

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

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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 through a corporate governance practices index. A key contribution is to examine the totally voluntary adoption nature 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 analyze the impact of ownership structure on the quality of corporate governance practices segregating control and cash flow rights. Overall firm-level corporate governance quality is slowly improving but is still poor. Voluntary adoption yields divergence rather than convergence, leading to greater heterogeneity of corporate governance quality. 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. Firms in the same contractual environment can present very different levels of corporate governance practices, which are at least partially and endogenously determined by firms’ observable characteristics, including their market value. Control rights concentration and family ownership are associated to poorer practices while the presence of large blockholders agreements are related to better practices.

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

JEL classification: G32, G34.

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's 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 due 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, 2001), 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 (legal protection), and an internal one, related to the type of activity carried out and to other observable firm characteristics (endogenous protection). In this sense, Himmelberg et al. (2001, 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’s possible that firms within a country offer different levels of protection to their investors, due to their operational specificities and to the different degrees of interest they could have 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), Leal and 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 panel data regression methods.

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 firms characteristics is also important, since it helps to understand what can lead firms 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 empirical results suggest that recent years have seen an increase in the overall level of corporate governance in Brazil, but at a sluggish pace, and that firm-level corporate governance quality in Brazil can still be considered unsatisfactory. Moreover, we didn't observe a convergence towards the voluntary adoption of corporate governance practices. Rather, we observed an increasing divergence, leading to a higher heterogeneity of corporate governance quality among Brazilian firms. Additionally, this divergence is reflected in all governance dimensions (board of directors, disclosure, shareholder rights, and ethics)

Regarding the determinants of firm-level corporate governance quality, we confirm the hypotheses that growth perspectives, financial leverage, the issuance of Levels 2 or 3 ADRs and joining tone of Bovespa's premium listing segments (Level 2 or New Market) positively influence firm-level corporate governance quality. We also found that the type of controlling shareholder can be an important factor in the decision of the firm to voluntarily improve its governance practices. Specifically, we found that firms controlled by different and large

blockholders associated through contractual arrangements have higher corporate governance quality, on average. On the other hand, we observed a negative relation between family controlled firms and corporate governance quality. We also observed that greater ownership concentration is negatively related to the voluntary adoption of governance practices.

Based on our results, 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) 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’s probably the first one to analyze it segregating the impact of control rights from cash flow rights held by controlling shareholders; 4) The results indicate that a special ownership structure arrangement, called shared blockholding (firms with different and large blockholders associated through shareholder agreements) can positively influence the firm-level corporate governance quality. To our knowledge, this is the first paper to observe the influence of this type of controlling shareholding on the level of governance practices voluntarily adopted by firms.

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

The paper is structured as follows: section 2 presents 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 presents the research methodology, 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 enact. Brazil has taken a different approach with the totally 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 better corporate governance practices promotion, 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 hasn't been addressed by salient organizations and that there hasn't been a structured discussion of the matter since the mid 90's.

For 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 allowed asset allocation ceilings for 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). It has adopted an interesting strategy to deal with the potential costly signaling demand by firms 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 practice the premium listing requirements by privately contracting with Bovespa. What was very clever about Bovespa's new market, 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. Bovespa's 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 banning companies from using non voting shares, that 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 companies 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 in the 35% of total trading volume whereabouts. On February 28, 2007 Bovespa had 399 listed firms, of which 51 were listed at the NM, 14 at L2, 36 at L1, 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 companies. The IBGC begin its

activities in 1995, introduced a first version of the code in 1998 and its current version, the third, is from 2003.

Companies may decide to adopt 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 to incur in costly signaling about their behavior in relation to better corporate governance practices. The simple declaration of voluntarily adopting 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 total discretion on important corporate decisions, resisting new external views at the top. There may also be a loss of potential control premiums (see *Carvalho-da-Silva & Subrahmanyam (2007)*) with 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 (development of an investors relation 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 evaluates why firms within the same contractual environment voluntarily choose to present different firm-level corporate governance quality (understood as governance practices recommended by market agents). In sequence, we present results of research that point out to potential determinants of corporate governance quality and proceed to present a table summarizing the determinants to be tested in this paper.

Klapper & Love (2004) incate 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, larger firms could face greater agency costs due to their largest free cash flow, leading them to voluntarily adopt better corporate governance practices in order to mitigate this problem. On the other hand, smallest 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 company attributes influence the choice of corporate governance practices and interact with the legal environment they are inserted in. The authors developed a theoretical model resulting in 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 presenting 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 going on 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 by observable firms' characteristics.

In addition to the potential determinants of firm-level corporate governance quality previously tested in the literature (described in the paragraphs above), we will test the following potential

determinants: 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 presents a summary of all variables tested as potential determinants 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 Methodology

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 weighed version of the index because it is easier to reproduce. Also, although equally weighing 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 weighing schemes. The CGI questions are presented in Table 2. 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, respectively².

² Data were collected using the Brazilian Securities Commission's (CVM – Comissão de Valores Mobiliários) 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).

