Dual-Class Premium, Corporate Governance, and the Mandatory Bid Rule: Evidence from the Brazilian Stock Market

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Abstract

This paper conducts a systematic analysis of the determinants of the relative price difference between voting and non-voting shares ("dual-class premium") within the context of a mandatory bid rule. This rule implies that the acquirer of a control block is also obliged to offer minority shareholders the same (or partially the same) price for their shares. In the presence of the rule, the dual-class premium represents a premium for the likelihood for corporate takeovers. Our paper innovates in the sense that we focus not only on bid rules imposed by Brazilian legislation on all domestic firms, but also on such rules that are voluntarily granted by companies for their minority shareholders in conditions beyond what is legally required. We also use a broad corporate governance index in order to capture, on a firm-level basis, the effect of investor protection on the dual-class premium. The dual-class premium is positively related to the mandatory bid rule, suggesting a positive takeover premium. Further, the premium increases (decreases) in response to enhancement (lowering) of investor protection via regulatory alterations in the rule. The premium also is inversely related to the firm's corporate governance practices suggesting that poor corporate governance makes it more likely that the firm will be taken over. The results suggest that takeovers are more likely at firms with poor corporate governance provisions and weak takeover rules on mandatory bids.

Keywords: dual-class premium, corporate governance, mandatory bid rule, takeovers, Brazil.

JEL Classification: G18, G30, G32, G34, G38, K22.

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Abstract

This paper conducts a systematic analysis of the determinants of the relative price difference between voting and non-voting shares ("dual-class premium") within the context of a mandatory bid rule. This rule implies that the acquirer of a control block is also obliged to offer minority shareholders the same (or partially the same) price for their shares. In the presence of the rule, the dual-class premium represents a premium for the likelihood for corporate takeovers. Our paper innovates in the sense that we focus not only on bid rules imposed by Brazilian legislation on all domestic firms, but also on such rules that are voluntarily granted by companies for their minority shareholders in conditions beyond what is legally required. We also use a broad corporate governance index in order to capture, on a firm-level basis, the effect of investor protection on the dual-class premium. The dual-class premium is positively related to the mandatory bid rule, suggesting a positive takeover premium. Further, the premium increases (decreases) in response to enhancement (lowering) of investor protection via regulatory alterations in the rule. The premium also is inversely related to the firm's corporate governance practices suggesting that poor corporate governance makes it more likely that the firm will be taken over. The results suggest that takeovers are more likely at firms with poor corporate governance provisions and weak takeover rules on mandatory bids.

1. Introduction

The existence of private benefits of control has long been studied by the corporate finance literature. Since the early studies of Grossman and Hart (1980), Levy (1982), Lease, McConnell and Mikkelson (1983), a vast literature has emerged to measure such benefits in different countries and using diverse approaches. These benefits may be defined as those (pecuniary or non-pecuniary) which can be obtained by the controlling shareholders and are not shared by other investors. Despite this simple definition, private benefits of control are difficult to measure, because they are not easily observable; indeed, if they were, they would not be private since minority shareholders would claim them in court.

The literature has used two methods to try to quantify these benefits. The first one is to compare the prices paid by the acquiring party with the prevailing market price at the time of the block trade (Barclay and Holderness (1989), and Dyck and Zingales (2004)). The second method is to compare the prices of voting and non-voting (or with different voting power) shares of dual-class companies. There is a large empirical literature that estimates and analyzes the relative price difference between voting and non-voting shares for various countries: Levy (1982), Lease, McConnell and Mikkelsen (1983), DeAngelo and DeAngelo (1985), Jog and Riding (1986), Horner (1988), Megginson (1990), Bergstrom and Rydqvist (1990, 1992), Zingales (1994, 1995), Smith and Amoako-Adu (1995), Robinson and White (1995), Rydqvist (1996), Chung and Kim (1999), and Nenova (2003).

In the preceding literature, control benefits have been related to variables such as the dividend and liquidity differential between voting and non-voting shares, the ownership and control structure of the majority shareholders, corporate governance practices, and the presence of a "mandatory bid rule." This rule implies that the acquirer of a control block is also obliged to offer minority shareholders the same (or partially the same) price for their shares. The mechanism can generally be considered a protection of minority shareholders against the potential expropriation by the controlling shareholder or the bidder.

This paper complements existing work on the mandatory bid rule (Bebchuk (1994), Bergstrom, Hogfeldt, and Molin (1997), Bebchuk and Hart (2001), Burkart and Panunzi (2003), among others) by considering its influence on control benefits as represented by the dual-class premium. Note that in the presence of a mandatory bid rule, the price difference between voting

and non-voting shares represents a premium for corporate control in that it is related to the likelihood for corporate takeovers.

This paper innovates in the sense that we focus not only on bid rules imposed by legislation on all firms, but also on such rules that are voluntarily granted by companies for their minority shareholders in conditions beyond what is legally required. These conditions can be related to the price of the bid (higher than the minimum established by the law) and its extension to all classes of shares. To our knowledge, a similar analysis of the effects of the voluntarily granted bid rule on the dual-class premium has not been presented in the literature.

We are also the first to use a broad corporate governance index (CGI) in order to capture, on a firm-level basis, the effect of investor protection on the dual-class premium. The CGI is constructed following an approach that has recently become very popular in the literature (Black, Jang, and Kim (2004), Klapper and Love (2004), and Gompers, Ishii, and Metrick (2003)).

Empirical investigation of the dual-class premium exists for many developed and developing countries. However, there are only a few studies focusing on Brazil (Nenova (2001) and Saito (2003)). Using Brazilian data offers several important advantages. First, it provides an opportunity to perform a study for a country with one of the highest dual-class premia in the world (Dyck and Zingales (2004) and Nenova (2003)). The second advantage is that the sample size is much larger than in studies for other countries, since dual-class firms are more common in Brazil than in any other part of the world (Nenova (2003) and Doidge (2004)). Therefore, because of its unique features, the Brazilian market provides an excellent opportunity to study the determinants of the dual-class premium.

Dyck and Zingales (2004) use data on 412 block trades from 39 countries for an international comparison of private benefits. They find an average block premium of 14%, ranging from –4% in Japan to +65% in Brazil. Nenova (2003) uses a sample of 661 dual-class firms in 18 countries in 1997 and finds that the highest values of control-block votes are in South Korea (48%), Mexico (36%), Italy (29%), France (28%) and Brazil (23%). However, it is important to note that Brazil has the largest number of dual-class firms (141) in her study, which represents more than 20% of the sample. The number of dual-class firms in other countries with high control premium is 65 (South Korea), 5 (Mexico), 62 (Italy), and 9 (France). Doidge (2004) uses a sample of 745 dual-class firms from 20 countries to study the private benefits of control of

foreign companies that cross-list on U.S. exchanges. Brazil and South Korea are the countries with the largest number of dual-class firms in his sample, 167 and 144, respectively.

There are two closely related studies (Saito (2003) and Nenova (2001)) that analyze specifically the private benefits of control in Brazil. Saito (2003) investigates the dual-class premium in Brazil and finds that it is related to liquidity, dividend differential, ownership structure, and changes in the legislation of corporations. Nenova (2001) provides evidence that the control premium in Brazil is directly affected by changes in the legal protection for minority shareholders. The control premium tends to increase (decrease) when the law weakens (strengthens) minority shareholder protection.

Our results indicate that the dual-class premium in Brazil is very unstable over time, ranging from -67.67% to 580.00%, and is highly associated with the dividend differential, relative trading liquidity, controlling shareholder's stake of voting and non-voting shares, the quality of the firm's corporate governance, and the adoption (legally or voluntarily) of the bid rule for voting and non-voting shares.

We find that most Brazilian-listed companies (85% at the end of 2003) issue both classes of shares, and voting shares represent on average 59% of the total shares. As expected, the control is very concentrated and the use of non-voting shares leads to a huge separation of voting and cash flow rights. The largest shareholder has on average 72% of the voting shares but only 28% of the non-voting shares.

Consistent with Nenova (2003), non-voting shares are more liquid and receive higher or preferential dividends in Brazil. On average, there is a 5% to 10% discount on the dividends of voting shares relative to those of non-voting shares, which has a negative effect on the dual-class premium. Furthermore, since most voting shares are held by the controlling shareholders and are not traded on the stock exchange, there are always more non-voting shares than voting shares outstanding, which also affects negatively the dual-class premium.

Two tests confirm the hypothesis that the degree of protection provided to minority shareholders is inversely related to the dual-class premium (Nenova (2003), Dyck and Zingales (2004)). First, the firm-level corporate governance index has a significantly negative effect on the relative price of voting and non-voting shares. Second, we document that Brazilian firms that cross-list in the U.S. have lower dual-class premia (Doidge (2004)). Interestingly, our corporate governance index is more powerful than the simple inclusion of an ADR dummy in explaining

the dual-class premium, arguably because it captures a much broader range of corporate governance practices.

We also investigate the effects of the mandatory bid rule on the dual-class premium by looking at panel regression models and event studies. Our findings indicate that the dual-class premium is positively (negatively) associated with the mandatory bid rule for voting (non-voting) shares. The dual-class premium and the number of companies with positive dual-class premia are significantly higher when the bid rule for voting shares is legally required. When this rule is revoked by law amendments, the dual-class premium decreases substantially. Most importantly, the dual-class premium is significantly lower in companies that voluntarily grant the bid rule for non-voting shares.

Overall, the dual-class premium is related to the mandatory bid rule, suggesting a positive takeover premium. Within our sample period, there were two regulatory events changing the modalities of the mandatory bid rule. We find that the publication of the Law 9457/97, eliminating several rights of minority shareholders including the mandatory bid rule, coincides with a significant decrease in the dual-class premium. In contrast, the dual-class premium starts to increase near the publication of the Law 10303/01, which reestablished minority shareholders' rights and the mandatory bid rule.

We also find that the premium inversely related to the firm's corporate governance practices suggesting that poor corporate governance makes it more likely that the firm will be taken over. The results suggest that takeovers are more likely at firms with poor corporate governance provisions and weak takeover rules on mandatory bids.

The paper proceeds as follows. Section 2 provides the main characteristics of the Brazilian market of dual-class shares. In Section 3 we derive a theoretical model for the relation between the dual-class premium and the mandatory bid rule for minority shareholders. Section 4 introduces the main research hypotheses and the related literature. Section 5 describes the data and methodology. Section 6 contains the results of the panel data regressions and event studies. Section 7 discusses our findings and concludes.

2. The Brazilian Dual-Class Shares

2.1. Main Characteristics

Although Brazil is not the only country with dual-class shares, it deserves a specific analysis since shares with different voting rights are used extensively by many Brazilian companies. Furthermore, the Brazilian market of dual-class shares is very different from those of developed countries and other emerging markets in terms of legal, regulatory, and institutional factors.

Table 1 summarizes the list of 30 countries with the largest stock market capitalization and the number of companies with dual-class shares at the end of 2003. Although relatively small when compared to the U.S. and other major developed countries, Brazil has one of the largest stock market capitalizations (US$ 234 billion) among emerging markets. Most important for our analysis, the number of dual-class companies (184 out of 369) is the largest in the world, in both absolute and relative terms.

Most Brazilian-listed companies (85% at the end of 2003) have two classes of shares outstanding: common stock (with voting rights) and preferred stock (with non-voting rights). As shown in Table 2, voting shares represent on average 58.84% of the total shares, ranging from 33.33% - the minimum required by law - to 100%. We can also note that the ownership and control are very concentrated and the use of non-voting shares leads to a large separation of voting and cash flow rights. The largest shareholder has a mean (median) of 72.32% (77.42%) of the voting shares but only 27.67% (8.11%) of the non-voting shares. Therefore, voting shares generally have a smaller free-float and lower trading activity because they are held by the controlling shareholders.

2.2. Legislation Changes

The main differences between voting and non-voting shares in Brazil are stated by the Law 6404/76 ("Law of Corporations"), which had important amendments in 1997 (Law 9457/97) and in 2001 (Law 10303/01). It is important to note that the Brazilian law follows the French code tradition and seems to offer less protection to investors, both with regard to the written laws and their enforcement (La Porta et al. (1998)).

Law 6404/76 allows Brazilian companies to issue non-voting shares in an amount up to two-thirds of the total capital. This mechanism is used by firms to issue shares without relinquishing control and therefore is a way of separating ownership from control. In Brazil, the control of a

company can be guaranteed with only one-sixth of its total capital, when a company has one-third of voting shares and two-thirds of non-voting shares. In fact, a majority shareholder can guarantee control with much less than one-sixth of total capital through the use of pyramidal structures and cross-holdings.

