As hypothesized, CGI is positively correlated with the issuance of Level 2 or 3 ADRs, listing in the premium Bovespa segments, performance variables, and financial leverage. On the other hand, the CGI was negatively correlated with the concentration of voting shares and with the wedge between voting rights and cash flow rights held by controlling shareholders. The reduced version of CGI (CGI21, excluding three ownership structure questions and explained in detail in the next section) shows similar correlation patterns;
2. The issuance of Level 2 or 3 ADRs is positively correlated with Tobin's Q and ROA, suggesting that cross-listings are associated with larger firm value and better operating performance;
3. Joining one of Bovespa's premium listing segments (L2 and NM) is positively correlated with performance variables (Tobin's Q and ROA), suggesting that firms that formally decide to voluntarily join stricter governance listing segments also show superior performance;
4. The ratio of voting shares to total shares is positively correlated with Tobin's Q, suggesting a positive association between the adoption of the one share – one vote rule and firm value;
5. Financial leverage is positively correlated with market value variables (Tobin's Q and PBV), and negatively correlated with operational performance (ROA);
6. Family controlled firms showed lower average scores in both the CGI and the CGI21, and in all four CGI dimensions;

¹⁰ All the correlations highlighted in this section are above 0.10 in absolute value and statistically significant at the 1% level.

7. Firms controlled by large blockholders associated through contractual arrangements exhibited greater CGI, CGI21, and CGI sub-indices scores;
8. The quality of the Board of Directors is positively correlated with all other three governance dimensions, suggesting a complementarity effect among corporate governance mechanisms.

[insert Table 6 here]

5.2. Determinants of firm-level corporate governance quality

The results from the GMM-Sys regressions of the CGI on its main potential determinants are shown in Table 7. Each column corresponds to a distinct regression using alternative variables for ownership structure and firm value. For instance, column (1) represents a GMM-Sys regression using 1VDIR as an ownership proxy and Tobin's Q as a performance proxy¹¹.

[insert Table 7 here]

The diagnostic tests we performed after running these regressions cast some doubt on the validity of the assumptions we made, in spite of the acceptable results of the Sargan/Hansen tests (not rejecting, at the 5% level, the null of validity of the set of instruments used). The reason is the pronounced error autocorrelation, which suggests that Equation 1 fails to capture all relevant systematic information about the behavior of CGI. Clearly, these diagnostics indicate that a dynamic version of Equation 1 might be more appropriate. We then proceeded to estimate the very same specifications reported in Table 7 with one difference: the inclusion in the set of regressors of the first lag of CGI (CGI_{it-1}). This dynamic term proved to be highly significant across specifications and it did completely capture the observed autocorrelation pattern. Also, as expected, the results of the diagnostic tests considerably improved. The estimates from these dynamic models are shown in Table 8.

¹¹ Because we explicitly model unobserved heterogeneity (the u_i term), we do not include in the reported regressions industry dummy variables, which showed no time variation in our sample and whose effects are mostly

[insert Table 8 here]

The first notable result of our regressions is the magnitude and significance of the variable ADR23. As hypothesized, firms that choose to issue ADRs levels 2 or 3 tend to adopt better governance practices and rate substantially higher in our corporate governance index. This result is quite robust across specifications and shows strongly both in tables 7 and 8. Similar results, though less strong, are observed for N2NM, our dummy for the inclusion of the firm in Bovespa's Level 2 or New Market. The estimates for this variable are actually bigger than the estimates for ADR23, but less significant in the dynamic versions of Equation 1 (however, when we estimate the models excluding ADR23, the estimated coefficients for N2NM grow considerably and become more significant). At first glance, these results may look trivial, since issuing ADRs or entering Bovespa's Level 2/New Market require a commitment to better governance practices. More interestingly, though, noticing that we explicitly accounted for a possible reverse causality between these variables and CGI, we can interpret our results as meaning that the adhesion of the firm to these more stringent governance rules does contribute to the improvement of its governance quality. This is not obvious, since it could be the case that higher CGI firms might choose to issue ADRs or enlist in Bovespa's governance segments only to signal to the market that they have good governance (or for any other reason that does not involve further governance improvements).

The second strong result relates to the year (actually biennial) dummies, whose estimates are, in all cases, highly significant, both statistically and economically. The interpretation of these coefficients is straightforward. They clearly reflect the steady improvement of overall governance quality throughout the sample period for the firms we observe. In other words, they show that, all else equal, there was a clear movement towards better practices (higher CGI rates) between 1998 and 2004 and that this "governance wave" is actually more important for explaining the variance in our data than most potential corporate governance determinants.

In Table 7, several ownership structure proxies had significant estimates. Both measures of voting and cash flow rights showed a negative relationship with CGI. This result is in line with the hypothesis of Anand et al. (2006) that large shareholders, not needing to secure the votes of

captured by u_i . The inclusion of those variables does not change the results qualitatively, but reduces the statistical quality of the models.

minority shareholders in order to control the direction of the firm, are less likely to voluntarily implement recommended governance guidelines. Similarly, the wedge between control and cash flow rights presented a negative relationship with CGI. Nonetheless, these results may be sensitive to the specification of the corporate governance index, since there are three questions in the construction of the CGI related to ownership structure (questions 16, 17, and 18). To address this issue, we built a reduced index (CGI21) with 21 questions (deleting questions 16, 17, and 18) and conducted new tests as a robustness check. The new estimates (not reported) are qualitatively similar (yielding the same conclusions) for all variables, except for the ownership structure proxies, which, in general, lose their statistical significance (and sometimes switch sign). These alternative results are compatible to those reported in Table 8 and lead to the conclusion that there is no clear evidence in the data concerning the impact of ownership structure on overall governance quality.