- 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) otherwise³.
- 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) otherwise⁴.
- Leverage (LEVER): ratio of total (non-equity) liabilities to total assets at year-end.

³ 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.

⁴ 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.

- 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.
- 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 firm's founding.
- Industry: set of seventeen binary variables (IND1,...,IND17) representing different industries. These variables attribute 1 to companies that belong to a specific industry and 0 to companies 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 (TYPE): 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 estimated the model below using the Pooled OLS and Fixed Effects panel data regression procedures.

$$\begin{aligned} \text{CGI}_{it} = & \alpha + \beta_1 \text{GROWTH}_{it} + \beta_2 \text{TANG}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{ADR23}_{it} + \beta_5 \text{N2NM}_{it} + \\ & + \beta_6 \text{OWN}_{it} + \beta_7 \text{VALUE}_{it} + \beta_8 \text{PROFIT}_{it} + \sum_{j=1}^{16} \delta_j \text{IND}_{jit} + \sum_{l=1}^3 \gamma_l \text{TYPE}_{lit} + \sum_{m=1}^3 \varphi_m \text{YEAR}_{mit} + u_i + \varepsilon_{it} \end{aligned}$$

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 do not vary over time. Based on the hypothesis 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 ;
- δ , γ and φ are coefficients related to several binary control variables.

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 at 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 show that these 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 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 dimensions⁵. 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).

⁵ 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.

We believe that CGI score improvements in recent years are associated to firms joining Bovespa's premium segments. Maximum scores as well as average scores have increased due to the presence of firms joining those premium listings. 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 listing 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, explanatory variables summary statistics are presented 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 changing throughout the years. However, the concentration of voting rights held by the largest shareholder presented a significant decrease from 2002 to 2004 (71.2% dropping 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 (50.1% dropping 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's a systematically and significant improvement in all performance variables throughout the years (Q, PBV, and ROA variables);
- e) Regarding the identity of the controlling shareholder, there's a decrease in the proportion of foreign-controlled firms in the sample. This is probably due to several foreign-owned firms going private at 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 (about a 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 of about 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 associations⁶:

1. According to our hypothesis, the CGI was 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) was positively correlated with performance variables (Tobin's Q and ROA), suggesting that firms that formally decide

⁶ All the correlations highlighted in this section are above 0.10 in absolute value and statistically significant at the 1% level.

to voluntarily join stricter governance listing segments are also associated to superior corporate performance;

4. The ratio of voting shares to total shares was 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 was 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;
7. Firms controlled by large blockholders associated through contractual arrangements exhibited greater CGI, CGI21, CGI sub-index scores;
8. The quality of the Board of Directors was positively correlated with all other three governance dimensions, suggesting a complementarily effect between corporate governance mechanisms.

[insert Table 6 here]

5.2. Determinants of firm-level corporate governance quality

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

[insert Table 7 here]

The results from OLS regressions should, however, be analyzed with caution, because this method does not account for unobserved firm characteristics that could hinder the correct relationship identification between firm-level corporate governance and its potential determinants. If some of these “omitted variables” impact corporate governance quality at the firm-level and are correlated with the regressors included in the model, then the estimated coefficients would be inconsistent, reflecting a spurious relationship between the variables of interest. In order to mitigate this problem, we also performed a Fixed Effects (FE) regression procedure (also known as Within Estimator) on the model. The results from the FE procedure are presented in Table 8.

[insert Table 8 here]

Taking into account the results from OLS and FE regressions presented in Tables 7 and 8 (particularly the results from the Fixed Effects procedures, which are considered more robust), we observed that, according to our hypotheses:

- Growth perspectives (GROWTH) positively influenced CGI;
- The issuance of Level 2 and 3 ADRs as well as the joining to premium L2 and NM listings at Bovespa relate positively to corporate governance quality;
- Financial leverage is positively associated with the CGI.

On the other hand, we did not find a significant negative relationship between asset tangibility and corporate governance quality, perhaps due to limitations of our proxy, because Brazilian firms usually do not discriminate their R&D expenditures and, therefore, we could not use the ratio of R&D to sales as an alternative indicator.

We also observed a positive association between firm size and the CGI index in all specifications. Even though we did not have a clear hypothesis about this coefficient's expected sign, our results are attuned to the idea that larger firms may face greater agency costs associated with free cash flow but, at the same time, have more financial resources to implement costly corporate governance practices.

Interesting results also emerged from the ownership structure proxies, for which we did not have clear hypotheses about the sign of their impact's on the CGI as well. Specifically, both measures of voting and cash flow rights showed a negative relationship with the CGI. This result supports the hypothesis of Anand *et al.* (2006) that large shareholders, not needing to secure the votes of minority shareholders in order to control the direction of the firm, are less likely to voluntarily implement recommended governance guidelines. Moreover, the wedge between control and cash flow rights presented a negative relationship with the CGI and the percentage of voting rights on total shares presented a positive relationship with the CGI.