Until its amendment in 1997, the Law 6404/76 established a mandatory bid rule in the case of a control transfer for all outstanding voting shares at the same price and terms as the control block. Non-voting shares were not subject to this mandatory bid under the Law 6404/76. In May 1997, the Law 9457/97 eliminated several rights of minority shareholders and revoked the mandatory bid rule for dispersed voting shares. It passed in order to facilitate the privatization program and enhance government revenues from selling State-owned companies by avoiding sharing the control sale with minority voting investors.

As a trade-off for the elimination of minority shareholder rights, non-voting shares were entitled to receive dividends that were at least 10% higher than those of voting shares. However, this 10% dividend premium was not mandatory for companies providing fixed or minimum dividends for non-voting shares[1].

In October 2001, the Law 10303/01, designed to minimize the negative impacts of the previous legislation, reestablished several rights for minority shareholders and reinstated the mandatory bid rule for voting shares for at least 80% of the control block price. Although non-voting shares remained not subject to the bid rule, the Law 10303/01 established that companies must grant one of the following rights for non-voting shares as a condition for trading on the stock market: (a) priority minimum dividend of 3% of the book value per share, (b) dividends 10% higher than those assigned to voting shares, (c) mandatory bid for at least 80% of the control block price. The Law 10303/01 also changed the maximum amount of non-voting shares from two-thirds to 50% of total capital, but this rule is mandatory only to non-public firms that decide to go public after the enforcement of the law and for new corporations.

The Law 6404/76 and its amendments as well as any voluntary action towards better corporate governance practices may have an impact on the dual-class premium, since they change minority shareholders' rights and the potential expropriation of private benefits by controlling shareholders.

[1] In Brazil, if the company fails to distribute dividends for three years in a row, non-voting shareholders acquire full voting rights until the company starts paying dividends.

Figures 1 and 2 plot the time-series of the dual-class premium and the proportion of firms with positive and negative dual-class premia from 1994 to 2004. During the regime of the Law 6404/76, the dual-class premium is positive and high, reaching the peak at the end of 1996. Most companies have positive dual-class premia during this period, which is characterized by the existence of mandatory bid rules only for voting shares and at 100% of the control block price.

The publication of the Law 9457/97, eliminating several rights of minority shareholders including the mandatory bid rule, coincides with a significant decrease in the dual-class premium. In general the dual-class premium is negative for most dual-class firms. Note that more than 70% of Brazilian companies had negative dual-class premia at the end of 1999.

In contrast, the dual-class premium starts to increase near the publication of the Law 10303/01, which reestablished minority shareholders' rights and the mandatory bid rule. The number of firms with positive dual-class premia grows substantially, however the dual-class premium does not reach the levels prior to the Law 9457/97. This may be related to the fact that the Law 6404/76 established a higher mandatory bid price (100%) when compared to the Law 10303/01 (80%). Another possible explanation is that some companies have voluntarily provided bid rules for non-voting shares, which has a negative effect on the dual-class premium.

In the next section, we derive a theoretical model for the relation between the dual-class premium and the mandatory bid rule for minority shareholders. The empirical results of the relation between the mandatory bid rule and the dual-class premium of Brazilian firms are shown in Section 6.

3. Dual-Class Premium and Mandatory Bid Rule: a Theoretical Model

In order to understand the relation between the dual-class premium and the mandatory bid rule for voting and non-voting shares, we consider a model along the lines of Bebchuk (1994) and Nenova (2001).

Consider a publicly traded company with dual-class shares[2] that, in period 0, has a controlling shareholder (incumbent) who owns a fraction α of voting shares (out of the total number of all shares). The fraction of voting and non-voting shares (out of the total number of all

[2] We consider only the case in which inferior voting shares have no voting power at all, although the model can be extended to consider the case in which both stocks have voting rights, but with different proportions.

shares) not owned by the controlling shareholder is α_v and α_{nv} respectively, so that $\alpha + \alpha_v + \alpha_{nv} = 1$.

There are three dates, t = 0, 1, and 2. At t = 0, the firm is owned by the controlling shareholder. At t = 1, a potential buyer may or may not acquire the control from the incumbent. At t = 2, the company is liquidated and its value is divided among its shareholders.

Under the incumbent's control, the total security value of the firm is S_i, while B_i is the private benefits extracted by the incumbent. If the buyer gains control, the total security value of the firm is S_b and the buyer's private benefit is B_b. For simplicity, we assume voting and non-voting shares have identical security value, and private benefits are not extracted at the expense of the security benefits[3].

3.1. No Mandatory Bid Rule

In the absence of a mandatory bid rule, minority shareholders do not participate in the control transaction. The incumbent is free to sell his control block at any price that the buyer wants to pay. Therefore, a necessary condition for a control transfer is that the block value under the buyer's control is equal to or greater than under the seller's, as indicated in the following proposition.

Proposition 1*: Under no mandatory bid rule a control transfer will occur if*

$$\alpha S_b + B_b \geq \alpha S_i + B_i \tag{1}$$

If the control transfer does not occur, the firm is liquidated at t = 2, and existing shareholders receive the following proceeds: $\alpha S_i + B_i$ for the controlling shareholder, $\alpha_v S_i$ for the minority voting shareholders, and $\alpha_{nv} S_i$ for the minority non-voting shareholders. If the control is sold, it is possible to derive the following corollary from Proposition 1.

Corollary 1*: Under no mandatory bid rule the price for a controlling block of α shares is*

$$P_{NOBID} = \lambda[\alpha S_i + B_i] + (1-\lambda)[\alpha S_b + B_b] \tag{2}$$

[3] The variables S_i, B_i, S_b and B_b are expressed in absolute rather than in per-share terms.

where λ and (1-λ), on the interval [0,1], are the bargaining powers of the buyer and incumbent, respectively.

As can be seen, the price has two components, which depend on the bargaining powers of the seller and the buyer. At t = 2, the firm is liquidated and the following proceeds accrue to the shareholders: $\lambda[\alpha S_b + B_b - \alpha S_i - B_i]$ for the buyer, $\alpha_v S_b$ for the minority voting shareholders, and $\alpha_{nv} S_b$ for the minority non-voting shareholders.

3.2. Mandatory Bid Rule for Minority Voting Shares

Under the mandatory bid rule, the buyer may acquire the control block but is also obliged to offer minority shareholders the same (or partially the same) price for their shares. Let D_v, on the interval [0,1], be the discount of the minority voting shares bid relative to the block price.

If there is a mandatory bid rule for minority voting shareholders, a condition for a control transfer is that the block value under the buyer's control is equal to or greater than under the seller's in addition to the purchase of all dispersed voting shares at a discount D_v relative to the block price.

Proposition 2*: Under the mandatory bid rule for minority voting shares a control transfer will occur if*

$$(\alpha + \alpha_v)S_b + B_b \geq \alpha S_i + B_i + \alpha_v(1 - D_v)\left(\frac{\alpha S_i + B_i}{\alpha}\right) \tag{3}$$

The two terms on the right-hand side of Equation (3) capture the block value under the seller's control and the purchase of all minority voting shares at a discount D_v relative to the block price.

It is important to note that minority shareholders have the right to sell their shares (put option), but are not obliged to tender them. They will not sell their shares if

$$S_b > (1 - D_v)\left(\frac{\alpha S_i + B_i}{\alpha}\right) \tag{4}$$

since their stake value under the buyer' control is greater than the mandatory bid price they would get. In this case, despite the existence of the mandatory bid rule, there is no acquisition of shares other than the control block, and the condition for the control transfer is given by Equation (1) instead of Equation (3). The following corollary obtains from Proposition 2.

Corollary 2*: Under the mandatory bid rule for minority voting shares the price for a controlling block of α shares is*

$$P_{BIDV} = \lambda\left[\alpha S_i + B_i\right] + (1-\lambda)\left[(\alpha+\alpha_v)S_b + B_b - \frac{\alpha_v}{\alpha}(1-D_v)P_{BIDV}\right] \tag{5}$$

From Equations (2) and (5), the price for a controlling block of α shares can alternatively be written as

$$P_{NOBID} = P_{BIDV}\left[1 + (1-\lambda)\frac{\alpha_v}{\alpha}(1-D_v)\right] - (1-\lambda)\alpha_v S_b \tag{6}$$

Since minority voting shareholders sell their shares only if $S_b < (1-D_v)\left(P_{BIDV}/\alpha\right)$ the price for a controlling block of α shares is lower under the mandatory bid rule for minority voting shares ($P_{NOBID} > P_{BIDV}$). This is because minority shareholders also get (partially) the incumbent's compensation for the forgone private benefits.

3.3. Mandatory Bid Rule for Minority Voting and Non-Voting Shares

The condition for a control transfer under the mandatory bid rule for minority voting and non-voting shares can be derived from the above discussion. In such an environment, a control transfer takes place if, as before, it is mutually beneficial to the buyer and incumbent, and if the buyer earns a profit when purchasing all dispersed voting and non-voting shares at a discount D_v and D_{nv}, on the interval [0,1], relative to the block price, respectively.

Proposition 3*: Under the mandatory bid rule for minority voting and non-voting shares a control transfer will occur if*

$$(\alpha+\alpha_v+\alpha_{nv})S_b + B_b \geq \alpha S_i + B_i + \alpha_v(1-D_v)\left(\frac{\alpha S_i + B_i}{\alpha}\right) + \alpha_{nv}(1-D_{nv})\left(\frac{\alpha S_i + B_i}{\alpha}\right) \tag{7}$$

Minority shareholders will not sell their shares if their stake value under the buyer' control is greater than the mandatory bid price or, more formally, if

$$S_b > (1 - D_v)\left(\frac{\alpha S_i + B_i}{\alpha}\right) \text{ for minority voting shares} \tag{8a}$$

$$S_b > (1 - D_{nv})\left(\frac{\alpha S_i + B_i}{\alpha}\right) \text{ for minority non-voting shares} \tag{8b}$$

In this case, the condition for the control transfer is given by Equation (1) instead of Equation (7). If the control transfer occurs under the mandatory bid rule for minority voting and non-voting shares, it is possible to derive the following corollary from Proposition 3.

Corollary 3*: Under the mandatory bid rule for minority voting and non-voting shares the price for a controlling block of α shares is*

$$P_{BIDVNV} = \lambda[\alpha S_i + B_i] + (1-\lambda)\left[(\alpha + \alpha_v + \alpha_{nv})S_b + B_b - \frac{\alpha_v}{\alpha}(1 - D_v)P_{BIDVNV} - \frac{\alpha_{nv}}{\alpha}(1 - D_{nv})P_{BIDVNV}\right] \tag{9}$$

From Equations (2) and (9), the price for a controlling block of α shares can alternatively be written as

$$P_{NOBID} = P_{BIDVNV}\left\{1 + (1-\lambda)\left[\frac{\alpha_v}{\alpha}(1 - D_v) + \frac{\alpha_{nv}}{\alpha}(1 - D_{nv})\right]\right\} - (1-\lambda)(\alpha_v + \alpha_{nv})S_b \tag{10}$$

Since minority voting and non-voting shareholders sell their shares only if $S_b < (1 - D_v)(P_{BIDVNV}/\alpha)$ and $S_b < (1 - D_{nv})(P_{BIDVNV}/\alpha)$, respectively, the price for a controlling block of α shares is lower under the presence of the mandatory bid rule ($P_{NOBID} > P_{BIDVNV}$).

3.4. A Numerical Example

The following example should give a better understanding of the model and the steps required to solve it. Consider a dual-class firm with a total of 100 shares. For the purpose of a real case of the Brazilian stock market, we assume a share structure of one-third of voting shares (34) and two-thirds of non-voting shares (66). We also assume the controlling shareholder has

50% + 1 of the voting shares (18). Note that the controlling shareholder keeps control with only 18% of ownership stake.

There is a potential buyer who may or may not acquire the control from the incumbent. For simplicity, we assume the security value of voting and non-voting shares is the same (10.00 per share) and does not change if the buyer gains control. We also assume that the total private benefits of control are 36.00 (for the controlling shareholder) and 54.00 (for the buyer), which represent a control premium relative to the dispersed shares of 20% and 30%, respectively. The share structure of the firm is

Shares	# of Shares	Share Price	Value	Buyer's Private Benefit	Implied Share Price	Total Value
Control Voting	18	10.00	180.00	54.00	13.00	234.00
Minority Voting	16	10.00	160.00	-	10.00	160.00
Minority Non-Voting	66	10.00	660.00	-	10.00	660.00
Total	100		1,000.00			1,054.00

According to Proposition 1, in the absence of a mandatory bid rule, a necessary condition for a control transfer is that the block value under the buyer's control (18*10.00 + 54.00 = 234.00) is equal to or greater than under the seller's (18*10.00 + 36.00 = 216.00), which is our case.