The other potential determinants were not consistently relevant in our regressions. It is interesting to note that these inferences are somewhat different than the ones obtained using more traditional estimators that do not account for endogeneity. For instance, OLS estimates (not reported) suggest that firm size and Tobin's Q are quite important explanatory variables (net of the effects of all other regressors). In light of our discussion, however, it is likely that these results reflect spurious correlations, which casts some doubt on the reliability of the conclusions offered by previous empirical research in this field. Finally, usual robustness checks, including plausible variations in the model assumptions and the omission of outliers, did not materially affect the results.

6. Concluding Remarks

This paper had two major goals: (1) to provide an in depth analysis of the voluntary adoption of better governance practices among Brazilian listed firms between 1998 and 2004; and (2) to investigate the potential determinants of firm-level corporate governance quality in Brazil considering that firms under the same contractual environment could still present sharply different levels of corporate governance quality. A corporate governance index (CGI) was built for approximately 200 listed firms throughout the period. A key contribution is to examine the voluntary adoption of corporate governance guidelines under an almost "no listing requirements"

environment in Brazil over a reasonable time span, while most studies use cross-section samples over one or a few years. This was also one of the few papers to analyze the impact of ownership structure on the quality of corporate governance practices by segregating control and cash flow rights.

Regarding the first goal, we were able to draw five main conclusions: (1) overall firm-level corporate governance quality is improving, though at a slow pace; (2) despite the overall corporate governance improvement, overall firm-level corporate governance quality can still be considered unsatisfactory; (3) the voluntary adoption of corporate governance practices, rather than inciting convergence, seems to increase divergence, leading to greater corporate governance quality heterogeneity among firms throughout the period; (4) divergence about the voluntary adoption of corporate governance practices shows in each one of the four CGI sub-indices as well (board of directors, disclosure, shareholders rights, and ethics); (5) firms appear to fare better in disclosure and worse in shareholders rights.

For analyzing the determinants of firm-level corporate governance, we ran regressions using the panel data procedure developed by Blundell & Bond (1998) and known as GMM-Sys. This method can be regarded as more appropriate for our empirical design than more traditional alternatives since it allows the researcher to explicitly address different endogeneity issues. In our case, the most relevant difficulty seems to be the likely simultaneous determination of governance quality and (possibly) several explanatory variables (in particular, as suggested by an extensive literature, firm value and performance). Ignoring such problems is likely to lead to incorrect coefficient estimates, as our results suggest.

From our regression estimates we can draw three main findings. (1) Issuance of ADRs Level 2 or 3, and joining Bovespa's Level 2 or Novo Mercado premium listing segments are positively related to firm-level corporate governance quality (results are stronger for the first variable) and it appears that firms which issue ADRs and/or join Bovespa's premium segments subsequently improve their governance quality¹². (2) Our sample period has witnessed a steady improvement of Brazilian firms' governance quality and this trend seems to account for a significant portion of the variability in our data. (3) There is no clear evidence that ownership structure influences governance quality (except for the trivial fact that ownership structure itself

¹² As a cautionary note, however, we must say that the time series variation in our data is not sufficient for testing this assertion more directly.

can be regarded as a governance mechanism). This same conclusion applies to other potential governance determinants, such as growth perspectives, firm size, and firm value.

In spite of our efforts, the results from our regressions should be interpreted with caution because our proxies (CGI included) are far from perfect. Moreover, not even the most sophisticated econometric method can completely assure that all sources of spurious correlation were adequately controlled for.

Broadly speaking, the sluggish improvement of the overall corporate governance quality in Brazil suggests that the several national and international landmark corporate governance initiatives adopted during the period (such as the reform of the Brazilian Corporation Law, the introduction of Bovespa's premium listings, the passing of the Sarbanes-Oxley Act, and the release of CVM's Recommendation on Corporate Governance) did not create a positive structural break in firm-level corporate governance quality evolution. Nonetheless, the trend is clearly positive and there is a reasonable chance that future studies including firms from the 2005 and 2006 IPO wave provide a more favorable picture for the overall quality of firm-level corporate governance practices.

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Table 1 – Potential determinants of firm-level corporate governance

Potential determinant of firm-level corporate governance	Rationale	Variable code
Future growth opportunities	Firms with a large number of future growth opportunities should need to raise more external financing. Therefore, these firms would tend to voluntarily adopt better corporate governance (CG) practices in order to facilitate fund raising (KLAPPER & LOVE, 2004).	GROWTH
Nature of operations (tangibility of assets)	Firms with more intangible assets should have, ceteris paribus, a higher risk of resources diversion (intangible assets are more difficult to observe and monitor). Therefore, firms with a greater proportion of intangible assets should voluntarily adopt better CG practices in compensation (HIMMELBERG et al., 1999).	TANG
Firm size	The relation between firm-level corporate governance and firm size is not clear ex-ante. On the one hand, larger firms could face greater agency costs as a consequence of their free cash flow, requiring better CG practices to mitigate this problem. Besides, larger firms have more financial resources available to implement costly corporate governance practices. On the other hand, smaller firms tend to grow faster and, thus, require more external capital. Therefore, both have incentives to voluntarily adopt better CC practices. (KLAPPER & LOVE, 2004).	SIZE
Issuance of ADRs	Firms that issue ADRs (American Depositary Receipts), especially ADRs levels 2 and 3, have to commit themselves to higher CG standards. Therefore, these firms should present better CG than their home country peers.	ADR23
Adhesion to Bovespa's special listing segments	Firms that voluntarily adhere to Bovespa's corporate governance special listing segments, especially Level 2 and New Market (Novo Mercado), must commit themselves to higher transparency and CG standards. Therefore, these firms should present higher firm-level CG than firms listed in the traditional listing segments.	N2NM
Ownership structure (OWN)	The relation between firm-level corporate governance and ownership structure is not clear ex-ante. Higher concentration of control rights (1VDIR or 3VDIR, percentage of voting shares) held by controlling shareholders/managers could lead them to have little need to secure the votes of minority shareholders in order to control the direction of the firm. Therefore, Anand et al. (2006, p. 13) hypothesize that large shareholders (controlling more than 50% of voting shares) would be less likely to voluntarily implement recommended governance guidelines, leading to a prediction of a worst firm-level CG. On the other hand, however, higher	1VDIR or 3VDIR
		1VDIR or 3VDIR