We also note a positive influence of Tobin's Q on firm-level corporate governance. This result is in line with the idea that corporate governance is an endogenous variable and that there is a reverse causality mechanism between corporate governance quality and firm performance. Finally, the indicators for the type of controlling shareholder also presented interesting results. The shared blockholding control dummy showed a positive association with the CGI, while our family control dummy showed a negative association with corporate governance quality.

Nonetheless, all results above may be sensitive to the specification of the corporate governance index. Given that there are three questions in the construction of the CGI related to the ownership structure of the firms (questions 16, 17, and 18), the results obtained for the ownership variables are particularly prone to be biased. For this reason, we built a reduced index (CGI21) with 21 questions (deleting questions 16, 17, and 18) and conducted new tests as a robustness check. The results of the regressions using CGI21 as the dependent variable are presented in Tables 9 (OLS regressions) and 10 (Fixed Effect regressions). These new findings are qualitatively the same for all variables, except for two of the ownership structure variables: the wedge between voting and cash flow rights and the ratio of voting to the total shares issued. WEDGE1 and WEDGE3 presented a null or positive association with the reduced CGI, while showing a negative relationship with the full CGI. Furthermore, VOTE presented a negative relation with the reduced CGI, whereas showing a positive relation with the full CGI. Because the regressions with CGI21 present a lower probability of being biased by the firms' ownership structure, the overall result is that we have not yet found a clear relationship between firm-level corporate governance quality and both the WEDGE and VOTE variables.

[insert Table 9 here]

[insert Table 10 here]

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 totally voluntary adoption nature 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 results: (1) overall firm-level corporate governance quality is improving at a slow pace; (2) despite the overall corporate governance improvement, overall firm-level corporate governance quality can still be considered poor; (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 is happening 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 on disclosure and worst on shareholders rights.

Regarding the second goal, there are three main findings. (1) Proxies for growth perspectives, firm size, financial leverage, firm value, issuance of Level 2 or 3 ADRs, and joining Bovespa's Level 2 or New Market premium listing segments, are positively related to firm-level corporate governance quality. The positive relationship between value and corporate governance practices supports the notion that corporate governance is endogenous and that reverse causality between these variables may be present. (2) Voting and cash flow rights concentration presented are negatively related to the CGI, suggesting that large shareholders could be less prone to voluntarily implement better governance practices. (3) The identity of the controlling shareholder matters. Firms controlled by different and large blockholders associated by way of shareholder agreements show better corporate governance quality while family-controlled firms stage poorer practices.

These results should be interpreted with caution due to corporate governance quality and corporate attributes proxies limitations. Moreover, despite our great care, the econometric procedures applied may not have correctly dealt with the potential endogeneity of some explanatory variables, weakening causal inferences.

Referring to the recent literature, our results point in the same direction of Durnev and Kim (2005) on the positive association between investment opportunities and firm-level corporate governance quality. However, instead of the positive relationship between ownership concentration and corporate governance quality in their findings, we observed the opposite. In this case, our results are closer to those of Anand *et al.* (2006), who have found a negative link

between the presence of large shareholders (blockholders controlling more than 50% of voting shares) and the voluntary adoption of recommended corporate governance guidelines.

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.

References

- ANAND, Anita, MILNE, Frank, and PURDA, Lynnette, "Voluntary Adoption of Corporate Governance Mechanisms (2006). *Working paper presented at 2006 annual meetings of the American Law and Economics Association.*
- BECK, T., DEMIRGUC-KUNT, A., LEVINE, R. Law, politics and finance. World Bank Policy Research Working Paper n. 2585 (2001).
- CARVALHAL-DA-SILVA, A. L., A. SUBRAHMANYAM. "Dual-Class Premium, Corporate Governance, and the Mandatory Bid Rule: Evidence from the Brazilian Stock Market." *Journal of Corporate Finance*, forthcoming (2007).
- CLAESSENS, Stijn, DJANKOV, Simeon, FAN, Joseph P.H., LANG, Larry H.P. Disentangling the Incentive and Entrenchment Effect of Large Shareholdings. *Journal of Finance*, v. 57, n.6, p. 2741-2771, December (2002).
- DE CARVALHO, A. G., G. G. PENNACCHI. "Can a stock exchange improve corporate behavior? Evidence from firm's migration to premium listings in Brazil." *Working paper*, (2007). (Previous version available at <http://ssrn.com/abstract=678282>).
- DURNEV, Art, KIM, Han. To steal or not to steal: firm attributes, legal environment, and valuation. *Journal of Finance*, v. 60, n. 3, p. 1461-1493, June (2005).
- HIMMELBERG, Charles, HUBBARD, Glenn, LOVE, Inessa. Investor protection, ownership and the cost of capital. *Unpublished working paper, Columbia University* (2001).
- HIMMELBERG, Charles, HUBBARD, Glenn, PALIA, D. Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics*, v. 53, p. 353-384 (1999).
- KLAPPER, Leora, LOVE, Inessa. Corporate governance, investor protection, and performance in emerging markets. *Journal of Corporate Finance*, v. 10, p. 703-728, (2004).
- LA PORTA, Rafael, SHLEIFER, Andrei, LOPEZ-DE-SILANES, Florencio, VISHNY, Robert. Law and finance. *Journal of Political Economy*, v. 106, p. 1113-1155, (1998).
- LA PORTA, Rafael, SHLEIFER, Andrei, LOPEZ-DE-SILANES, Florencio, VISHNY, Robert. Investor protection and corporate governance. *Journal of Financial Economics*, v. 58, p. 3-27, October, (2000).