The price for the controlling block of 18 shares depends on the bargaining powers of the incumbent and the buyer

$$P_{NOBID} = \lambda[18*10.00 + 36.00] + (1-\lambda)[18*10.00 + 54.00]$$

which can vary from 216.00 (12.00 per share) when λ = 1 to 234.00 (13.00 per share) when λ = 0. In the absence of a mandatory bid rule, minority voting shares and non-voting shares do not participate in the control transaction and their prices remain at the same level (10.00 per share). The control premium ranges from 20% to 30% relative to the dispersed shares, and there is no price difference between minority voting and non-voting shares. This is shown in Panel A of Table 3.

Brazilian law requires a mandatory bid for minority voting shareholders at a price of 80% of the control block price, which implies a discount of 20%. Since the value under the buyer's control $[(18+16)*10.00 + 54.00 = 394.00]$ is greater than under the seller's in addition to the

purchase of all voting shares $\left[18*10.00+36.00+16*(1-20\%)(18*10+36.00)/18=369.60\right]$, the condition on Proposition 2 is met and the control transfer can occur. The price for the controlling block of 18 shares is

$$P_{BIDV}=\lambda\left[18*10.00+36.00\right]+(1-\lambda)\left[(18+16)*10.00+54.00-\frac{16}{18}(1-20\%)P_{BIDV}\right]$$

which can vary from 216.00 (12.00 per share) when λ = 1 to 230.26 (12.79 per share) when λ = 0. Minority voting shares are able to participate in the control transaction and their prices are 80% of the control price, ranging from 9.60 per share when λ = 1 to 10.23 per share when λ = 0. We assume the security value of minority shares (10.00 per share) does not change if the buyer gains control. Therefore, minority voting shareholders will sell their shares only if the bid price is at least 10.00 per share. In our example, minority voting shareholders will not tender when λ > 0.50. It is important to note that under the mandatory bid rule for only minority voting shares, the price difference between voting and non-voting shares may increase from 0% to 2.30% in our example, as can be seen in Panel B of Table 3.

Consider now a mandatory bid rule for minority voting and non-voting shares, both at a price of 80% of the control block. The condition stated in Proposition 3 is met since the value under the buyer's control $\left[(18+16+66)*10.00+54.00=1{,}054.00\right]$ is greater than under the seller's in addition to the purchase of all dispersed voting and non-voting shares with a 20% discount $\left[18*10.00+36.00+(16+66)(1-20\%)(18*10+36.00)/18=1{,}003.20\right]$. The price for the controlling block of 18 shares is

$$P_{BIDVNV}=\lambda\left[18*10.00+36.00\right]+(1-\lambda)\left[(18+16+66)*10.00+54.00-\frac{16}{18}(1-20\%)P_{BIDVNV}-\frac{66}{18}(1-20\%)P_{BIDVNV}\right]$$

which can vary from 216.00 (12.00 per share) when λ = 1 to 226.94 (12.61 per share) when λ = 0. Minority voting and non-voting shares are able to participate in the control transaction and their prices are 80% of the control block price, ranging from 9.60 per share when λ = 1 to 10.09 per share when λ = 0. Since we assume that the security value of dispersed shares does not change if the buyer gains control, minority shareholders will not tender their shares if the bid price is lower than 10.00 per share (λ > 0.50), as shown in Panel C of Table 3.

It is important to note that, when there is a mandatory bid rule for both voting and non-voting shares, the price difference between them tends to decrease. In our example, since we assume that the price is constant (10.00 per share) and the mandatory bid rule has the same discount (20%) for both classes of shares, the price difference between voting and non-voting shares decreases and remains at 0%.

4. Hypotheses

The empirical literature (Barclay and Holderness (1989), Lease, McConnell and Mikkelsen (1983), DeAngelo and DeAngelo (1985), Megginson (1990), Bergstrom and Rydqvist (1990, 1992), Zingales (1994, 1995), Smith and Amoako-Adu (1995), Nenova (2003), Dyck and Zingales (2004), among others) provides support for the existence of private benefits of control, which are found to depend on different kinds of variables. In this section, a more formal discussion of the determinants of the dual-class premium is presented to form a set of testable research hypotheses about the dual-class premium in Brazil.

4.1. Mandatory Bid Rule for Minority Shareholders

From the model described in Section 3, we can derive directly three hypotheses regarding the relation between the dual-class premium and the mandatory bid rule. In Brazil, the Law 6404/76 established a mandatory bid rule only for voting shares at 100% of control block price. The Law 9457/97 revoked the mandatory bid for dispersed voting shares, while the Law 10303/01 reinstated the mandatory bid for voting shares for at least 80% of the control block price.

The mandatory bid rule redistributes part of the control transfer gains to the dispersed shareholders, so it should have a positive impact on the share price. Since the mandatory bid under the Brazilian law is required only for voting shares, our first hypothesis is that the dual-class premium tends to decrease when the bid rule is revoked and to increase when it is reinstated.

Hypothesis 1*: The dual-class premium is negatively related to the Law 9457/97 and positively related to the Law 10303/01.*

Although the law requires the mandatory bid only for voting shares at a 20% discount relative to the control price, some Brazilian companies (46 at the end of 2004) voluntarily grant the bid rule in conditions beyond what is legally required. These conditions can be related to the price of the bid (higher than 80%) and its extension to non-voting shares.

Therefore, besides the legally required bid rule for voting shares, we also investigate the voluntary bid rules stated in the corporate charters. If the mandatory bid is only for voting shares, the dual-class premium tends to increase. In contrast, a mandatory bid rule for non-voting shares should have a negative effect on the dual-class premium.

Hypothesis 2*: The dual-class premium is positively related to the voluntary adoption of bid rules for voting shares.*

Hypothesis 3*: The dual-class premium is negatively related to the voluntary adoption of bid rules for non-voting shares.*

4.2. Dividend Differential

The dual-class premium should also be influenced by different characteristics of the voting and non-voting shares, such as the differential dividend payment. The practice of granting non-voting shares a preferential dividend treatment as a trade-off for the restriction in the voting rights is very common in Brazil. Nenova (2003) provides evidence that low voting (or non-voting) shares receive higher or preferential dividends in many countries and that this dividend preference reduces the dual-class premium. This argument leads to the next hypothesis.

Hypothesis 4*: The dual-class premium is positively related to the dividend ratio of voting shares and non-voting shares.*

4.3. Liquidity

Another important characteristic that may influence the dual-class premium is relative liquidity. In general, voting shares tend to have a smaller free-float and lower trading activity

because they are held by the controlling shareholders. Amihud and Mendelson (1988) show that asset prices are positively related to liquidity. The fact that voting shares are less liquid than non-voting shares implies that the dual-class premium would be lessened by the lower trading activity of voting shares. Smith and Amoaku-Adu (1995) and Nenova (2003) document that the relative trading liquidity of non-voting shares to voting shares is inversely related to the dual-class premium.

In Brazil, there are two reasons for the lower liquidity of non-voting shares when compared to voting shares. First, the issuance of a large proportion of non-voting shares is very common in most companies, and is used to separate control from ownership. Second, most voting shares do not trade because they are highly concentrated and are hold in a block by the largest shareholders. The following two hypotheses are closely related and attempt to capture the trading liquidity effect on the dual-class premium.

Hypothesis 5*: The dual-class premium is positively related to the trading liquidity ratio of voting shares and non-voting shares.*

Hypothesis 6*: The dual-class premium is positively related to the ratio of voting shares to total shares issued by the company.*

4.4. Corporate Governance

Zingales (1994, 1995) argues that the private benefits of control are large in Italy because the legal system is ineffective in preventing expropriation. Nenova (2003) and Dyck and Zingales (2004) provide empirical support for these arguments in a cross-country analysis. They find that the degree of protection provided to minority shareholders is inversely related to the value of control. La Porta et al. (2000) find a significant relation between legal protection of shareholder rights and prevalent corporate governance practices.

Furthermore, there is evidence that takeovers are more likely at firms with poor performance records (Morck, Shleifer, and Vishny (1989), Lang, Stulz, and Walkling (1989), and Mulherin and Poulsen (1998)). Takeovers might be motivated by poor performance, but there are different

views about their effects. Black (1992), Nesbitt (1994), and Pozen (1994) suggest that shareholder activities, such as corporate governance, have positive valuation effects.

We argue that firms with low quality of corporate governance are more likely to be taken over, which should lead to a higher dual-class premium. Burkart, Gromb, Panunzi (1998) suggest that the issuance of non-voting shares, a poor corporate governance practice used by most Brazilian firms, may be desirable because it leads to a higher takeover probability and increases benefits in takeovers. Charter provisions as well as takeover regulations can affect the likelihood of a control contest (Harris and Raviv (1988)). Evidence reported by Nenova (2003) and Dyck and Zingales (2004) indicates that the value of control-block votes is expected to decrease with better corporate governance provisions and takeover rules on pricing and mandatory offers.

In Brazil, although all the companies are subject to the same legislation (Law 6404/76 and its amendments), their corporate governance practices can differ substantially since corporate charter provisions can establish additional rights for minority shareholders. In order to measure the quality of the firm's corporate governance practices, and to account for the differences of the corporate charter provisions among firms, we construct a broad firm-level corporate governance index (CGI) following an approach that has recently become very popular in the literature (Black, Jang, and Kim (2004), Klapper and Love (2004), and Gompers, Ishii, and Metrick (2003)). The detailed description of the CGI is presented in Section 5.4. Hypothesis 7 can be derived directly from the above argument.

***Hypothesis** 7: The dual-class premium is negatively related to better corporate governance practices.*

Another way to capture the effects of the firm's corporate governance on the dual-class premium is related to the issuance of American Depositary Receipts (ADRs). There is evidence (Coffee (1999), Stulz (1999), Greene et al. (2000), and Doidge (2004)) that foreign companies that cross-list on U.S. exchanges have dual-class premia that are significantly lower. The intuition is that cross-listing in the U.S. improves the protection of minority investors and decreases the private benefits that controlling shareholders can extract because the U.S. regulation commits firms to provide fuller disclosure and respect minority shareholder rights.

Hypothesis 8*: The dual-class premium is negatively related to cross-listing in the U.S.*

4.5. Ownership and Control Structure

Since the early contributions of Jensen and Meckling (1976), and Morck, Shleifer, and Vishny (1988), the literature has documented that there are both costs and benefits associated with the concentration of ownership (cash flow rights) and control (voting rights). The presence of controlling shareholders may be harmful to the firm because their interests may not align with those of minority shareholders (Shleifer and Visnhy (1997), and La Porta et al. (1998, 2000, 2002)). On the other hand, the presence of controlling shareholders may mitigate the free rider problem of monitoring management, and hence reduce agency costs.

Bebchuk (1994) and Stiglitz (1985) argue that ownership concentration may decrease the firm value when majority shareholders have the possibility to expropriate minority shareholders. This expropriation may be facilitated by the use of dual class-shares (Grossman and Hart (1988), and Harris and Raviv (1988)).

Bebchuk (1999) points out that the expropriation is less costly when the concentration of cash flow rights is accompanied by a more than proportional increase in voting rights. Megginson (1990) argues that the higher the major shareholder's stake in non-voting shares, the greater the incentive to protect non-voting shareholders.

Shleifer and Vishny (1997), La Porta et al. (1998, 2000, 2002), and Claessens et al. (2002) suggest that greater cash flow rights are associated with greater firm valuation. In contrast, concentration of control rights and the separation of voting from cash flow rights have a negative effect on firm value, because it may result in the expropriation of outside shareholders. Gompers, Ishii, and Metrick (2004) study a large sample of dual-class companies in the U.S. and find that firm value increases with cash flow ownership and decreases with voting ownership. Our last three hypotheses reflect this discussion.

Hypothesis 9*: The dual-class premium is positively related to the controlling shareholder's stake of voting shares.*

***Hypothesis 10**: The dual-class premium is negatively related to the controlling shareholder's stake of non-voting shares.*

***Hypothesis 11**: The dual-class premium is positively related to the controlling shareholder's ratio of voting shares to total shares.*

5. Data and Methodology

5.1. Sample

The sample consists of all firms that have voting and non-voting shares traded on the Sao Paulo stock exchange from (some portion of) January 1994 to December 2004. Most of the data come from the Economatica, a financial database that contains a wide coverage of Brazilian stock market data, and Datastream. The information on the shareholding structure and corporate charters provisions comes from the Infoinvest database, which gathers data directly from the Brazilian Securities and Exchange Commission (CVM).

The sample does not include companies with incomplete or unavailable information, and firms whose shares were not traded on the stock market during the 1994-2004 period. The final sample consists of a total of 141 firms, which represent 39% of the number of firms and 72% of total market capitalization of the Sao Paulo stock exchange at the end of 2004.