Potential determinant of firm-level corporate governance	Rationale	Variable code
	<p>concentration of control rights could lead firms to voluntarily adopt better CG practices in order to compensate for the greater probability of expropriation of minority shareholders' wealth.</p> <p>Regarding the cash flow rights held by controlling shareholders/managers (1TDIR or 3TDIR, percentage of total shares), there should be a negative relation between cash flow rights and the probability of expropriation of external shareholders and investors. This could lead to a higher firm-level CG as a consequence of a better alignment of interests. However, it also could lead to a lower firm-level CG, since the high percentage of total shares held by controlling shareholders could be seen as a governance mechanism that would reduce the need for the voluntary adoption of better corporate governance practices (improving other CG mechanisms).</p> <p>Regarding the wedge between control rights and cash flow rights (WEDGE1 or WEDGE3), there should be a positive relation between the wedge of rights and the probability of external investors' expropriation. Therefore, the same rationale for the concentration of voting rights applies (1VDIR or 3VDIR).</p>	<p>1TDIR or 3TDIR</p> <p>WEDGE1 or WEDGE3</p>
Performance – Market Value (VALUE) and Profitability (PROFIT)	<p>There should be a positive relation between firm performance and firm-level CG as a consequence of lower expropriation of minority shareholders and other external investors. Besides, firms with better operational performance could be more willing to be more transparent, resulting in a higher corporate governance rating. Additionally, it is possible that firms with poor performance could voluntarily improve their CG level in order to compensate their weak performance. However, this would be captured by a lagged performance variable (not a contemporary one).</p>	<p>Q</p> <p>PBV</p> <p>ROA</p> <p>ROE</p>
Industry	<p>Industry can influence firm-level corporate governance. For instance, in more regulated sectors, such as telecommunications, firms could be forced to adopt stricter levels of disclosure.</p>	IND
Type of controlling shareholder(s)	<p>The type of controlling shareholder (state-owned, family-owned, foreign, shared control, etc.) could influence the voluntary adoption of corporate governance practices.</p>	TYPE

Table 2 – Questions for the construction of the Corporate Governance Index (CGI)
(original source: Leal and Carvalho-da-Silva, 2007)

Governance Dimension	#	Corporate Governance Index (CGI) questions	Criteria for evaluation
Disclosure	1	Does the company's annual report, website or public disclosure include information about potential conflicts of interest such as related party transactions?	Verification if the annual report contains a section on related party transactions.
	2	Does the company specify in its charter, annual reports or other means sanctions against management in the case of violations of its desired corporate governance practices?	Verification if the corporate charter includes any sanctions.
	3	Does the company produce its legally required financial reports by the required date?	Verification if the company published its legally required reports up to April 30th of each year, which is the legal limit date.
	4	Does the company use an international accounting standard?	Verification if the firms adopt IASB or US-GAAP.
	5	Does the company use one of the leading global auditing firms?	Verification if the auditing firm is one of the following: PWC, Coopers & Lybrand, Arthur Andersen, KPMG, Ernst & Young, or Deloitte Touche Tohmatsu.
	6	Does the company disclose in its website or annual report compensation information for the CEO and board members?	Verification in the annual filings if any compensation information was disclosed (even if not for individual executives).
Board composition and functioning	7	Are the Chairman of the Board and the CEO different persons?	Verification if the name of the chairman and of the CEO are the same in the annual CVM filings.
	8	Does the company have monitoring committees such as a compensation and/or nominations and/or audit committee?	Verification of the existence of such committees in the corporate charter.
	9	Is the board clearly made up of outside and possibly independent directors?	Verification if directors were key executives in the company
	10	Is the board size between 5 and 9 members, as recommended by the IBGC Code of Best Practices?	The size of the board was obtained from the annual filings with the CVM.
	11	Do board members serve consecutive one-year terms, as recommended by the IBGC Code of Best Practices?	Verification of the term for directors in the corporate charter.
	12	Is there a permanent Fiscal Board?	Verification if there is a permanent fiscal board according to the corporate charter.

Governance Dimension	#	Corporate Governance Index (CGI) questions	Criteria for evaluation
Ethics and Conflicts of Interest	13	Is the company free of any undergoing inquiry at CVM regarding governance malpractices?	Verification if the company is listed among those being investigated in the CVM website.
	14	Is the company free of any CVM convictions and/or fining for governance malpractices or other securities law violations in the last five years?	Verification if the company is listed among those convicted or fined in the CVM website.
	15	Does the company submit to arbitration in place of regular legal procedures in the case of corporate governance malpractices?	Verification if the corporate charter privileges arbitration over regular legal proceedings.
	16	Do ultimate controlling shareholders, considering shareholder agreements, own less than 50% of the voting shares?	This percentage was considered as the threshold for control. This information was extracted from the annual CVM filings.
	17	Is the percentage of non-voting shares in total capital less than 20%?	This information was extracted from the number of shares in the annual CVM filings.
	18	Is the ultimate controlling shareholders' ratio of cash-flow rights to voting rights greater than 1?	This information was calculated using the procedure described earlier in this paper.
Shareholder rights	19	Does the company charter or verifiable actions facilitate the process of voting to all shareholders beyond what is legally required?	Comparison of what is in the corporate charter, if anything, with the legal requirements at the time.
	20	Does the company charter grant additional voting rights beyond what is legally required?	Comparison of what is in the corporate charter, if anything, with the legal requirements at the time.
	21	Does the company grant tag along rights beyond what is legally required?	Comparison of what is in the corporate charter, if anything, with the legal requirements at the time – 80% for voting shares and no tag along for non-voting shares.
	22	Are there pyramidal structures that decrease control concentration of the ultimate controlling shareholder?	Annual filings were used to verify if there were indirect control structures and if they reduce control concentration of the ultimate controlling shareholder.
	23	Does the company have shareholder agreements that decrease control concentration?	Annual filings were used to verify if there were shareholder agreements and the terms of the agreements to check if they reduce control concentration of the ultimate controlling shareholder.
	24	Is the free-float greater than or equal to what is required in Bovespa's Level 1 trading segment (25%)?	We verified in the annual CVM filings if the declared free float was greater than 25%.