- LEAL, Ricardo. P., CARVALHAL-DA-SILVA, André L. Corporate governance and value, in Brazil (and in Chile), In Lopez-de-Silanes, Florencio., Chong, Alberto, org., Investor Protection and Corporate Governance – Firm Level Evidence Across Latin America, Stanford University Press, 2007. Also in *Inter-American Development Bank Research Network Working Paper #R-514*, (2005). Available at http://www.iadb.org/res/pub_desc.cfm?pub_id=R-514.
- LEAL, R. P. C.; CARVALHAL DA SILVA, A.; VALADARES, S. Ownership, Control and Corporate Valuation of Brazilian Companies. *Proceedings of the Latin American Corporate Governance Roundtable*, São Paulo, April (2000).
- LEAL, Ricardo. P., CARVALHAL DA SILVA, André L. Corporate governance index, firm valuation and performance in Brazil. *Brazilian Review of Finance*, v. 3, n. 1, p. 1-18, July (2005).
- LEAL, Ricardo. P., Governance practices and corporate value – a recent literature survey. *Revista de Administração de Empresas da USP – RAUSP*, v. 39, n. 4, p. 327-337 (2004).
- SILVEIRA, Alexandre M., BARROS, Lucas A., FAMA, Rubens. Determinants of Corporate Governance Quality of Brazilian Listed Companies. *IV Meeting of the Brazilian Finance Society*, Rio de Janeiro, July (2004). Available at <http://www.sbfin.org.br/> (only in portuguese).

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 and LOVE, 2004).	GROWTH
Nature of operations (tangibility of assets)	Firms with more intangible assets should have, <i>ceteris paribus</i> , 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 <i>et al.</i> , 1999).	TANG
Firm size	The relation between firm-level corporate governance and firm size is not clear <i>ex-ante</i> . 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 CG practices. (KLAPPER and 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 <i>ex-ante</i> . 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	1VDIR or 3VDIR

Potential determinant of firm-level corporate governance	Rationale	Variable code
	<p>secure the votes of minority shareholders in order to control the direction of the firm. Therefore, Anand <i>et al.</i> (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 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>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's 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 Carvalhal-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 between 0 and 6.
3	BOARD	Board of Directors	Sub-index of CGI containing six questions relating to the structure of the Board of Directors. Ranging between 0 and 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 between 0 and 6.
5	SHARIG	Shareholder rights	Sub-index of CGI containing six questions relating to shareholder rights rules. Ranging between 0 and 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 to 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 Sao Paulo Stock Exchange (Level 2 or New Market at 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.
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

#	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 between 0 and 6.
3	BOARD	Board of Directors	Sub-index of CGI containing six questions relating to the structure of the Board of Directors. Ranging between 0 and 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 between 0 and 6.
5	SHARIG	Shareholder rights	Sub-index of CGI containing six questions relating to shareholder rights rules. Ranging between 0 and 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. numerator “market value of equity” was computed directly by the ECONOMATICA database as the most liquid share class (voting or non-voting) market price times 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 times total number of shares (voting and non voting) issued.
26	PAYOUT	Payout ratio	Cash and stock dividends/Net Income.
27	DIVYIELD	Dividend Yield	Annual dividends per share divided by the share price on 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 = family-owned (FAM), TYPE2 = state-owned (SOE), TYPE3 = shared block-holding (SBH), and TYPE4 = foreign

#	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 between 0 and 6.
3	BOARD	Board of Directors	Sub-index of CGI containing six questions relating to the structure of the Board of Directors. Ranging between 0 and 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 between 0 and 6.
5	SHARIG	Shareholder rights	Sub-index of CGI containing six questions relating to shareholder rights rules. Ranging between 0 and 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.
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	Firm's 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 0-10)**