5.2. Variables Definitions

Following Zingales (1995), the dual-class premium (*DCP*) is defined as the relative price difference between voting (P_v) and non-voting shares (P_{nv}).

$$DCP = \frac{P_v - P_{nv}}{P_{nv}}$$

Monthly share prices are used for each class during the 1994-2004 period. In order to construct the monthly observations, we aggregate volumes over the calendar month and use prices from the last day of the month on which non-zero trades are recorded for voting and non-

voting shares. From the discussion in Section 4, we argue that the relation between the dual-class premium and its determinants can be expressed as

$$DCP = f\,(Law97,\ Law01,\ DBidVot,\ DBidNon,\ BidVot,\ BidNon,\ Dividend,\ Liquidity,\ Vot/Tot,\ CGI,\ ADR,\ 1Vot,\ 1Non,\ 1Vot/Tot,\ Control\ Variables)$$

where *Law97* is a dummy variable that takes the value 1 under the Law 9457/97 regime, *Law01* is a dummy variable that takes the value 1 under the Law 10303/01 regime, *DBidVot* is a dummy variable that takes the value 1 if the firm voluntarily grants the bid rule for voting shares, *DBidNon* is a dummy variable that takes the value 1 if the firm voluntarily grants the bid rule for non-voting shares, *BidVot* is the bid price for voting shares, *BidNon* is the bid price for non-voting shares, *Dividend* is the dividend differential between voting and non-voting shares, *Liquidity* is the liquidity differential between voting and non-voting shares, *Vot/Tot* is the ratio of voting shares to total shares, *CGI* is the corporate governance index, *ADR* is a dummy variable that takes the value 1 if the firm cross-lists in the U.S., *1Vot* is controlling shareholder's direct stake of voting shares, *1Non* is the controlling shareholder's direct stake of non-voting shares, and *1Vot/Tot* is the controlling shareholder's ratio of voting shares to total shares.

The above functional relation will be expressed in a regression form and estimated in Section 6. In order to test our hypotheses, we need to control for firm characteristics that may have effects on the dual-class premium, especially those that can affect the likelihood of private benefits extraction. Previous evidence by Zingales (1994, 1995), Smith and Amoaku-Adu (1995), Chung and Kim (1999), Nicodano and Sembenelli (2000), Nenova (2003), Dyck and Zingales (2004), and Gutierrez and Tribo (2004) provide support that private benefits of control are potentially affected by firm-specific characteristics, such as industry, company size, leverage, risk, return on assets (ROA), Tobin's Q, and the identity of the controlling shareholder. Therefore, we also control for these variables to ensure that the estimates of the dual-class premium are comparable across firms. Table 4 provides a description of the variables used in this study.

5.3. Summary Statistics

Table 5 reports the time-series evolution of the dual-class premium and the number of companies included in the sample from 1994 to 2004. Note that the sample size grows over time, from 74 dual-class firms in 1994 to 104 in 2004, which can be attributed to the more availability of information in recent years.

A few observations can be made from these statistics. We can divide the period into three sub-periods according to the legislation changes in Brazil: under the Law 6404/76, after the Law 9457/97, and after the Law 10303/01. In the first sub-period, the mean and median dual-class premium (ranging from 11.95% to 35.13% and from 6.20% to 9.50%, respectively) are positive and higher than those in other sub-periods. The minimum and maximum dual-class premium are -67.67% and 580.00%, respectively, and about 60% of the companies have positive premia. These large and positive dual-class premia may be related to the mandatory bid rule only for minority voting shares at 100% of the control block price.

Under the regime of the Law 9457/97, which revoked the mandatory bid for voting shares, the mean and median dual-class premia drop and present negative values. The mean ranges from –8.70% to 14.81% and the median ranges from -9.36% to –0.57%. The maximum dual-class premium drops from 580.00% to 307.09%. The proportion of companies with negative dual-class premia increases significantly, reaching 73% at the end of 1999.

In contrast, the dual-class premium starts to grow near the publication of the Law 10303/01, which reestablished minority shareholders' rights and the mandatory bid rule for voting shares. The mean ranges from –1.80% to 8.85% and the median ranges from –5.00% to -1.01%. Although the median dual-class premium remains negative, we note an increase in its value and in the proportion of firms with positive dual-class premia. However, the dual-class premium does not reach the levels prior to the Law 9457/97, possibly because the minimum mandatory bid price for voting shares is 80% (Law 10303/01) instead of the previous 100% (Law 6404/76). Furthermore, an increasing number of companies have voluntarily granted the bid rule for non-voting shares, which should decrease the dual-class premium.

Panel B of Table 5 reports the tests of differences between means and medians of the dual-class premium when the bid rule is mandatory (from 1994 to 1996 and from 2001 to 2004) and when it is revoked (from 1997 to 2000). We can note that the mean and median dual class premium is significantly higher in the presence of the 100% bid rule for voting shares (26.84%

and 7.99%, respectively) when compared to the period without the bid rule (0.21% and –6.64%, respectively).

The difference in means and medians of the dual class-premium between 1997 to 2000 and 2001 to 2004 is statistically significant at the 5% and 10% levels, respectively. The mean (median) dual class-premium after the reestablishment of the mandatory bid rule significantly increases from 0.21% (–6.64%) to 4.93% (-2.15%).

Note that the significance level is higher in the comparison between 1994-1996 and 1997-2000 than that between 1997-2000 and 2001-2004. Two possible explanations are the lower mandatory bid price and the increasing number of voluntary bid rules for non-voting shares. We can conclude from Table 5 that the dual-class premium is unstable over time, and may be affected by the legislation changes during the period.

The sample characteristics of the firms are reported in Table 6, which displays means and medians of selected variables included in our analysis from 1994 to 2004. As expected, there is a differential dividend payment between the two classes of shares. On average, the dividends on voting shares are lower than those of non-voting shares, ranging from a discount of –9.60% in 1994 to –5.17% in 2004. This is consistent with the evidence that non-voting shares receive higher or preferential dividends in many countries (Nenova (2003)).

The issuance of non-voting shares is common in Brazil, and voting shares in our sample represent about 50% of the total number of shares (ranging from 47.99% in 1994 to 52.21% in 2004). Since most of these shares are held by the controlling shareholders, they are not traded on the stock exchange and there are always more non-voting shares than voting shares outstanding. In our sample, the median trading liquidity of voting shares ranges from 9% (1994) to 13% (2004) of that of non-voting shares[4].

Our results show a high degree of concentration of voting capital. In 1994, the largest shareholder owned on average 55.50% of the voting shares, but only 24.78% of the non-voting shares. In 2004, the controlling shareholder's portion of voting and non-voting shares grew to

[4] It is important to note that the mean trading liquidity differs substantially from the median and indicates that voting shares are more liquid. These results are apparent and biased by a few firms with a large number of voting shares outstanding. When we exclude these outliers (not reported), the mean and median present similar values and both indicate that the trading liquidity of non-voting shares is about 9 times higher than that of voting shares. Alternatively, we also use the monthly turnover - number of shares traded in a month as a percentage of total shares outstanding - as a proxy for trading liquidity in our panel regression models, and find similar results (not reported).

63.59% and 38.69%, respectively. When we consider the five largest shareholders, the mean stake of voting and non-voting capital is 84.20% and 48.07%, respectively.

Not surprisingly, the voting rights differ substantially from cash flow rights, consistent with the dual-class structure being employed to increase control. The separation of control and ownership can be measured by the controlling shareholders' ratio of voting rights to cash-flow rights, which slightly decreased from 1.58 in 1994 to 1.40 in 2004, but is still substantially higher than the one share-one vote rule[5].

We can also see the identity of the controlling shareholders in Brazil. Most companies are family-owned, however the opening process of the Brazilian economy and mass privatizations in the 90's enabled the entrance of foreign investors. As a consequence, the proportion of foreign-controlled companies increased from 18% in 1994 to 33% in 2004, while government-owned companies decreased from 27% to 12% during the same period. Despite a slight decrease since 1994, the proportion of companies controlled by institutional investors (banks, insurance companies, pension funds, foundations or mutual funds), remained around 18%.

We can also note the legislation impact on the mandatory bid price for voting and non-voting shares. Under the Law 6404/76, there was a mandatory bid rule for voting shares at 100% of the control price, which was revoked in 1997 and reestablished at 80% in 2001. Since 2002, some companies have voluntarily granted bid rules beyond what is legally required, both in terms of a bid price higher than 80% and its extension to non-voting shares. The average bid price for voting shares is 100% in 1994, drops to 0% in 1998, and increases to 81.16% in 2004[6]. In contrast, there was no mandatory bid for non-voting shares until 2002. Although the median bid price for non-voting shares remains at 0% during the whole period, the mean increases to 4.16% (2003) and 11.93% (2004), indicating that there are a few firms granting the bid rule for non-voting shares.

[5] Since most voting shares are held by the controlling shareholders, we are tempted to assume that the voting rights of dispersed voting shares are not valuable. The motivation is that small voting shareholders do not find it worth their time to attend the corporate meeting. However, the Brazilian legislation establishes that, if dispersed voting shareholders own individually or together 15% of the total voting shares, they are eligible to elect one member to the Board of Directors.

[6] Note that the average bid price for voting shares in 2002 is 67.06%, slightly lower than the 80% required by the Law 10303/01. In contrast, the median bid price for voting shares in 2002 is 80.00%. This is due to the fact that, although the bill was approved in October 2001, it was effective only four months later. So, the bid price for voting shares in the two first months of 2002 was generally 0.00% for most firms.

Table 6 reveals that Brazilian firms are moderately leveraged, ranging from 48.15% in 1994 to 66.02% in 2004. The mean value of Tobin´s Q increased from 0.85 to 1.21, while average ROA decreased from 5.24% to 2.84% in 2004. At the end of 2004, the average market value of equity was R$ 5.6 billion (equivalent to US$ 2.1 billion).

5.4. Corporate Governance Index

There has been a long debate in the literature on how to measure the quality of a firm's corporate governance. In order to provide a comprehensive description of firm-level corporate governance in Brazil, we construct a corporate governance index (CGI), following an approach that has recently become very popular in the literature (Black, Jang, and Kim (2004), Klapper and Love (2004), Gompers, Ishii, and Metrick (2003))[7].

The CGI consists of 15 questions, covering 4 broad categories: disclosure, board composition and functioning, conflicts of interest and shareholder rights. The number of questions is set so that it is neither too small, which would not capture the multivariate nature of corporate governance, nor too large, which would render data gathering difficult and subjective.

The CGI is not survey-based, so that all questions can be answered objectively from public information such as company charters and annual reports. Each question can have 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 15. The four index categories (further referred as "sub-indices") are simply for presentation purposes and there is no weighting across questions. Table 7 shows the CGI index and its four sub-indices.

5.4.1. Disclosure

The disclosure sub-index contains four items: disclosure date of financial reports, utilization of an international accounting standard (U.S. or IASB GAAP), quality of the auditing firm, and disclosure compensation of board members and top executives. Klapper and Love (2004) and

[7] Leal and Carvalhal da Silva (2005a, 2005b) construct two similar corporate governance indices for a different sample of Brazilian companies from 1998 to 2003.

Doidge et al. (2004) provide evidence that foreign firms with shares listed in the U.S. tend to have a higher firm value because they must adopt international accounting standards and meet a number of requirements that make them disclose more information and be more transparent.

The quality and the reputation of the external auditor as well as disclosing executive compensation can also convey important information about the firm. Michaely and Shaw (1995) find that U.S. IPOs that perform better in the long run have more prestigious auditors. Newman et al. (2003) find that investment levels are greater in countries where penalties for auditor failures are hard. Barton (2005) provides evidence that firms more visible in the capital markets tend to be more concerned about engaging highly reputable auditors in order to build and preserve their own reputations for credible financial reporting. Shleifer and Vishny (1997) find a weak but positive relation between firm performance and executive compensation, while Hermalin and Weisbach (2003) provide evidence that firms with weaker governance practices tend to pay a higher compensation to CEOs.

In 2004, 98% of Brazilian firms produced their financial reports by the legally required date, 39% used international accounting standards, 83% used one of the leading global auditing firms[8], and 91% disclosed information about their CEO and board members' compensation.

5.4.2. Board Composition and Functioning

The second sub-index is related to board composition and functioning and contains four items: independence of the board of directors, different CEO and Chairman of the Board, presence of board monitoring committees and permanent "fiscal board".

Since the board of directors is responsible for monitoring management, an independent board can be considered a mechanism to prevent governance malpractices. Rosenstein and Wyatt (1990), Agrawal and Knoeber (1996), Gillette et al. (2003), and Black, Jang, and Kim (2004) find a positive relation between the presence of outside directors on the board and firm valuation.