Each question has a “yes” or “no” answer. If the answer is “yes”, then the value of 1 is attributed to the question, otherwise the value is 0. The index is the sum of the points for each question. The maximum index value is 24. Index dimensions are simply for presentation purposes and there is no weighting among questions. All questions are answered using public information disclosed by listed companies and not by means of potentially subjective

interviews. Sources of information are company filings, charters, and annual reports, for example, made available by infoinvest.com.br.

Table 3 – Summary of research variables and operational definitions

#	Code	Name of Variable	Operational definition
1	CGI	Corporate Governance Quality	Corporate Governance Index proposed by Leal and Carvalhal-da-Silva (2007), based on binary questions, and scaled to a 0-24 range.
2	DISC	Disclosure	Sub-index of CGI containing six questions relating to disclosure practices. Ranging from 0 to 6.
3	BOARD	Board of Directors	Sub-index of CGI containing six questions relating to the structure of the Board of Directors. Ranging from 0 to 6.
4	ETHIC	Ethics and Conflicts of Interest	Sub-index of CGI containing six questions relating to mechanisms designed to deal with matters of ethics and conflicts of interest. Ranging from 0 to 6.
5	SHARIG	Shareholder rights	Sub-index of CGI containing six questions relating to shareholder rights rules. Ranging from 0 to 6.
6	1VDIR	Control rights - largest shareholder	Percentage of common stock (voting capital) owned directly by the largest shareholder.
7	1TDIR	Cash flow rights - largest shareholder	Percentage of total shares (voting and non-voting capital) owned directly by the largest shareholder.
8	3VDIR	Control rights – three largest shareholders	Percentage of common stock (voting capital) owned directly by the three largest shareholders.
9	3TDIR	Cash flow rights – three largest shareholders	Percentage of total shares (voting and non-voting capital) owned directly by the three largest shareholders.
10	WEDGE1	Wedge between control rights and cash flow rights –largest shareholder	Difference between the percentage of voting capital and total capital owned directly by the largest shareholder (voting capital minus total capital).
11	WEDGE3	Wedge between control rights and cash flow rights – three largest shareholders	Difference between the percentage of voting capital and total capital owned directly by the three largest shareholders (voting capital minus total capital).
12	ADR23	Participation in ADR Program Level 2 or 3	Dummy variable equal to 1 if the firm issues ADR Level 2 or Level 3.
13	N2NM	Participation in Bovespa’s governance listing segments	Dummy variable equal to 1 if the firm is listed in the top two listing segments of São Paulo Stock Exchange (Level 2 or New Market in Bovespa).
14	VOTE	Percentage of voting shares to total shares	Ratio of voting capital to total capital.
15	LEVER	Leverage	Ratio of total (non-equity) liabilities to total assets at year-end.
16	GROWTH	Growth/investment opportunities	Cumulative percentage variation of net revenues over the last three years.

#	Code	Name of Variable	Operational definition
17	Q	Tobin's Q	Estimated as the ratio of market value to book value of assets. Market value of assets is computed as the market value of equity plus book value of assets minus book value of equity at year-end. The numerator "market value of equity" was computed directly by the ECONOMATICA database as the most liquid share class (voting or non-voting) market price multiplied by the total number of shares (voting and non-voting).
18	PBV	Price-to-Book-Value	Market value of shares divided by their book value.
19	ROA	Return on Assets	Estimated as the ratio of operating income to total assets at year-end.
20	ROE	Return on Equity	Net income divided by equity.
21	TANG	Tangibility of assets (proxy for the nature of operations)	Total fixed assets divided by net operational revenues.
22	LIQ	Share liquidity	Share liquidity based on stock trading volume throughout the previous 12 months.
23	FLOAT	Percentage of free float among total shares	Percentage of outstanding shares available for trading.
24	SIZE	Firm size	Natural logarithm of book value of total assets in thousands of Brazilian reais at year-end.
25	MKTCAP	Market Capitalization	Stock price of the most liquid share multiplied by the number of shares (voting and non-voting) issued.
26	PAYOUT	Payout ratio	Cash and stock dividends divided by Net Income.
27	DIVYIELD	Dividend Yield	Annual dividends per share divided by the share price in the beginning of the year.
28	TYPE1... TYPE4 (FOR, SBH, FAM, SOE)	Type of controlling shareholder	Four dummy variables regarding the identity of the controlling shareholder(s): TYPE1 = foreign ownership (FOR), TYPE2 = shared block-holding (SBH), TYPE3 = family-owned (FAM), and TYPE4 = state-owned (SOE).
29	IND1... IND17	Industry dummies	Seventeen dummy variables, equal to one for firms belonging to a specific industry and zero for those belonging to other industries (using the ECONOMATICA classification, comprising twenty categories, three of which were not represented in the sample).
30	YEAR(1)... YEAR(4)	Year dummies	Dummy variables $YEAR(t)$ defined as $YEAR(t)=1$ in the t-th year and $YEAR(t)=0$ otherwise, with $t=1, \dots, 4$ (1998, 2000, 2002, and 2004).
31	AGE	Firm Age	Number of years since the foundation of the firm.