		1998	2000	2002	2004
Corporate Governance Index (CGI) Scaled from 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 from 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 from 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 from 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 from 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	1,00												
	<i>0,000</i>													
3VDIR	-0,221	-0,127	1,00											
	<i>0,000</i>	<i>0,000</i>												
3TDIR	-0,067	-0,107	0,649	1,00										
	<i>0,057</i>	<i>0,002</i>	<i>0,000</i>											
WEDGE3	-0,130	0,015	0,132	-0,668	1,00									
	<i>0,000</i>	<i>0,666</i>	<i>0,000</i>	<i>0,000</i>										
ADR23	0,344	0,367	-0,091	-0,100	0,041	1,00								
	<i>0,000</i>	<i>0,000</i>	<i>0,009</i>	<i>0,004</i>	<i>0,239</i>									
N2NM	0,375	0,357	-0,040	0,003	-0,044	0,099	1,00							
	<i>0,000</i>	<i>0,000</i>	<i>0,247</i>	<i>0,930</i>	<i>0,212</i>	<i>0,005</i>								
GROWTH	0,064	0,077	0,046	0,061	-0,035	0,061	0,028	1,00						
	<i>0,069</i>	<i>0,028</i>	<i>0,193</i>	<i>0,079</i>	<i>0,311</i>	<i>0,079</i>	<i>0,419</i>							
Q Tobin	0,358	0,329	-0,038	0,043	-0,093	0,189	0,319	0,033	1,00					
	<i>0,000</i>	<i>0,000</i>	<i>0,281</i>	<i>0,221</i>	<i>0,008</i>	<i>0,000</i>	<i>0,000</i>	<i>0,345</i>						
PBV	0,140	0,122	-0,053	0,012	-0,068	0,067	0,072	0,008	0,545	1,00				
	<i>0,000</i>	<i>0,001</i>	<i>0,130</i>	<i>0,725</i>	<i>0,052</i>	<i>0,053</i>	<i>0,040</i>	<i>0,825</i>	<i>0,000</i>					
ROA	0,274	0,270	-0,063	-0,007	-0,053	0,180	0,083	0,021	0,411	0,113	1,00			
	<i>0,000</i>	<i>0,000</i>	<i>0,071</i>	<i>0,843</i>	<i>0,132</i>	<i>0,000</i>	<i>0,017</i>	<i>0,542</i>	<i>0,000</i>	<i>0,001</i>				
VOTE	0,179	-0,019	-0,023	0,398	-0,542	-0,057	0,106	-0,030	0,115	0,056	-0,018	1,00		
	<i>0,000</i>	<i>0,588</i>	<i>0,509</i>	<i>0,000</i>	<i>0,000</i>	<i>0,104</i>	<i>0,002</i>	<i>0,390</i>	<i>0,001</i>	<i>0,108</i>	<i>0,610</i>			
LEVER	0,1041	0,101	-0,0663	-0,0893	0,0516	-0,0084	0,0264	0,016	0,245	0,224	-0,122	-0,006	1,00	
	<i>0,0028</i>	<i>0,0037</i>	<i>0,0573</i>	<i>0,0104</i>	<i>0,1395</i>	<i>0,8088</i>	<i>0,4502</i>	<i>0,648</i>	<i>0,000</i>	<i>0,000</i>	<i>0,001</i>	<i>0,867</i>		
TANG	0,0002	0,0119	0,0195	-0,0493	0,0834	-0,0019	-0,0021	-0,066	-0,014	-0,011	-0,029	-0,072	0,023	1,00
	<i>0,9943</i>	<i>0,7335</i>	<i>0,5762</i>	<i>0,1576</i>	<i>0,0167</i>	<i>0,9555</i>	<i>0,9514</i>	<i>0,060</i>	<i>0,695</i>	<i>0,760</i>	<i>0,403</i>	<i>0,040</i>	<i>0,516</i>	

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

Table 7. Determinants of firm-level corporate governance – OLS regressions

The Corporate Governance Practices Index (CGI) is the dependent variable. CGI construction is described in section 4.1.1. The operational definition of all explanatory variables is presented in Table 3. Binary variables related to the firms' industry (IND) and year (YEAR) were included in the regressions below, being omitted from the tables due to space reasons. The sample is comprised of 823 firm-years observations for the 1998, 2000, 2002, and 2004. Figures between parentheses indicate the *t* statistics. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% respectively. The coefficients were estimated through the Ordinary Least Squares method (OLS) with heteroscedasticity-robust standard errors.