In order to determine the independence of the board of directors, we analyze if the board members are related to the controlling shareholders (for example, belonging to the same family or being their employees). We also check if key executives and board members are different. Although Brazilian law allows up to one-third of the board members to belong to the company's

[8] For the purpose of this paper, only the former "Big 6" are considered leading global auditing firms: KPMG, Price Waterhouse, Coopers & Lybrand, Arthur Andersen, Ernst & Young, and Deloitte, Touche & Tohmatsu.

management, we only classify as having an independent board those firms with different executives and board members. We also investigate if the CEO and the Chairman of the Board of Directors are the same person, suggesting that such firms are less likely to remove the CEO, because of his influence not only on senior management, but also on other board members.

John and Senbet (1998) find that board committees (audit, compensation, and others) are positively related with better monitoring. Xie et al. (2003) and Klein (2002) show that the likelihood of earnings management is reduced by the presence of independent audit committees. The Brazilian law requires the existence of the "fiscal board", which resembles the U.S.-style audit committee, but companies are free to establish if it is transitory or permanent. If it is transitory, minority shareholders need to call a shareholder's meeting in order to elect it.

In 2004, our board questions reveal that 74% of the companies presented different persons as Chairman of the Board and CEO, 35% had boards with outside directors, 23% had board monitoring committees, and 38% had a minority shareholder permanent fiscal board.

5.4.3. Conflicts of Interest

The three items of this sub-index attempt to capture the potential conflicts of interest that can arise between controlling and minority shareholders: departure from the one share-one vote rule by the controlling shareholders, firm inquiries or convictions by the Brazilian Securities Exchange Commission (CVM), and the adoption of arbitration to resolve shareholders' conflicts of interest.

Claessens et al. (2002) show that the incentives to expropriate minority shareholders are often exacerbated by the fact that the capital invested by the controlling shareholders is relatively lower than the voting control they achieve. Therefore, a controlling shareholders' ratio of cash-flow rights to voting rights greater than 1 can indicate a potential conflict of interest between controlling and minority shareholders.

We also verify if the firm is free of any inquiries or convictions by the Brazilian Securities Exchange Commission for governance malpractices or other securities law violations, and if the company submits to the faster and cheaper dispute resolution system of arbitration instead of the usual legal proceedings, which are generally slow and expensive.

In 2004, 86% of the companies had a controlling shareholders' ratio of cash-flow rights to voting rights greater than 1, 9% were inquired or convicted by the Brazilian Securities Exchange Commission, and only 3% adopted the arbitration system in case of a shareholders' conflict of interest.

5.4.4. Shareholder's Rights

The shareholder's rights sub-index contains four items, all of which related to rights granted by the company charter (beyond what is legally required) to its shareholders, especially minority investors. Nenova (2001, 2003) and Dyck and Zingales (2004) provide evidence that the rights and protection provisions for minority shareholders are inversely related to the value of control.

In Brazil, although all companies are subject to the same legislation, their corporate charters can establish additional rights and protections for minority shareholders. We include questions about voting procedures, additional voting rights, and mandatory bid rules. We also investigate if existing shareholder agreements, which in theory can be good or bad for minority shareholders, are beneficial to minority investors.

Our results for 2004 reveal that more than 94% of the companies do not facilitate the voting procedure and nearly 88% of the companies do not grant any voting rights beyond what is legally required. Most companies (89%) do not voluntarily grant bid rules in conditions more favorable than the law, and 16% have shareholder agreements that enhance the largest shareholder's control.

5.4.5. CGI Statistics

Table 8 shows the firms classified into three groups according to their CGI level: high (from 11 to 15), medium (from 6 to 10) and low (from 0 to 5). The proportion of companies with a CGI above 10 goes from 0.00% in 1994 to 2.59% in 2004. However, although a few outlying firms are achieving better levels of corporate governance, there are still a relatively large number of firms with medium or poor corporate governance practices. In fact, the proportion of companies with a CGI below 6 goes from 10.53% in 1994 to 18.10% in 2004.

6. Empirical Analysis

This section presents the empirical results of the determinants of the dual-class premium in Brazilian companies. This is done by estimating panel data regressions and conducting event studies to investigate what affects the relative price difference between voting and non-voting shares in Brazil.

6.1. Panel Regressions

In order to analyze the determinants of the dual-class premium (*DCP*), we begin by estimating panel data regressions. From the discussion and derivation of our research hypotheses in Section 4, the following regression is specified:

$$DCP = \beta_0 + \beta_1 Law97 + \beta_2 Law01 + \beta_3 DBidVot + \beta_4 DBidNon + \beta_5 BidVot + \beta_6 BidNon + \beta_7 Dividend +$$
$$\beta_8 Liquidity + \beta_9 Vot/Tot + \beta_{10} CGI + \beta_{11} ADR + \beta_{12} 1Vot + \beta_{13} 1Non + \beta_{14} 1Vot/Tot + \beta_{15} ControlVariables + \varepsilon$$

where *Law97* is a dummy variable that takes the value 1 under the Law 9457/97 regime, *Law01* is a dummy variable that takes the value 1 under the Law 10303/01 regime, *DBidVot* is a dummy variable that takes the value 1 if the firm voluntarily grants the bid rule for voting shares, *DBidNon* is a dummy variable that takes the value 1 if the firm voluntarily grants the bid rule for non-voting shares, *BidVot* is the bid price for voting shares, *BidNon* is the bid price for non-voting shares, *Dividend* is the dividend differential between voting and non-voting shares, *Liquidity* is the liquidity differential between voting and non-voting shares, *Vot/Tot* is the voting shares/total shares ratio, *CGI* is the corporate governance index, *ADR* is a dummy variable that takes the value 1 if the firm cross-lists in the U.S., *1Vot* is controlling shareholder's direct stake of voting shares, *1Non* is the controlling shareholder's direct stake of non-voting shares, *1Vot/Tot* is the controlling shareholder's ratio of voting shares to total shares, *ControlVar* is a set of firm-specific control variables such as industry, company size, leverage, ROA, Tobin's Q, controlling shareholder's identity, and ε is an error term. Table 4 shows the description of the variables.

In order to estimate the above equation, it is natural to use panel data techniques such as fixed-effects or random effects. The results (not reported) of the Hausman (1978) test show that the random effects model is rejected so that an estimation of the fixed-effects model is apporpriate. Based on the theoretical discussion in Section 4 and the findings of the empirical literature cited earlier, the expected signs of regression coefficients are as follows: $\beta_1 < 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 < 0$, $\beta_5 > 0$, $\beta_6 < 0$, $\beta_7 > 0$, $\beta_8 > 0$, $\beta_9 > 0$, $\beta_{10} < 0$, $\beta_{11} < 0$, $\beta_{12} > 0$, $\beta_{13} < 0$, and $\beta_{14} > 0$.

Table 9 reports the results of seven different specifications of regressions to estimate the dual-class premium in Brazilian firms. The coefficient on the differential dividend is positive and statistically significant in all specifications, supporting the hypothesis that the dual-class premium is positively related to the dividend ratio of voting shares to non-voting shares.

It is also clear from Table 9 that the dual-class premium is positively affected by the liquidity of voting shares relative to that of non-voting shares, as well as by the ratio of voting shares to total shares. Since asset prices are positively related to liquidity (Amihud and Mendelson (1988)), when the trading liquidity of voting shares or, alternatively, the number of outstanding voting shares grows, the dual-class premium is expected to increase. These results are consistent with the evidence documented by Nenova (2003) for many countries.

Regressions III and IV add the controlling shareholder's stake of voting and non-voting shares as well as his voting shares/total shares ratio. The results indicate that there is a positive and significant relation between the dual-class premium and the controlling shareholder's ratio of voting shares to total shares as a result of a potential expropriation of minority shareholders (La Porta et al. (1998, 2000, 2002), and Claessens et al. (2002)).

However, in contrast to our hypotheses 9 and 10, the coefficients on the controlling shareholder's stake of voting and non-voting shares are significantly negative and positive, respectively. One possible explanation is that the higher the controlling shareholder's stake of non-voting shares the higher the incentive to protect non-voting shareholders (Megginson (1990)), but the fewer non-voting shares outstanding. This lower liquidity for non-voting stocks should imply a positive impact on the dual-class premium. A similar liquidity argument can be employed to explain the negative relation between the controlling shareholder's stake of voting shares and the dual-class premium.

Another possible explanation is that the probability of a takeover is inversely related to the voting concentration. Specifically, the dual-class premium should be small when the largest

shareholder controls the majority of the voting rights, and be large when the control is dispersed (Rydqvist (1996), Robinson and White (1990), and Zingales (1994)). Thus, the higher the controlling shareholder's stake of voting shares, the lower the dual-class premium as a result of a less likelihood of a change in control. On the other hand, the higher the controlling shareholder's stake of non-voting shares, the higher the dual-class premium, since the issuance of non-voting shares may lead to a higher takeover probability and increase benefits in takeovers (Burkart, Gromb, Panunzi (1998)).

The CGI is negative and significant at the 1% level indicating that the dual-class premium is lower for firms with better corporate governance practices. These results add to the empirical evidence by Nenova (2003) and Dyck and Zingales (2004) who report that the degree of protection provided to minority shareholders is inversely related to the value of control.

To reinforce the conclusions made about the investor protection hypothesis, Regression V includes an ADR dummy instead of the CGI and indicates that Brazilian firms that cross-list on U.S. stock exchanges have dual-class premia that are significantly (at the 10% level) lower than firms that do not cross-list. This supports the evidence that cross-listing in the U.S. improves the protection of minority investors and decreases the private benefits of control (Doidge (2004) and Dyck and Zingales (2004)).

When both the CGI and the ADR dummy are included in the regression (not reported), the CGI remains negative and statistically significant at the 1% level, while the ADR is negative but not significant. This indicates that the CGI is more powerful than the ADR dummy in explaining the dual-class premium, since it captures a much broader range of corporate governance practices.

Regression VI includes the four governance sub-indices and the results are similar to the CGI. All coefficients are negative and statistically significant at the 1% level, except for the disclosure sub-index, which is negative but not statistically significant. As shown in Section 5.4, most Brazilian companies score higher in disclosure than in the other sub-indices. Therefore, the disclosure scoring may be less discriminating across firms than the remaining portions of the index related to other aspects of corporate governance practices.

Regression VII includes the shareholder's identity dummies. The results indicate that the dual-class premium is significantly higher for firms controlled by the Government and by

institutional investors. Foreign-owned firms also tend to have a higher dual-class premium but the coefficient is not statistically significant.

There is a vast literature studying the role of controlling shareholders (Holderness and Sheehan (1988), Volpin (2002), Claessens et al. (2002), Burkart et al. (2003), among others). One possible explanation for the lower dual-class premia in family-owned firms may be associated with the evidence by Cronqvist and Nilsson (2003) in Sweden. They find that agency costs of family owners are larger than those of other controlling investors, and that family-owned firms have a higher discount on firm value, and are less likely to be taken over compared to other firms.

Since most Brazilian firms are family-owned and the control is very concentrated on the hands of the largest shareholder (see Table 6), the lower dual-class premium may be an indicator that there is less probability of a control transfer in firms owned by families compared to those owned by the Government, foreigners and institutions[9]. Since the mandatory bid rule in Brazil is mostly for minority voting shares and it is only effective in a control transfer, a lower probability of a takeover should have a negative impact on the dual-class premium.

In all specifications, the coefficients of the firm size and leverage are positive and statistically significant at the 1% level, while the Tobin's Q coefficient is significantly negative. The ROA coefficient is generally negative, but not statistically significant.

Table 10 reports five different specifications of the regressions including the variables related to the mandatory bid rule. Regression I shows the results with the inclusion of the bid prices for voting shares and non-voting shares, which can be either the legally required or those voluntarily established by the corporate charters. We can note that the dual-class premium has a significantly positive (negative) relation with the mandatory bid price for voting (non-voting shares).

Regressions II, III and IV include the dummy variables associated with the elimination (Law 9457/97) and reestablishment (Law 10303/01) of the mandatory bid for voting shares. As expected, the dual-class premium is negatively (positively) related to the Law 9457/97 (Law 10303/01). All the coefficients are statistically significant at the 1% level, and indicate that the legally required bid rule for voting shares has an important effect on the dual-class premium.

[9] The opening process of the Brazilian economy and the privatization program started in the early 90's and allowed the acquisition of most State-owned companies by foreign and institutional investors. Table 6 shows that the proportion of foreign-controlled companies increased from 18% in 1994 to 33% in 2004, while government-owned companies decreased from 27% to 12% during the same period. Except for a few strategic companies, it is very likely that the remaining State-owned firms be subject to a control transfer through a privatization auction.

Regression V includes the dummy variables related to the dates on which the company voluntarily grants the bid rule for voting shares and non-voting shares. Consistent with our hypotheses, there is a significantly positive (negative) effect of the voluntary adoption of the bid rule for voting (non-voting) shares on the dual-class premium.