Table 4 – Summary statistics for the Corporate Governance Index (CGI) and sub-indices (scaled from 0 to 10)

		1998	2000	2002	2004
Corporate Governance Index (CGI) Scaled in 0-10 range	Mean	4.16	4.21	4.39	5.00
	Standard-Dev	2.07	2.22	2.64	2.88
	Minimum	1.67	2.08	2.08	2.50
	1° Quartile	3.33	3.75	3.75	4.17
	Median	4.17	4.17	4.17	5.00
	3° Quartile	4.58	5.00	5.00	5.83
	Maximum	6.25	6.67	7.92	8.75
	N (sample)	225	225	199	175
		1998	2000	2002	2004
Disclosure sub-index (DISC) Scaled in 0-10 range	Mean	6.26	6.40	6.47	6.64
	Standard-Dev	0.88	0.89	1.01	1.03
	Minimum	1.67	0	1.67	1.67
	1° Quartile	5.00	5.00	5.00	5.00
	Median	6.67	6.67	6.67	6.67
	3° Quartile	6.67	6.67	8.33	8.33
	Maximum	8.33	10.0	10.0	10.0
	N (sample)	225	225	199	175
		1998	2000	2002	2004
Board of Directors sub-index (BOARD) Scaled in 0-10 range	Mean	3.48	3.42	3.69	4.77
	Standard-Dev	1.10	1.22	1.30	1.24
	Minimum	0	0	0	0
	1° Quartile	1.67	1.67	1.67	3.33
	Median	3.33	3.33	3.33	5.00
	3° Quartile	5.00	5.00	5.00	6.67
	Maximum	8.33	8.33	10.0	10.0
	N (sample)	225	225	199	175

		1998	2000	2002	2004
Ethics and Conflicts of Interest sub-index (ETHIC) Scaled in 0-10 range	Mean	4.16	4.17	4.30	4.59
	Standard-Dev	0.77	0.80	0.87	1.05
	Minimum	0	0	0	0
	1° Quartile	3.33	3.33	3.33	3.33
	Median	3.33	3.33	3.33	3.33
	3° Quartile	5.00	5.00	5.00	5.00
	Maximum	8.33	8.33	8.33	10.0
	N (sample)	225	225	199	175
		1998	2000	2002	2004
Shareholder Rights sub-index (SHARIG) Scaled in 0-10 range	Mean	2.75	2.85	3.11	4.02
	Standard-Dev	0.87	0.90	1.08	1.12
	Minimum	0	0	0	0
	1° Quartile	1.67	1.67	1.67	3.33
	Median	3.33	3.33	3.33	3.33
	3° Quartile	3.33	3.33	5.00	5.00
	Maximum	8.33	8.33	10.0	10.0
	N (sample)	225	225	199	175

Table 5 – Summary statistics for explanatory variables

Ownership structure variables:

Variable	1998			2000			2002			2004		
	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.
1VDIR	69.2%	68.8%	22.5%	70.4%	69.9%	22.7%	71.2%	71.5%	22.6%	59.1%	57.9%	25.8%
3VDIR	81.8%	86.4%	18.0%	82.9%	87.9%	18.1%	82.6%	88.2%	18.1%	79.3%	83.9%	19.1%
1TDIR	50.0%	49.6%	25.4%	50.4%	46.8%	26.2%	51.4%	50.1%	26.2%	42.6%	39.0%	23.7%
3TDIR	59.9%	60.2%	23.7%	61.2%	59.8%	25.1%	61.6%	61.7%	25.2%	59.7%	61.0%	23.4%
WEDGE1	19.2%	16.9%	16.9%	20.0%	17.9%	17.8%	19.8%	16.3%	18.7%	16.5%	12.2%	16.8%
WEDGE3	21.9%	20.4%	18.7%	21.7%	19.4%	19.3%	21.0%	18.0%	19.5%	19.5%	17.9%	17.0%
N (sample)	225			225			199			175		

Performance variables:

Variable	1998			2000			2002			2004		
	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.
Tobins' Q	0.77	0.74	0.28	0.96	0.90	0.39	0.95	0.90	0.34	1.30	1.05	0.80
PBV	0.61	0.39	1.21	1.14	0.68	2.10	1.24	0.67	2.43	2.35	1.18	5.03
ROA	8.8%	8.5%	8.1%	10.4%	10.6%	7.8%	12.1%	12.3%	9.2%	15.1%	13.9%	10.3%
N (sample)	225			225			199			175		

Type of controlling shareholder(s):

YEAR	Family-Owned (FAM)	State-Owned (SOE)	Shared Blockholding (SBH)	Foreign Ownership (FOR)	N (sample)
2004	51.5%	6.6%	24.4%	17.5%	175
2002	44.0%	6.5%	27.6%	21.9%	199
2000	42.7%	6.2%	28.4%	22.7%	225
1998	41.4%	6.2%	28.4%	24.0%	225

Other explanatory variables:

Variable	1998			2000			2002			2004		
	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.	Mean	Median	Stand Dev.
GROWTH	15.8%	12.1%	26.5%	21.6%	16.4%	32.8%	24.6%	17.7%	57.8%	17.9%	16.0%	16.8%
MKTCAP	554.7	117.5	1,579.4	1,330.7	230.9	4,226.4	1,477.1	249.6	4,929.5	3,590.0	541.7	10,803
ADR23	8.0%	-	-	8.9%	-	-	12.6%	-	-	14.9%	-	-
N2NM	0.0%	-	-	0.0%	-	-	2.0%	-	-	6.3%	-	-
LEVER	53.4%	50.7%	21.3%	57.2%	57.5%	21.5%	61.5%	62.0%	21.2%	60.9%	62.1%	20.3%
VOTE	54.9%	47.9%	22.8%	55.1%	46.8%	23.3%	56.2%	46.8%	24.0%	56.0%	46.4%	23.7%
FLOAT	48.5%	49.7%	25.3%	47.2%	50.4%	26.5%	46.5%	48.7%	26.2%	35.9%	32.9%	23.3%
PAYOUT	32.8%	23.8%	43.8%	39.6%	26.1%	60.3%	22.9%	0.0%	30.8%	48.9%	30.5%	159%
DIVYIELD	7.5%	3.3%	10.0%	3.9%	0.9%	7.9%	5.2%	2.6%	8.7%	3.5%	2.8%	4.2%
AGE	46.9	44.0	28.7	47.1	44.0	28.5	47.5	46.0	29.1	50.7	47.5	30.5
N (sample)		225			225			199			175	