Corporate Governance Practices Index (CGI)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GROWTH	-0.006 (-0.05)	0.053 (0.43)	0.001 (0.01)	0.059 (0.49)	-0.006 (-0.05)	0.052 (0.42)	0.001 (0.01)	0.059 (0.49)
TANG	0.001 (0.57)	0.001 (0.63)	0.001 (0.54)	0.001 (0.60)	0.001 (0.61)	0.001 (0.67)	0.001 (0.57)	0.001 (0.63)
SIZE	0.575*** (10.32)	0.551*** (9.85)	0.576*** (10.34)	0.553*** (9.88)	0.579*** (10.31)	0.556*** (9.84)	0.580*** (10.33)	0.558*** (9.87)
ADR23	0.868*** (3.92)	0.825*** (3.71)	0.868*** (3.90)	0.819*** (3.66)	0.908*** (4.09)	0.871*** (3.90)	0.907*** (4.07)	0.864*** (3.85)
N2NM	5.066*** (11.36)	5.078*** (11.54)	5.055*** (11.37)	5.067*** (11.52)	5.343*** (12.17)	5.375*** (12.42)	5.329*** (12.19)	5.363*** (12.40)
1VDIR	-1.415*** (-5.01)				-1.387*** (-4.92)			
3VDIR		-2.386*** (-6.50)				-2.332*** (-6.33)		
1TDIR			-1.484*** (-5.06)				-1.462*** (-5.00)	
3TDIR				-2.443*** (-6.52)				-2.392*** (-6.37)
WEDGE1			-1.123** (-2.33)				-1.071** (-2.21)	
WEDGE3				-2.041*** (-4.06)				-1.965*** (-3.90)
Q	0.341** (2.37)	0.365** (2.49)	0.340** (2.37)	0.366*** (2.51)				
PBV					0.280 (1.47)	0.266 (1.29)	0.228 (1.49)	0.278 (1.34)
ROA	0.815 (0.96)	0.830 (0.99)	0.859 (1.01)	0.857 (1.02)	1.400* (1.74)	1.465* (1.84)	1.442* (1.80)	1.490* (1.87)
VOTE	1.282*** (4.20)	1.196*** (4.01)	1.413*** (3.91)	1.356*** (3.87)	1.330*** (4.38)	1.252*** (4.22)	1.471*** (4.09)	1.421*** (4.08)
AGE	0.001 (0.48)	0.001 (0.26)	0.001 (0.48)	0.001 (0.27)	0.001 (0.44)	0.001 (0.23)	0.001 (0.45)	0.001 (0.24)
LEVER	0.459 (1.41)	0.336 (1.03)	0.444 (1.36)	0.299 (0.90)	0.561* (1.77)	0.458 (1.44)	0.541* (1.69)	0.415 (1.28)
FAM	-0.156 (-0.76)	-0.202 (-1.03)	-0.173 (-0.84)	-0.228 (-1.14)	-0.175 (-0.85)	-0.222 (-1.12)	-0.194 (-0.94)	-0.250 (-1.23)
FOR	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>
SBH	0.896*** (4.63)	0.855*** (4.50)	0.888*** (4.60)	0.844*** (4.44)	0.894*** (4.61)	0.856*** (4.49)	0.886*** (4.58)	0.843*** (4.43)
SOE	-0.223 (-0.73)	-0.135 (-0.43)	-0.250 (-0.81)	-0.180 (-0.56)	-0.293 (-0.95)	-0.213 (-0.67)	-0.322 (-1.03)	-0.260 (-0.81)
Intercept	2.898*** (3.13)	4.420*** (4.28)	2.811*** (3.01)	4.345*** (4.20)	2.988*** (3.23)	4.478*** (4.31)	2.895*** (3.08)	4.399*** (4.23)
R²	52.5%	53.5%	52.5%	53.6%	52.3%	53.3%	52.4%	53.4%
Prob. (F)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Firms (n)	823	823	823	823	823	823	823	823

Table 8. Determinants of firm-level corporate governance – Fixed-Effects regressions

Corporate Governance Practices Index (CGI) is the dependent variable. CGI construction is described in section 4.1.1. The operational definition of all explanatory variables is presented in Table 3. Binary variables related to the firms' industry (IND) and year (YEAR) were included in the regressions below, being omitted from the tables due to space reasons. The sample is comprised of 823 firm-years observations for the 1998, 2000, 2002, and 2004. Figures between parentheses indicate *t* statistics. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% respectively. The coefficients were estimated through the Fixed-Effects procedure (FE).

Corporate Governance Practices Index (CGI)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GROWTH	0.279* (1.85)	0.298** (2.02)	0.305** (2.03)	0.313** (2.12)	0.273* (1.81)	0.290** (1.96)	0.297** (1.97)	0.303** (2.05)
TANG	0.001 (1.28)	0.001 (1.30)	0.001 (1.29)	0.001 (1.31)	0.001 (1.28)	0.001 (1.31)	0.001 (1.29)	0.001 (1.31)
SIZE	0.288* (1.64)	0.326* (1.89)	0.293* (1.68)	0.328* (1.91)	0.284* (1.62)	0.318* (1.85)	0.288* (1.65)	0.318* (1.86)
ADR23	0.982** (1.97)	0.851* (1.74)	0.986** (1.99)	0.827* (1.69)	0.981** (1.97)	0.855* (1.74)	0.986** (1.99)	0.833* (1.70)
N2NM	4.845*** (8.93)	4.815*** (9.08)	4.856*** (8.99)	4.830*** (9.13)	4.875*** (8.91)	4.827*** (9.01)	4.885*** (8.96)	4.842*** (9.06)
1VDIR	-1.182*** (-2.85)				-1.186*** (-2.86)			
3VDIR		-3.132*** (-5.37)				-3.110*** (-5.32)		
1TDIR			-1.343*** (-3.21)				-1.345*** (-3.21)	
3TDIR				-3.130*** (-5.38)				-3.106*** (-5.32)
WEDGE1			-0.048 (-0.07)				-0.085 (-0.13)	
WEDGE3				-2.052*** (-2.56)				-2.077*** (-2.59)
Q	-0.087 (-0.52)	-0.146 (-0.89)	-0.116 (-0.70)	-0.175 (-1.07)				
PBV					0.004 (0.27)	-0.001 (-0.11)	0.004 (0.21)	-0.002 (-0.15)
ROA	-0.012 (-0.15)	-0.362 (-0.45)	-0.043 (-0.05)	-0.264 (-0.33)	-0.231 (-0.29)	-0.538 (-0.69)	-0.188 (-0.24)	-0.478 (-0.62)
VOTE	0.838* (1.63)	0.801 (1.59)	1.299** (2.36)	1.192** (2.21)	0.825* (1.60)	0.790 (1.57)	1.271** (2.31)	1.161** (2.15)
AGE	0.204*** (6.60)	0.230*** (7.65)	0.210*** (6.79)	0.235*** (7.82)	0.198*** (6.63)	0.222*** (7.65)	0.202*** (6.79)	0.226*** (7.78)
LEVER	0.600 (1.26)	0.495 (1.06)	0.564 (1.19)	0.449 (0.95)	0.547 (1.15)	0.437 (0.94)	0.503 (1.06)	0.380 (0.81)
Intercept	-3.047 (-1.57)	-2.849 (-1.50)	-3.748* (-1.91)	-3.538* (-1.83)	-2.742 (-1.44)	-2.477 (-1.33)	-3.358* (-1.75)	-3.071 (-1.63)
R² within	0.391	0.414	0.397	0.419	0.391	0.413	0.397	0.417
Prob. (F)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Obs. (n)	823	823	823	823	823	823	823	823