It is important to note that most variables of Table 9 are also included in Table 10 (dividend differential, trading liquidity, controlling shareholder's stake of voting and non-voting capital, CGI, size, Tobin's Q, leverage) and remain highly significant even with the inclusion of the mandatory bid variables.

Overall, our results suggest that the price difference between voting and non-voting shares is highly associated with the dividend differential, trading liquidity, controlling shareholder's stake of voting and non-voting shares, the quality of the firm's corporate governance, and the adoption (legally or voluntarily) of the bid rule for voting and non-voting shares. Most importantly, our results suggest that takeovers are more likely at firms with poor corporate governance provisions and weak takeover rules on mandatory bids.

6.2. Event Study

Event study provides an alternative methodology to assess the robustness of the panel regression results regarding the mandatory bid rule for voting and non-voting shares. The evidence from the panel regressions in Tables 9 and 10 is that the dual-class premium has a significantly positive (negative) relation with the bid rule for voting (non-voting shares).

We now present our results in a different way by performing an event study to determine the price reaction of each class of shares when the mandatory bid rule is revoked (Law 9457/97) and reestablished (Law 10303/01). Furthermore, we also analyze the price performance when the company voluntarily grants the bid rule for voting shares and non-voting shares in conditions beyond what it is legally required.

6.2.1. Legislation Changes

The event study methodology requires the precise identification of the event date. The problem in performing an event study in the case of regulatory changes is that the event date

does not necessarily coincide with the date on which the information about the legislation changes become publicly available.

As pointed out by Campbell, Lo, and MacKinlay (1997), legislation changes, for instance, in the U.S., are generally discussed in the Congress and in the public press over time, and the information may be incorporated gradually into the share prices as the probability of changes increases or decreases. One alternative employed by the literature (Schipper and Thompson (1983, 1985), and Nenova (2001)) is to consider different event dates according to the increasing or decreasing probability of the legislation change. Aktas, De Bodt, and Roll (2004) study the market response to European regulation of business combinations, and document the price reactions on various dates from the initial announcement to the final regulatory decision.

In order to capture the gradual incorporation of information into the share prices, we follow Nenova (2001) and consider three event dates associated with the legislative process in Brazil: the date on which the Chamber of Deputies approves the bill, the date on which the Senate approves the bill, and the date on which the President approves and signs the bill[10]. These three event dates for each bill are December 12, 1996, April 10, 1997, May 05, 1997 (Law 9457/97), March 28, 2001, September 19, 2001, and October 31, 2001 (Law 10303/01), respectively.

To calculate the abnormal returns, we estimate the market model using the Sao Paulo stock exchange index and a 250-day estimation window from trading day –255 to –6 relative to the event date (t=0)[11]. We use an 11-day event window (t-5 to t+5) to allow for information about the legislation changes to be leaked in advance or to have a slow effect on the stock prices.

Since the event dates are the same for all firms, the abnormal returns on individual firms are correlated in the cross-section. In order to accommodate this event clustering, we form two portfolios composed of voting and non-voting shares. This approach is suggested by Campbell, Lo, and MacKinlay (1997) and allows for cross-correlations of the abnormal returns.

[10] We also consider the date on which the bill is presented to the Congress, but the results (not reported) are not statistically significant. This may be related to the fact that the first draft of the bill is in general much different from the final version, since there are a lot of amendments during the legislative process. Another possible explanation is that this date is generally so far from the final approval date that the market may not anticipate any effect of the potential legislation change. For example, the Law 10303/01 passed on October 31, 2001, but was presented to the Congress on May 14, 1997.

[11] Since the legislation changes may also affect the market index performance during the event study, we also use the constant-mean-return model (see Campbell, Lo, and MacKinlay (1997)) to analyze the potential biases of our results. The results (not reported, but available upon request) are essentially identical to those obtained using the market model.

On a particular day t, the abnormal return AR_t is defined as the return of each portfolio (voting and non-voting) in excess of its expected return calculated from the market model. For a multi-day announcement window [t_1 to t_2], a cumulative abnormal return CAR [t_1 to t_2] is defined as the sum of the time-series of AR_t within the event window. Cumulative abnormal returns over days -1 to +1 (CAR [-1,+1]), -5 to +1 (CAR [-5,+1]), and -5 to +5 (CAR [-5,+5]) are calculated around the event date for each portfolio. To assess statistical significance, we use the traditional t-test for the portfolio abnormal returns.

The results of the event study for the legislation changes are shown in Table 11. Panel A shows the results for the Law 9457/97, which revoked the mandatory bid rule for voting shares. We can note that the abnormal returns for voting shares turn out to be significantly negative when the Chamber of Deputies approves the bill (the AR_0, CAR [-1,1], and CAR [-5,1] are statistically significant at the 10% level). However, there are no significant abnormal returns when the Senate and the President approve the bill, which may reflect that the market has already incorporated the legislation change with the previous approval by the Chamber of Deputies[12].

Panel B of Table 11 shows the results for the Law 10303/01, which reestablished the mandatory bid rule for voting shares at the 80% of control block price. The abnormal returns for voting shares are significantly positive when the Chamber of Deputies approves the bill (the CAR [-1,1], CAR [-5,1], and CAR [-5,5] are statistically significant at the 1% level), when the Senate approves the bill (the CAR [-1,1] is statistically significant at the 5% level), and even when the President signs the bill (the CAR [-1,1], CAR [-5,1], and CAR [-5,5] are statistically significant at the 10% and 5% levels, respectively). In contrast, non-voting shares have significantly negative abnormal returns when the Senate approves the bill (the CAR [-5,1] and CAR [-5,5] are statistically significant at the 1% level).

We can conclude from our panel regressions and event study analysis that the dual-class premium decreases under the Law 9457/97 because there are negative abnormal returns of voting shares as a consequence of the elimination of the mandatory bid rule. On the other hand, the dual-class premium increases under the Law 10303/01 because voting shares have positive abnormal returns and non-voting shares tend to have some negative abnormal returns, as a consequence of the reestablishment of the mandatory bid rule for voting shares.

[12] The approval generally tends to be more difficult in the Chamber of Deputies since it is composed of more members (513 deputies) when compared to the Senate (71 senators).

6.2.2. Voluntary Adoption of the Bid Rule

We now consider an event study to examine the effect of the voluntary adoption of the bid rule for voting and non-voting shares. Similar to the event study of regulatory changes, it is also difficult to identify precisely the event date, because firms may discuss over time with their shareholders and market participants about the possibility of voluntarily granting the bid rule for dispersed shares.

Since the voluntary adoption of the bid rule must be written on the company charter, we consider two event dates associated with the process of approving a company charter change in Brazil: the date on which the call for the shareholders' meeting becomes publicly available[13], and the date on which the shareholders approve the inclusion of the mandatory bid on the company charter.

Table 12 provides a list of 46 companies (at the end of 2004) that have voluntarily granted the bid rule for voting and/or non-voting shares in conditions beyond what is legally required. It is important to note that these conditions can be related to the price of the bid (higher than the 80% legally required for voting shares) and its extension to non-voting shares. Table 12 reports the company name, the approval date of the voluntary bid rule, and the bid prices for voting and non-voting shares.

These companies can be divided into three groups according to the type of the voluntary bid rule: only for voting shares, only for non-voting shares, and for both classes of shares. The first group is composed by 9 companies that do not issue non-voting shares and voluntarily grant the bid rule for voting shares at 100% of the control block price.

Most of the companies (25) voluntarily grant the bid rule only for non-voting shares and the prices are generally equal to those of voting shares (80%). However, there are some firms (Metal Iguaçu and Saraiva Livreiros Editores) in which the bid prices for non-voting shares are higher (100% and 90% of the control block price, respectively) than those of voting shares (80% of the control block price).

There are 12 companies granting a bid rule for voting shares (with a bid price higher than the required 80%) and non-voting shares. For most of these companies (8 out of 12), the bid prices

[13] The Brazilian law requires a minimum of 15 days between the call announcement and the shareholders' meeting.

for voting and non-voting shares are the same and set at 100% of the control price. In the other 4 companies, the bid price for voting shares is 100% while the bid price for non-voting shares ranges from 70% to 80% of the control price.

To be included in the event study, the company must have trading activity during the 250-day window before the voluntary adoption of the bid rule. Furthermore, the adoption of the bid rule must be the only relevant event approved by the shareholders' meeting, otherwise the abnormal returns may reflect other corporate decisions. After imposing these constraints, we exclude 13 companies that do not have the necessary data to conduct the event study. Our final sample consists of 33 firms, which can be divided as follows: 2 (bid rule only for voting shares), 21 (bid rule only for non-voting shares), and 10 (bid rule for both classes of shares).

Note that most of the excluded companies (7 out of 13) come from the group that voluntarily grants the bid rule only for voting shares. The reason is related to the fact that most of these firms have voluntarily included the bid rule in the company charter since their IPO, so there is no trading activity before their going public.

Similar to the event study conducted in Section 6.2.1, we use a 250-day window for estimating the market model and calculate the following cumulative abnormal returns: CAR [-1,+1], CAR [-5,+1], and CAR [-5,+5]. However, different from Section 6.2.1, we do not form portfolios of voting and non-voting shares since the event dates are not the same for all firms. To assess statistical significance, we use the traditional *t*-test assuming cross-sectional independence.

There are 6 (out of 33) overlapping and thus nonindependent event dates, which cause the partial clustering of event windows. Since the cross-sectional dependence in the data may cause downward bias in the standard error (see Bernard (1987)), the results assuming cross-sectional independence should be interpreted cautiously. Therefore, due to event clustering and possible event-induced volatility, we compute a bootstrap p-value (see Boehmer, Musumeci, and Poulsen (1991), Aktas, DeBodt, and Roll (2004), and Elayan, Pukthuanthong, and Roll (2005)). We re-sample from non-clustered abnormal returns in order to find the distribution of the *t*-statistic

assuming independent observations. Then, we determine the p-value by the location of the observed average abnormal return within the bootstrapped distribution[14].

The results of the event study for the voluntary adoption of the bid rule are reported in Table 13. Panel A shows the results when the event is the date of the shareholders' meeting that approves the bid rule, while Panel B considers the date on which the call for the shareholders' meeting becomes publicly available.

Panel A indicates that the abnormal returns for voting shares are significantly positive when the bid rule is only for voting shares (the AR_0 and CAR [-1,1] are statistically significant at the 5% and 10% levels, respectively). Note that we do not calculate the abnormal returns for non-voting shares because there is no trading activity for non-voting shares in these companies.

In contrast, when the bid rule is only for non-voting shares, they present significantly positive abnormal returns (the CAR [-1,1], CAR [-5,1], and CAR [-5,5] are statistically significant at the 1% level). There are no abnormal returns when the company voluntarily grants the bid rule for voting and non-voting shares.

The results in Panel B are very similar but much stronger than those in Panel A. The abnormal returns for voting shares are significantly positive when the bid rule is only for voting shares (the AR_0, CAR [-1,1], CAR [-5,1] and CAR [-5,5] are statistically significant at the 10% level), while non-voting shares have significantly positive abnormal returns when the bid rule is only for them (the CAR [-5,1] and CAR [-5,5] are statistically significant at the 5% and 1% levels, respectively). When there are bid rules for both classes of shares, there are significantly positive abnormal returns for voting shares (the CAR [-5,1] and CAR [-5,5] are statistically significant at the 1% and 5% levels, respectively) and non-voting shares (the CAR [-1,1] and CAR [-5,1] are statistically significant at the 10% level).

One possible explanation for the much stronger statistical results of Panel B is that the market may incorporate the inclusion of the bid rule when the information becomes first publicly available. Therefore, although the call for a shareholder's meeting does not necessarily mean that the voluntary bid is going to be approved in the shareholders' meeting, it conveys information about the probability of the approval.

[14] Alternatively, we use the approach developed by Schipper and Thompson (1983, 1985) and analyze the abnormal returns using unaggregated security-by-security data. While not reported in this paper, the results, although weaker, yield similar conclusions.

It is important to note that, since the control is highly concentrated in most Brazilian companies, the controlling shareholder, who has on average 63.59% of the votes (see Table 6), must agree to include the voluntary bid rule on the company charter. Since the shareholders' meeting is called by the Board of Directors, which is generally composed of corporate insiders and controlling shareholders, the inclusion of the voluntary bid rule in the agenda of a shareholders' meeting may imply that the probability of approval by the controlling shareholder is high.

Overall, our results for the panel regressions and event study analysis provide evidence that the dual-class premium is positively (negatively) related to the adoption - legally or voluntarily - of the bid rules for voting (non-voting) shares.