Table 6 – Correlation matrix between CGI, CGI sub-indices, and selected explanatory variables

	CGI	CGI21	3VDIR	3TDIR	WEDGE3	ADR23	N2NM	GROW	Q Tobin	PBV	ROA	VOTE	LEVER	TANG
CGI	1,00													
CGI21	0,952 <i>0,000</i>	1,00												
3VDIR	-0,221 <i>0,000</i>	-0,127 <i>0,000</i>	1,00											
3TDIR	-0,067 <i>0,057</i>	-0,107 <i>0,002</i>	0,649 <i>0,000</i>	1,00										
WEDGE3	-0,130 <i>0,000</i>	0,015 <i>0,666</i>	0,132 <i>0,000</i>	-0,668 <i>0,000</i>	1,00									
ADR23	0,344 <i>0,000</i>	0,367 <i>0,000</i>	-0,091 <i>0,009</i>	-0,100 <i>0,004</i>	0,041 <i>0,239</i>	1,00								
N2NM	0,375 <i>0,000</i>	0,357 <i>0,000</i>	-0,040 <i>0,247</i>	0,003 <i>0,930</i>	-0,044 <i>0,212</i>	0,099 <i>0,005</i>	1,00							
GROWTH	0,064 <i>0,069</i>	0,077 <i>0,028</i>	0,046 <i>0,193</i>	0,061 <i>0,079</i>	-0,035 <i>0,311</i>	0,061 <i>0,079</i>	0,028 <i>0,419</i>	1,00						
Q Tobin	0,358 <i>0,000</i>	0,329 <i>0,000</i>	-0,038 <i>0,281</i>	0,043 <i>0,221</i>	-0,093 <i>0,008</i>	0,189 <i>0,000</i>	0,319 <i>0,000</i>	0,033 <i>0,345</i>	1,00					
PBV	0,140 <i>0,000</i>	0,122 <i>0,001</i>	-0,053 <i>0,130</i>	0,012 <i>0,725</i>	-0,068 <i>0,052</i>	0,067 <i>0,053</i>	0,072 <i>0,040</i>	0,008 <i>0,825</i>	0,545 <i>0,000</i>	1,00				
ROA	0,274 <i>0,000</i>	0,270 <i>0,000</i>	-0,063 <i>0,071</i>	-0,007 <i>0,843</i>	-0,053 <i>0,132</i>	0,180 <i>0,000</i>	0,083 <i>0,017</i>	0,021 <i>0,542</i>	0,411 <i>0,000</i>	0,113 <i>0,001</i>	1,00			
VOTE	0,179 <i>0,000</i>	-0,019 <i>0,588</i>	-0,023 <i>0,509</i>	0,398 <i>0,000</i>	-0,542 <i>0,000</i>	-0,057 <i>0,104</i>	0,106 <i>0,002</i>	-0,030 <i>0,390</i>	0,115 <i>0,001</i>	0,056 <i>0,108</i>	-0,018 <i>0,610</i>	1,00		
LEVER	0,1041 <i>0,0028</i>	0,101 <i>0,0037</i>	-0,0663 <i>0,0573</i>	-0,0893 <i>0,0104</i>	0,0516 <i>0,1395</i>	-0,0084 <i>0,8088</i>	0,0264 <i>0,4502</i>	0,016 <i>0,648</i>	0,245 <i>0,000</i>	0,224 <i>0,000</i>	-0,122 <i>0,001</i>	-0,006 <i>0,867</i>	1,00	
TANG	0,0002 <i>0,9943</i>	0,0119 <i>0,7335</i>	0,0195 <i>0,5762</i>	-0,0493 <i>0,1576</i>	0,0834 <i>0,0167</i>	-0,0019 <i>0,9555</i>	-0,0021 <i>0,9514</i>	-0,066 <i>0,060</i>	-0,014 <i>0,695</i>	-0,011 <i>0,760</i>	-0,029 <i>0,403</i>	-0,072 <i>0,040</i>	0,023 <i>0,516</i>	1,00

	CGI	CGI21	DISC	BOARD	ETHIC	SHARIG	FAM	FOR	SBH	SOE
CGI	1,00									
CGI21	0,952 <i>0,000</i>	1,00								
DISC	0,632 <i>0,000</i>	0,694 <i>0,000</i>	1,00							
BOARD	0,755 <i>0,000</i>	0,763 <i>0,000</i>	0,313 <i>0,000</i>	1,00						
ETHIC	0,426 <i>0,000</i>	0,149 <i>0,000</i>	-0,017 <i>0,628</i>	0,170 <i>0,000</i>	1,00					
SHARIG	0,624 <i>0,000</i>	0,673 <i>0,000</i>	0,281 <i>0,000</i>	0,226 <i>0,000</i>	0,020 <i>0,568</i>	1,00				
FAM	-0,235 <i>0,000</i>	-0,234 <i>0,000</i>	-0,176 <i>0,000</i>	-0,301 <i>0,000</i>	-0,026 <i>0,461</i>	-0,035 <i>0,319</i>	1,00			
FOR	-0,023 <i>0,503</i>	-0,034 <i>0,327</i>	-0,025 <i>0,475</i>	0,065 <i>0,064</i>	-0,039 <i>0,263</i>	-0,081 <i>0,021</i>	-0,479 <i>0,000</i>	1,00		
SBH	0,238 <i>0,000</i>	0,230 <i>0,000</i>	0,196 <i>0,000</i>	0,202 <i>0,000</i>	0,073 <i>0,037</i>	0,103 <i>0,003</i>	-0,545 <i>0,000</i>	-0,321 <i>0,000</i>	1,00	
SOE	0,088 <i>0,012</i>	0,117 <i>0,0008</i>	0,045 <i>0,198</i>	0,137 <i>0,0001</i>	-0,013 <i>0,704</i>	0,021 <i>0,5455</i>	-0,237 <i>0</i>	-0,139 <i>0,000</i>	-0,159 <i>0,000</i>	1,00