Table 9. Determinants of firm-level CG with reduced CGI– OLS regressions

A reduced form of CGI, excluding questions 16, 17, and 18, is the dependent variable (CGI21). These questions were excluded because they're directly related to the concentration of control rights and cash flow rights held by controlling shareholders. The operational definition of all explanatory variables is presented in Table 3. Binary variables related to the firms' industry (IND) and year (YEAR) were included in the regressions below, being omitted from the tables due to space reasons. The sample is comprised of 823 firm-years observations for the 1998, 2000, 2002, and 2004. Figures between parentheses indicate *t* statistics. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% respectively. The coefficients were estimated through the Ordinary Least Squares method (OLS) with heterocedasticity-robust standard errors.

Reduced Corporate Governance Practices Index (CGI21)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GROWTH	0.039 (0.35)	0.064 (0.58)	0.058 (0.53)	0.079 (0.73)	0.039 (0.35)	0.063 (0.58)	0.059 (0.54)	0.078 (0.73)
TANG	0.001 (0.42)	0.001 (0.47)	0.001 (0.32)	0.001 (0.40)	0.001 (0.45)	0.001 (0.49)	0.001 (0.35)	0.001 (0.42)
SIZE	0.575*** (10.70)	0.564*** (10.43)	0.579*** (10.76)	0.567*** (10.49)	0.579*** (10.71)	0.568*** (10.44)	0.583*** (10.78)	0.571*** (10.52)
ADR23	0.851*** (4.05)	0.829*** (3.92)	0.852*** (4.02)	0.815*** (3.83)	0.885*** (4.20)	0.867*** (4.09)	0.885*** (4.16)	0.851*** (3.99)
N2NM	4.733*** (10.73)	4.712*** (10.75)	4.702*** (10.80)	4.688*** (10.78)	4.965*** (11.70)	4.958*** (11.78)	4.931*** (11.75)	4.933*** (11.81)
1VDIR	-0.465* (-1.74)				-0.441* (-1.66)			
3VDIR		-1.057*** (-3.04)				-1.013*** (-2.90)		
1TDIR			-0.650** (-2.37)				-0.633** (-2.32)	
3TDIR				-1.180*** (-3.35)				-1.139*** (-3.23)
WEDGE1			0.324 (0.70)				0.368 (0.80)	
WEDGE3				-0.305 (-0.64)				-0.240 (-0.50)
Q	0.287** (2.00)	0.303** (2.09)	0.284** (1.99)	0.303** (2.12)				
PBV					0.023 (1.22)	0.023 (1.14)	0.025 (1.31)	0.025 (1.26)
ROA	0.639 (0.79)	0.609 (0.76)	0.756 (0.93)	0.668 (0.83)	1.130 (1.49)	1.133 (1.50)	1.239* (1.64)	1.186 (1.58)
VOTE	-0.896*** (-3.06)	-0.933*** (-3.22)	-0.542 (-1.60)	-0.584* (-1.75)	-0.855*** (-2.93)	-0.888*** (-3.07)	-0.542* (-1.60)	-0.531 (-1.59)
AGE	0.001 (0.46)	0.001 (0.33)	0.001 (0.49)	0.001 (0.36)	0.001 (0.43)	0.001 (0.31)	0.001 (0.45)	0.001 (0.33)
LEVER	0.376 (1.23)	0.315 (1.02)	0.334 (1.09)	0.234 (0.76)	0.463 (1.54)	0.414 (1.38)	0.419 (1.36)	0.324 (1.06)
FAM	-0.132 (-0.67)	-0.164 (-0.85)	-0.178 (-0.90)	-0.222 (-1.14)	-0.148 (-0.75)	-0.181 (-0.93)	-0.195 (-0.98)	-0.239 (-1.22)
FOR	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>	<dropped>
SBH	0.789*** (4.12)	0.763*** (4.03)	0.769*** (4.03)	0.738*** (3.91)	0.788*** (4.11)	0.764*** (4.03)	0.767*** (4.01)	0.737*** (3.90)
SOE	0.118 (0.39)	0.155 (0.50)	0.045 (0.15)	0.058 (0.18)	0.059 (0.19)	0.092 (0.30)	-0.014 (-0.05)	-0.008 (-0.03)
Intercept	2.751*** (3.33)	3.560*** (3.92)	2.518*** (2.99)	3.397*** (3.72)	2.827*** (3.39)	3.610*** (3.95)	2.588*** (3.05)	3.443*** (3.75)
R²	50.9%	51.2%	51.2%	51.6%	50.7%	51.1%	51.1%	51.4%
Prob. (F)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Obs. (n)	823	823	823	823	823	823	823	823