6.3. Discussion about Potential Biases

The results of the panel regressions and event study analyzes may raise concerns about selection bias. Our sample consists of all firms that have voting and non-voting shares traded on the Sao Paulo stock exchange from (some portion of) January 1994 to December 2004. We do not include companies with incomplete or unavailable information, and firms whose shares are not traded on the stock market during this period. To alleviate potential survivorship bias, the sample includes companies that de-listed or have classes of shares withdrawn from the market during the period. The final sample consists of a total of 141 firms, which represent 39% of the number of firms and 72% of total market capitalization of the Sao Paulo stock exchange at the end of 2004.

Therefore, our sample represents the largest and most traded Brazilian firms during a specific period of time. Their corporate governance practices are probably better than that of companies that remain private, of companies with incomplete or unavailable information, and companies whose shares are not traded on the Sao Paulo stock exchange. However, including firms that do not have complete information or any liquidity for both classes of shares would not allow us to compute some of the variables we need in our research, specially the dual-class premium, the liquidity differential, the corporate governance index, and the voluntary adoption of the bid rule.

It is important to note that our results are representative of Brazilian listed companies but most likely overstate the quality and importance of corporate governance practices for other

public companies that are not listed or that are listed and are not included in the sample. It is reasonable to expect that the dual-class premium will be higher in less traded companies because small investors will trade less frequently in the firms where they expect a higher expropriation and worse investor protection. Therefore, the potential selection bias will most likely understate the value of the private benefits of control in Brazil.

7. Summary and Conclusions

Empirical investigation of the relative price difference between voting and non-voting shares (dual-class premium) exists for many developed and developing countries. Not much is known, however, about the magnitude and the determinants of the dual-class premium in the Brazilian stock market. Although Brazil is not the only country with dual-class shares, it is well suited for this study because of two unique features and advantages.

First, it provides an opportunity to perform a study for a country with one of the highest dual-class premia (Dyck and Zingales (2004) and Nenova (2003)). The second advantage is that the sample size is much larger than in studies of other countries, since dual-class firms are more common in Brazil than in any other part of the world (Nenova (2003) and Doidge (2004)).

This study extends several of the issues raised by the literature in other countries in order to analyze the dual-class premium of Brazilian firms. This paper differs from the previous studies in several aspects. We use a larger sample for a longer time period, which allows us to evaluate more precisely the determinants of the dual-class premium.

This study is also the first to explore the effect of corporate governance practices on the dual-class premium of Brazilian companies. In order to address this issue we construct a firm-level corporate governance index following an approach that has recently become very popular in the literature (Black, Jang, and Kim (2004), Klapper and Love (2004), Gompers, Ishii, and Metrick (2003)).

Furthermore, our paper complements the existing work on the mandatory bid rule (Bebchuk (1994), Bergstrom, Hogfeldt, and Molin (1997), Bebchuk and Hart (2001), Burkart and Panunzi (2003)) and innovates in the sense that we focus not only on the bid rule required by the legislation (and thus mandatory for all firms), but also on the bid rules that are voluntarily

granted by companies for their minority shareholders in conditions beyond what is legally required.

Our results provide evidence that the dual-class premium in Brazil is very unstable over time, and is highly associated with the dividend differential, relative trading liquidity, and the controlling shareholder's stake of voting and non-voting shares. Non-voting shares are generally more liquid and receive higher or preferential dividends in Brazil, which affects negatively the dual-class premium. Moreover, since most voting shares are held by the controlling shareholders in a block, there are always more non-voting shares than voting shares outstanding, which also implies a negative effect on the dual-class premium.

We provide evidence that the degree of investor protection is inversely related to the dual-class premium (Nenova (2003), Dyck and Zingales (2004), and Doidge (2004)). Our firm-level corporate governance index has a significantly negative effect on the dual-class premium, and has more explanatory power than the simple inclusion of an ADR dummy. One possible explanation is that the corporate governance index captures a much broader range of corporate governance practices.

Finally, there is a significantly positive (negative) effect of the mandatory bid rule for voting (non-voting) shares on the dual-class premium. The dual-class premium tends to increase when the mandatory bid rule for voting shares is legally required. In contrast, when the bid rule is revoked by law amendments, the dual-class premium decreases substantially. Most importantly, the dual-class premium is significantly lower in companies that voluntarily grant the bid rule for non-voting shares in conditions beyond what is legally required.

Overall, the dual-class premium is related to the mandatory bid rule, suggesting a positive premium for corporate control (i.e., takeovers). It is also inversely related to the firm's corporate governance practices suggesting that poor corporate governance makes it more likely that the firm will be taken over. The results suggest that takeovers are more likely at firms with poor corporate governance provisions and weak takeover rules on mandatory bids.

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Table 1
Number of Dual-Class Firms by Country

Stock market capitalization, number of listed firms and dual-class firms for 30 countries at the end of 2003. The market capitalization is the total number of shares of domestic companies in domestic stock exchanges multiplied by their respective prices. Information on the market capitalization and number of domestic listed companies comes from the World Federation of Exchanges. The number of firms with dual-class shares comes from the Datastream and includes only domestic companies with both classes listed and traded on the domestic exchange at the end of 2003. The U.S. includes the NYSE, AMEX, and NASDAQ stock exchanges. The Euronext combines the stock exchanges of Belgium, France, Netherlands, and Portugal.

Country	Domestic Stock Market Capitalization (in millions of US$)	Number of Listed Firms	Number of Dual-Class Firms
U.S.	14,266,023	5,295	69
Japan	4,904,617	3,314	0
U.K.	2,460,064	2,311	9
Germany	1,079,026	684	49
Euronext	2,076,410	1,046	11
Canada	888,678	3,561	79
Switzerland	727,103	289	14
Spain	726,243	3,191	1
Hong Kong	714,597	1,027	1
Italy	614,842	271	34
Australia	585,431	1,405	2
India	531,556	6,555	0
China	512,979	1,285	0
Taiwan	379,060	669	6
Korea	298,248	684	118
Sweden	293,017	266	32
Brazil	234,219	369	184
Finland	170,283	142	16
South Africa	168,263	390	12
Malaysia	160,970	898	1
Singapore	148,503	475	0
Mexico	122,533	158	17
Thailand	119,017	418	0
Denmark	118,167	187	13
Greece	103,765	331	19
Norway	95,920	156	6
Chile	87,508	240	12
Ireland	85,071	55	0
Israel	68,904	573	0
Turkey	68,379	285	2

Table 2
Control and Ownership of Brazilian Listed Companies

Descriptive statistics of control (voting rights) and ownership (cash flow rights) of all Brazilian companies listed on the Sao Paulo stock exchange at the end of 2003. *Vot/Tot* represents the number of voting shares divided by the total (voting and non-voting) shares issued by the company. *NonVot/Tot* is the ratio of non-voting shares to total shares issued by the company. *1Vot* is the number of voting shares owned by the largest shareholder divided by the total number of voting shares issued by the company. *1NonVot* is the number of non-voting shares owned by the largest shareholder divided by the total number of non-voting shares issued by the company. *1Tot* is the number of total shares owned by the largest shareholder divided by the total shares issued by the company.

	Vot/Tot	NonVot/Tot	1Vot	1NonVot	1Tot
Mean	58.84%	41.16%	72.32%	27.67%	56.32%
Median	50.00%	50.00%	77.42%	8.11%	52.85%
Minimum	33.33%	0.00%	11.52%	0.00%	4.50%
Maximum	100.00%	66.67%	100.00%	100.00%	100.00%
1st Quartile	36.46%	16.02%	54.33%	0.00%	32.30%
3rd Quartile	83.98%	63.54%	95.06%	48.63%	81.89%
Std Deviation	25.15%	25.15%	24.54%	34.32%	28.30%

Table 3
Numerical Example of the Dual-Class Premium as a Function of the Mandatory Bid Rule

Numerical example to illustrate the theoretical model of the dual-class premium as a function of the mandatory bid rule. Panel A shows the case of no mandatory bid rule, while Panel B and C report the results under the mandatory bid rule for voting shares, and for both voting and non-voting shares, respectively. In all cases, there is a dual-class firm with a total of 100 shares, of which 34 are voting shares and 66 are non-voting shares. The controlling shareholder has 18 voting shares, which keep him with more than 50% of the votes. There is a potential buyer who may or may not acquire the control from the incumbent. The security value of voting and non-voting shares is assumed to be the same (10.00 per share) and constant. Private benefits of control are 36.00 (for the controlling shareholder) and 54.00 (for the buyer). λ and $(1-\lambda)$, on the interval [0,1], represent the bargaining powers of the buyer and incumbent, respectively. * indicates that the minority shareholders do not tender their shares.

Panel A: No Mandatory Bid Rule

λ	Block Price	Block Price Per Share	Minority Voting Price per Share	Minority Non-Voting Price per Share
0.00	234.00	13.00	10.00	10.00
0.10	232.20	12.90	10.00	10.00
0.20	230.40	12.80	10.00	10.00
0.30	228.60	12.70	10.00	10.00
0.40	226.80	12.60	10.00	10.00
0.50	225.00	12.50	10.00	10.00
0.60	223.20	12.40	10.00	10.00
0.70	221.40	12.30	10.00	10.00
0.80	219.60	12.20	10.00	10.00
0.90	217.80	12.10	10.00	10.00
1.00	216.00	12.00	10.00	10.00

Table 3 – *Continued*

Panel B: Mandatory Bid Rule for Voting Shares at 80% of the Control Price

λ	Block Price	Block Price Per Share	Minority Voting Price per Share	Minority Non-Voting Price per Share
0.00	230.26	12.79	10.23	10.00
0.10	229.39	12.74	10.20	10.00
0.20	228.44	12.69	10.15	10.00
0.30	227.40	12.63	10.11	10.00
0.40	226.26	12.57	10.06	10.00
0.50	225.00	12.50	10.00	10.00
0.60	223.60	12.42	9.94*	10.00
0.70	222.03	12.34	9.87*	10.00
0.80	220.27	12.24	9.79*	10.00
0.90	218.28	12.13	9.70*	10.00
1.00	216.00	12.00	9.60*	10.00

Panel C: Mandatory Bid Rule for Voting and Non-Voting Shares at 80% of the Control Price

λ	Block Price	Block Price Per Share	Minority Voting Price per Share	Minority Non-Voting Price per Share
0.00	226.94	12.61	10.09	10.09
0.10	226.68	12.59	10.07	10.07
0.20	226.38	12.58	10.06	10.06
0.30	226.01	12.56	10.05	10.05
0.40	225.56	12.53	10.03	10.03
0.50	225.00	12.50	10.00	10.00
0.60	224.27	12.46	9.97*	9.97*
0.70	223.28	12.40	9.92*	9.92*
0.80	221.88	12.33	9.86*	9.86*
0.90	219.72	12.21	9.77*	9.77*
1.00	216.00	12.00	9.60*	9.60*

Table 4
Description of variables

Variable	Description
DCP	Relative price difference between voting and non-voting shares. Monthly share prices are obtained from the last day of the month on which non-zero trades are recorded for voting and non-voting shares.
Law97	Dummy variable that equals 1 under the Law 9457/97 regime.
Law01	Dummy variable that equals 1 under the Law 10303/01 regime.
DBidVot	Dummy variable that equals 1 if the firm voluntarily grants the bid rule for voting shares in conditions beyond what is legally required.
DBidNon	Dummy variable that equals 1 if the firm voluntarily grants the bid rule for non-voting shares in conditions beyond what is legally required.
BidVot	Bid price for voting shares.
BidNon	Bid price for non-voting shares.
Dividend	Difference between the dividends of voting and non-voting shares divided by the dividends of non-voting shares. Dividends of each class are calculated from the previous 12 calendar months.
Liquidity	Ln (voting shares liquidity/non-voting shares liquidity). Liquidity is the trading volume of the class accumulated over the calendar month.
CGI	Corporate governance index, scaled to a value between 0 and 15, taking into account 15 different aspects of the firm's corporate governance structure (see Table 7).
Disclosure	CGI sub-index, scaled from 0 to 4, taking into account four different aspects of the firm's disclosure (see Table 7).
Board	CGI sub-index, scaled from 0 to 4, taking into account four different aspects of the firm's board composition and functioning (see Table 7).
Conflicts	CGI sub-index, scaled from 0 to 3, taking into account three different aspects of the firm's conflicts of interest (see Table 7).
Rights	CGI sub-index, scaled from 0 to 4, taking into account four different aspects of the shareholders' rights in the firm (see Table 7).