Table 7 – Determinants of firm-level corporate governance: Static GMM-Sys regressions

The Corporate Governance Practices Index (CGI) is the dependent variable. Operational definitions of all explanatory variables are presented in Table 3. Figures in parentheses are *t* statistics. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively. The coefficients were estimated with one-step GMM-Sys assuming that all regressors are endogenous, with the exception of the year and type of controlling shareholder dummies and firm age, which are assumed to be strictly exogenous. We compute firm-clustered standard-errors, which are robust to arbitrary forms of heteroscedasticity and autocorrelation of the error term (additionally, by including year dummies we control for a possible cross-sectional dependence of the error term). In the bottom of the table we report the Sargan/Hansen (test of overidentifying restrictions) statistic, with degrees of freedom and p-value, respectively, in parentheses.

Corporate Governance Practices Index (CGI)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GROWTH	-0.056 (-0.30)	0.001 (0.00)	-0.066 (-0.35)	0.041 (0.22)	-0.025 (-0.13)	0.032 (0.17)	-0.038 (-0.19)	0.048 (0.24)
TANG	0.002 (1.03)	0.002 (1.29)	0.002 (1.11)	0.0022* (1.70)	0.002 (1.38)	0.002 (1.40)	0.002 (1.52)	0.0023* (1.78)
SIZE	0.096 (0.37)	0.146 (0.57)	0.113 (0.48)	0.155 (0.68)	0.085 (0.35)	0.099 (0.40)	0.108 (0.46)	0.115 (0.51)
ADR23	3.995*** (3.64)	3.304*** (2.61)	3.964*** (3.77)	3.258*** (2.73)	4.230*** (3.78)	3.805*** (3.13)	4.180*** (3.87)	3.876*** (3.26)
N2NM	5.159*** (5.77)	4.970*** (6.75)	5.065*** (5.83)	4.553*** (6.82)	5.277*** (5.73)	5.235*** (6.64)	5.214*** (5.78)	4.883*** (6.68)
1VDIR	-2.549** (-2.04)				-2.401** (-1.99)			
3VDIR		-4.623** (-2.06)				-3.324* (-1.89)		
1TDIR			-2.512** (-2.09)				-2.384** (-2.04)	
3TDIR				-5.226** (-2.36)				-3.690** (-2.07)
WEDGE1			-2.975 (-1.58)				-3.051* (-1.70)	
WEDGE3				-6.85*** (-2.62)				-5.33*** (-2.62)
VOTE	0.372 (0.25)	0.081 (0.05)	0.212 (0.12)	-0.286 (-0.17)	0.880 (0.57)	0.832 (0.53)	0.626 (0.33)	0.492 (0.28)
Q	0.481 (0.87)	0.252 (0.44)	0.515 (0.96)	0.208 (0.38)				
PBV					0.078 (1.27)	0.018 (0.34)	0.075 (1.24)	0.011 (0.22)
ROA	3.302 (0.85)	4.498 (1.20)	3.023 (0.82)	5.239 (1.44)	4.468 (1.19)	5.481 (1.59)	4.167 (1.16)	5.763* (1.77)
AGE	0.008 (1.42)	0.007 (1.31)	0.007 (1.43)	0.006 (1.09)	0.007 (1.28)	0.007 (1.28)	0.007 (1.29)	0.006 (1.15)
LEVER	-2.571 (-1.52)	-2.888* (-1.74)	-2.638 (-1.63)	-2.270 (-1.49)	-2.965 (-1.62)	-2.918 (-1.64)	-2.977* (-1.74)	-2.511 (-1.56)
FOR	0.554 (0.78)	0.404 (0.58)	0.542 (0.77)	0.119 (0.17)	0.684 (0.92)	0.495 (0.69)	0.672 (0.94)	0.289 (0.41)
SBH	0.781 (1.13)	0.593 (0.87)	0.787 (1.15)	0.397 (0.57)	0.868 (1.27)	0.687 (1.01)	0.882 (1.33)	0.555 (0.82)
FAM	-0.352 (-0.47)	-0.509 (-0.69)	-0.327 (-0.45)	-0.623 (-0.85)	-0.214 (-0.29)	-0.347 (-0.47)	-0.184 (-0.26)	-0.386 (-0.54)

YEAR1	-0.93*** (-2.63)	-1.17*** (-3.44)	-0.92*** (-2.65)	-1.06*** (-3.24)	-1.00*** (-3.02)	-1.21*** (-3.70)	-1.00*** (-3.13)	-1.11*** (-3.58)
YEAR2	-0.86*** (-3.17)	-1.06*** (-4.35)	-0.85*** (-3.20)	-0.98*** (-4.18)	-0.89*** (-3.44)	-1.09*** (-4.59)	-0.88*** (-3.53)	-1.07*** (-4.46)
YEAR3	-0.64*** (-2.72)	-0.86*** (-4.10)	-0.62*** (-2.65)	-0.83*** (-3.97)	-0.70*** (-3.54)	-0.93*** (-5.59)	-0.69*** (-3.55)	-0.90*** (-5.39)
Num. Obs.	822	822	822	822	822	822	822	822
Sargan/Hansen	53.95 (48;0.26)	59.00 (48;0.13)	55.13 (52;0.38)	61.34 (52;0.18)	53.48 (48;0.27)	61.18 (48;0.10)	51.83 (52;0.48)	60.05 (52;0.20)