Table 10. Determinants of firm-level corporate governance with reduced CGI index – Fixed-Effect regressions

A reduced form of CGI, excluding questions 16, 17, and 18, is the dependent variable (CGI21). These questions were excluded because they're directly related to the concentration of control rights and cash flow rights held by controlling shareholders. The operational definition of all explanatory variables is presented in Table 3. Binary variables related to the firms' industry (IND) and year (YEAR) were included in the regressions below, being omitted from the tables due to space reasons. The sample is comprised of 823 firm-years observations for the 1998, 2000, 2002, and 2004. Figures between parentheses indicate *t* statistics. ***, **, and * correspond to statistical significance at 1%, 5%, and 10% respectively. The coefficients were estimated through the Fixed-Effect procedures (FE).

Reduced Corporate Governance Practices Index (CGI21)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GROWTH	0.249* (1.69)	0.253* (1.74)	0.293** (2.02)	0.277** (1.92)	0.243* (1.66)	0.246* (1.70)	0.284** (1.96)	0.268** (1.86)
TANG	0.001 (1.27)	0.001 (1.26)	0.001 (1.31)	0.001 (1.28)	0.001 (1.27)	0.001 (1.27)	0.001 (1.31)	0.001 (1.28)
SIZE	0.206 (1.20)	0.269* (1.59)	0.214 (1.27)	0.272* (1.63)	0.201 (1.18)	0.262 (1.55)	0.207 (1.23)	0.263 (1.57)
ADR23	1.271*** (2.62)	1.164** (2.42)	1.278*** (2.67)	1.125** (2.36)	1.273*** (2.62)	1.169** (2.43)	1.281*** (2.67)	1.132** (2.37)
N2NM	4.604*** (8.72)	4.486*** (8.61)	4.622*** (8.88)	4.510*** (8.74)	4.614*** (8.66)	4.481*** (8.52)	4.630*** (8.81)	4.505*** (8.64)
1VDIR	0.089 (0.22)				0.081 (0.20)			
3VDIR		-1.910*** (-3.34)				-1.901*** (-3.31)		
1TDIR			-0.182 (-0.45)				-0.189 (-0.47)	
3TDIR				-1.907*** (-3.36)				-1.893*** (-3.33)
WEDGE1			2.001*** (3.20)				1.961*** (3.14)	
WEDGE3				-0.151 (-0.19)				-0.185 (-0.24)
Q	-0.105 (-0.65)	-0.132 (-0.82)	-0.155 (-0.97)	-0.178 (-1.12)				
PBV					-0.001 (-0.04)	-0.005 (-0.32)	-0.002 (-0.14)	-0.006 (-0.40)
ROA	-0.088 (-0.11)	-0.412 (-0.52)	0.048 (0.06)	-0.251 (-0.32)	-0.219 (-0.29)	-0.574 (-0.75)	-0.146 (0.19)	-0.473 (-0.63)
VOTE	-1.376*** (-2.75)	-1.344*** (-2.72)	-0.598 (-1.13)	-0.709 (-1.35)	-1.385*** (-2.77)	-1.350*** (-2.73)	-0.622 (-1.17)	-0.734 (-1.39)
AGE	0.208*** (6.92)	0.215*** (7.28)	0.218*** (7.32)	0.224*** (7.61)	0.202*** (6.97)	0.209*** (7.32)	0.210*** (7.30)	0.215*** (7.59)
LEVER	0.938** (2.02)	0.851** (1.85)	0.877** (1.91)	0.770* (1.68)	0.893** (1.93)	0.809* (1.77)	0.817* (1.79)	0.714 (1.57)
Intercept	-2.533 (-1.34)	-2.533 (-1.34)	-3.712** (-1.97)	-3.121* (-1.66)	-2.247 (-1.21)	-1.708 (-0.93)	-3.298** (-1.79)	-2.694* (-1.46)
R² within	0.393	0.405	0.410	0.417	0.392	0.405	0.410	0.416
Prob. (F)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Obs. (n)	823	823	823	823	823	823	823	823