Table 8 – Determinants of firm-level corporate governance: Dynamic GMM-Sys regressions

The Corporate Governance Practices Index (CGI) is the dependent variable. Operational definitions of all explanatory variables are presented in Table 3. Figures in parentheses are *t* statistics. ***, **, and * denote statistical significance at 1%, 5%, and 10%, respectively. The coefficients were estimated with one-step GMM-Sys assuming that all regressors are either endogenous, with the exception of the year and type of controlling shareholder dummies and firm age, which are assumed to be strictly exogenous. We compute firm-clustered standard-errors, which are robust to arbitrary forms of heteroscedasticity and autocorrelation of the error term (additionally, by including year dummies we control for a possible cross-sectional dependence of the error term). In the bottom of the table we report the Sargan/Hansen (test of overidentifying restrictions) statistic, with degrees of freedom and p-value, respectively, in parentheses.

Corporate Governance Practices Index (CGI)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGI _(t-1)	0.445** (2.42)	0.430** (2.37)	0.450** (2.35)	0.407** (2.21)	0.362* (1.97)	0.388** (2.35)	0.359* (1.93)	0.383** (2.22)
GROWTH	-0.049 (-0.31)	0.007 (0.04)	-0.059 (-0.35)	0.026 (0.12)	-0.069 (-0.38)	0.062 (0.37)	-0.069 (-0.36)	0.114 (0.50)
TANG	-0.021 (-1.52)	-0.019 (-1.58)	-0.020 (-1.28)	-0.017 (-1.00)	-0.016 (-1.49)	-0.015 (-1.46)	-0.016 (-1.13)	-0.018 (-1.04)
SIZE	0.015 (0.05)	-0.171 (-0.59)	0.010 (0.03)	-0.175 (-0.56)	0.035 (0.12)	-0.062 (-0.23)	0.029 (0.09)	-0.046 (-0.16)
ADR23	3.070** (2.42)	3.565*** (2.94)	3.089*** (2.61)	3.626** (2.56)	3.346** (2.27)	3.316*** (2.63)	3.388** (2.47)	3.126** (2.06)
N2NM	4.283 (1.44)	4.418 (1.64)	4.252 (1.40)	4.669 (1.61)	5.391* (1.77)	4.522* (1.78)	5.426* (1.80)	4.629 (1.64)
1VDIR	0.435 (0.31)				0.450 (0.31)			
3VDIR		-0.621 (-0.29)				-0.878 (-0.43)		
1TDIR			0.582 (0.38)				0.414 (0.28)	
3TDIR				-0.346 (-0.16)				-1.024 (-0.51)
WEDGE1			0.198 (0.08)				0.609 (0.22)	
WEDGE3				-1.192 (-0.28)				-0.066 (-0.02)
VOTE	2.415* (1.96)	2.927** (2.35)	2.268 (1.55)	2.549 (1.28)	2.381* (1.90)	2.922** (2.38)	2.469 (1.48)	3.283 (1.61)
Q	0.969 (1.46)	0.793 (1.13)	0.965 (1.47)	0.632 (0.95)				
PBV					0.082 (0.79)	-0.007 (-0.09)	0.085 (0.83)	-0.013 (-0.19)
ROA	-1.720 (-0.42)	0.437 (0.10)	-1.725 (-0.44)	1.647 (0.40)	0.400 (0.10)	2.386 (0.67)	0.375 (0.10)	2.772 (0.82)
AGE	0.000 (0.10)	-0.001 (-0.12)	0.000 (0.10)	0.000 (-0.09)	0.002 (0.48)	0.000 (0.04)	0.002 (0.51)	0.000 (-0.06)
LEVER	0.998 (0.49)	0.656 (0.32)	1.005 (0.54)	1.003 (0.51)	-0.339 (-0.15)	0.502 (0.24)	-0.404 (-0.21)	0.780 (0.40)

FOR	0.087 (0.11)	0.034 (0.04)	0.042 (0.05)	-0.076 (-0.08)	0.637 (0.76)	0.330 (0.42)	0.669 (0.84)	0.338 (0.42)
SBH	0.429 (0.53)	0.230 (0.27)	0.405 (0.49)	0.197 (0.22)	0.939 (1.11)	0.587 (0.77)	0.954 (1.13)	0.585 (0.72)
FAM	-0.031 (-0.04)	-0.359 (-0.42)	-0.044 (-0.05)	-0.398 (-0.45)	0.247 (0.30)	-0.100 (-0.13)	0.253 (0.31)	-0.130 (-0.17)
AGE	0.000 (0.10)	-0.001 (-0.12)	0.000 (0.10)	0.000 (-0.09)	0.002 (0.48)	0.000 (0.04)	0.002 (0.51)	0.000 (-0.06)
YEAR2	-0.86*** (-2.68)	-0.85*** (-2.87)	-0.86*** (-2.82)	-0.83*** (-2.81)	-1.02*** (-3.30)	-0.99*** (-3.77)	-1.02*** (-3.61)	-0.98*** (-3.88)
YEAR3	-0.80*** (-2.87)	-0.78*** (-3.21)	-0.81*** (-2.92)	-0.80*** (-3.37)	-0.97*** (-4.16)	-0.96*** (-5.51)	-0.97*** (-4.21)	-0.96*** (-5.48)
Num. Obs.	529	529	529	529	529	529	529	529
Sargan/Hansen	23.83 (21;0.30)	22.65 (21;0.36)	23.83 (22;0.36)	21.61 (22;0.48)	23.84 (21;0.30)	24.53 (21;0.27)	23.98 (22;0.35)	22.51 (22;0.43)