Table 4 - *Continued*

Variable	Description
Vot/Tot	Voting shares divided by the total shares issued by the company.
ADR	Dummy variable that equals 1 if the firm cross-lists in the U.S.
1Vot	Voting shares owned directly by the largest shareholder divided by the total number of voting shares.
1Non	Non-voting shares owned directly by the largest shareholder divided by the total number of non-voting shares.
1Vot/Tot	Voting shares owned directly by the largest shareholder divided by the total (voting and non-voting) shares owned directly by the largest shareholder.
5Vot	Voting shares owned directly by the 5 largest shareholders divided by the total number of voting shares.
5Non	Non-voting shares owned directly by the 5 largest shareholders divided by the total number of non-voting shares.
5Vot/Tot	Voting shares owned directly by the 5 largest shareholders divided by the total (voting and non-voting) shares owned directly by the 5 largest shareholders.
Foreign	Dummy variable that equals 1 if the largest shareholder is a foreign investor.
Government	Dummy variable that equals 1 if the largest shareholder is the Government.
Institutional	Dummy variable that equals 1 if the largest shareholder is an institutional investor (banks, insurance companies, pension funds, foundations or mutual funds).
Leverage	Ratio of total (non equity) liabilities to total assets.
ROA	Ratio of operating income to total assets.
Size	Firm size, measured by the natural logarithm of the market value of equity in thousands of Brazilian *reais*.
Tobin's Q	Ratio of market value of assets to book value of assets. Asset market value is computed as the book value of assets minus book value of equity plus market value of equity.
Industry	Dummy variables that indicate the company industrial type according to the Economatica database classification.

Table 5

Time-Series of the Dual-Class Premium in Brazil

Descriptive statistics of the dual-class premium in Brazil from December 1994 to December 2004. Panel A reports the time-series of dual-class premium in Brazil. Columns 7, 8 and 9 report the number of firms included in the sample by year and the proportion of firms with positive and negative dual-class premia, respectively. Panel B reports the tests of differences between means and medians of the dual-class premium when the bid rule is mandatory (from 1994 to 1996 and from 2001 to 2004) and when it is revoked (from 1997 to 2000). The p-values are shown in parentheses. ***, **, and * indicate differences in means and medians significant at the 1%, 5%, and 10% levels, respectively.

Panel A: Time-Series of Dual-Class Premium in Brazil

Year	Mean	Median	Std Dev	Min	Max	Number of Firms	% of Firms with Positive Premium	% of Firms with Negative Premium
1994	11.95%	6.43%	36.77%	-67.67%	144.08%	74	59.46%	40.54%
1995	32.73%	9.50%	80.45%	-58.11%	433.11%	76	61.84%	38.16%
1996	35.13%	6.20%	92.71%	-35.42%	580.00%	79	60.76%	39.24%
1997	14.81%	-0.57%	51.70%	-44.38%	307.09%	83	49.40%	50.60%
1998	-3.33%	-8.75%	39.93%	-59.12%	250.74%	105	44.76%	55.24%
1999	-8.70%	-9.36%	31.30%	-54.92%	175.59%	111	27.03%	72.97%
2000	1.58%	-1.62%	29.67%	-46.78%	130.48%	107	43.93%	56.07%
2001	8.85%	-1.01%	35.70%	-37.36%	196.29%	106	47.17%	52.83%
2002	6.77%	-3.08%	39.30%	-50.00%	203.64%	104	39.42%	60.58%
2003	-1.80%	-5.00%	25.15%	-51.61%	101.40%	103	39.81%	60.19%
2004	5.75%	-1.02%	34.89%	-42.41%	180.36%	104	47.12%	52.88%

Panel B: Testing Differences Between Means and Medians of the Dual-Class Premium in Brazil

	100% Bid Rule for Voting Shares (from 1994 to 1996)	No Bid Rule (from 1997 to 2000)	80% Bid Rule for Voting Shares (from 2001 to 2004)
Mean	26.84%***	0.21%	4.93%**
	(0.00)	-	(0.03)
Median	7.99%***	-6.64%	-2.15%*
	(0.00)	-	(0.08)

Table 6

Summary Statistics of Selected Variables

Descriptive statistics of selected variables used as determinants of the dual-class premium in our sample. The statistics are the mean and median (in parentheses) for every two years during the 1994-2004 period. Definitions for each of the variables can be found in Table 4.

Variable	1994	1996	1998	2000	2002	2004
BidVot	100.00%	100.00%	0.00%	0.00%	67.06%	81.16%
	(100.00%)	(100.00%)	(0.00%)	(0.00%)	(80.00%)	(80.00%)
BidNon	0.00%	0.00%	0.00%	0.00%	4.16%	11.93%
	(0.00%)	(0.00%)	(0.00%)	(0.00%)	(0.00%)	(0.00%)
Dividend	-9.60%	-7.99%	-9.22%	-12.68%	-8.66%	-5.17%
	(0.00%)	(0.00%)	(0.00%)	(0.00%)	(0.00%)	(0.00%)
Liquidity	2.59	3.98	6.68	4.78	6.12	4.13
	(0.09)	(0.18)	(0.10)	(0.20)	(0.14)	(0.13)
CGI	6.87	6.80	6.47	6.51	7.01	7.15
	(7.00)	(7.00)	(6.00)	(6.00)	(7.00)	(7.00)
Vot/Tot	47.99%	48.98%	52.92%	51.93%	52.57%	52.21%
	(47.22%)	(50.00%)	(50.00%)	(49.84%)	(49.46%)	(46.67%)
1Vot	55.50%	54.82%	56.20%	59.92%	61.95%	63.59%
	(52.95%)	(51.18%)	(52.37%)	(55.51%)	(58.41%)	(60.56%)
1Non	24.78%	26.94%	29.61%	33.26%	36.83%	38.69%
	(14.59%)	(17.18%)	(19.45%)	(22.85%)	(25.29%)	(31.59%)
1Vot/Tot	1.58	1.53	1.46	1.46	1.43	1.40
	(1.49)	(1.38)	(1.27)	(1.23)	(1.22)	(1.19)
5Vot	79.09%	79.55%	80.99%	81.62%	83.66%	84.20%
	(81.72%)	(82.17%)	(83.86%)	(84.96%)	(87.51%)	(88.30%)
5Non	30.95%	34.40%	37.94%	43.23%	46.79%	48.07%
	(20.62%)	(20.80%)	(29.03%)	(38.90%)	(40.28%)	(46.48%)
5Vot/Tot	1.63	1.58	1.50	1.49	1.45	1.43
	(1.50)	(1.47)	(1.41)	(1.25)	(1.22)	(1.21)
Foreign	0.18	0.16	0.27	0.38	0.31	0.33
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Government	0.27	0.27	0.16	0.14	0.15	0.12
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Institutional	0.18	0.16	0.15	0.11	0.13	0.18
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	48.15%	49.36%	53.15%	56.79%	62.40%	66.02%
	(41.60%)	(44.10%)	(50.50%)	(56.70%)	(60.20%)	(61.90%)
ROA	5.24%	2.64%	0.60%	3.56%	-2.24%	2.84%
	(-3.20%)	(-2.60%)	(-2.64%)	(-2.88%)	(-3.24%)	(-7.24%)
Size	12.09	12.91	12.53	12.92	13.00	13.50
	(12.14)	(12.76)	(12.68)	(13.20)	(13.37)	(13.78)
Tobin's Q	0.85	0.85	0.89	1.21	0.98	1.21
	(0.82)	(0.84)	(0.86)	(0.95)	(0.93)	(1.04)

Table 7

Description of the Corporate Governance Index (CGI)

Each question corresponds to 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 15. Index dimensions are simply for presentation purposes and there is no weighing among questions. All questions are answered from public information disclosed by listed companies and not by means of potentially subjective interviews. Sources of information are company charters and annual reports.

Disclosure
1. Does the company produce its financial reports by the required date?
2. Does the company use an international accounting standard (IASB or U.S. GAAP)?
3. Does the company use one of the leading global auditing firms?
4. Does the company disclose the compensation of the CEO and board members?
Board Composition and Functioning
5. Are the Chairman of the Board and the CEO not the same person?
6. Is the board clearly not made up of corporate insiders and controlling shareholders?
7. Does the company have board monitoring committees (audit, compensation, etc.)?
8. Is there a permanent Fiscal Board?
Conflicts of Interest
9. Is the controlling shareholders' ratio of cash-flow to voting rights lower than or equal to 1?
10. Is the company free of any inquiries or convictions by the Brazilian Securities and Exchange Comission (CVM) for governance malpractices or other securities law violations?
11. Does the company charter establish arbitration to resolve corporate conflicts?
Shareholder´s Rights
12. Does the company facilitate the process of voting beyond what is legally required?
13. Does the company grant additional voting rights beyond what is legally required?
14. Does the company grant mandatory bid beyond what is legally required?
15. Does the existing shareholder agreements decrease the largest shareholder's control?

Table 8

Score Distribution for the Corporate Governance Index (CGI)

CGI is a firm-level corporate governance index composed of 15 questions. All questions are answered from public information disclosed by listed companies and not by means of potentially subjective interviews. Sources of information are company charters and annual reports. Each question corresponds to 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 15. The firms are classified into three groups, according to their CGI level: high (from 11 to 15), medium (from 6 to 10) and low (from 0 to 5). The proportion (in %) of firms belonging to each group is shown for every two years during the 1994-2004 period.

Group	CGI	1994	1996	1998	2000	2002	2004
High CGI	15	0.00	0.00	0.00	0.00	0.00	0.00
	14	0.00	0.00	0.00	0.00	0.00	0.00
	13	0.00	0.00	0.00	0.00	0.00	0.86
	12	0.00	0.00	0.00	0.00	0.00	1.73
	11	0.00	0.00	0.00	0.00	2.54	0.00
	Sum	*0.00*	*0.00*	*0.00*	*0.00*	*2.54*	*2.59*
Medium CGI	10	1.76	1.64	1.06	0.81	2.54	4.31
	9	7.02	9.84	4.25	3.23	7.63	12.07
	8	21.05	18.03	15.96	20.97	27.12	25.86
	7	29.82	26.23	26.60	24.19	22.03	21.55
	6	29.82	31.15	29.79	29.03	24.58	15.52
	Sum	*89.47*	*86.89*	*77.66*	*78.23*	*83.90*	*79.31*
Low CGI	5	7.02	8.20	13.83	15.32	6.78	9.48
	4	3.51	4.91	7.45	5.65	5.93	7.76
	3	0.00	0.00	1.06	0.80	0.85	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.86
	1	0.00	0.00	0.00	0.00	0.00	0.00
	0	0.00	0.00	0.00	0.00	0.00	0.00
	Sum	*10.53*	*13.11*	*22.34*	*21.77*	*13.56*	*18.10*

Table 9

Determinants of the Dual-Class Premium

The dependent variable in each regression is the dual-class premium (DCP), measured as the relative price difference between voting and non-voting shares. All coefficients are obtained by estimating linear fixed-effects panel data models. Definitions for each of the variables can be found in Table 4. Year and industry dummies are included in each regression but are not reported. Data include Brazilian dual-class firms from 1994 to 2004. The p-values are shown in parentheses. ***, **, * denote statistical significance at the 1%, 5% and 10%, respectively.

	I	II	III	IV	V	VI	VII
Dividend	0.0893***	0.0894***	0.0844***	0.0704***	0.0425***	0.0655***	0.0732***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0086)	(0.0000)	(0.0000)
Liquidity	0.0119***	0.0120***	0.0111***	0.0115***	0.0113***	0.0120***	0.0111***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
CGI		-0.0175***	-0.0169***	-0.0183***			-0.0190***
		(0.0000)	(0.0000)	(0.0000)			(0.0000)
Vot/Tot			0.0337**	0.0504***	0.0405***	0.0313*	0.0334**
			(0.0331)	(0.0012)	(0.0000)	(0.0595)	(0.0342)
1Vot/Tot			0.0245***				
			(0.0000)				
1Vot				-0.1581***	-0.0825***	-0.0715***	-0.1675***
				(0.0000)	(0.0004)	(0.0000)	(0.0000)
1Non				0.0169***	0.0068	0.0301***	0.0118*
				(0.0073)	(0.6935)	(0.0001)	(0.0891)
ADR					-0.0206*		
					(0.0620)		
Disclosure						-0.0001	
						(0.9651)	
Board						-0.0140***	
						(0.0000)	
Conflicts						-0.0761***	
						(0.0000)	
Rights						-0.0136***	
						(0.0000)	
Foreign							0.0048
							(0.6434)
Government							0.0977***
							(0.0000)
Institutional							0.0681***
							(0.0000)
Size	0.0047***	0.0041***	0.0035***	0.0104***	0.0144***	0.0111***	0.0121***
	(0.0000)	(0.0000)	(0.0006)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
ROA	-0.0036	-0.0008	-0.0008	-0.0036	0.0000	-0.0020	-0.0040
	(0.6963)	(0.9178)	(0.9289)	(0.7304)	(0.9858)	(0.8500)	(0.6817)
Tobin's Q	0.0013	-0.0037*	0.0027	-0.0028*	-0.0191**	-0.0023	-0.0042***
	(0.4310)	(0.0510)	(0.1476)	(0.0735)	(0.0257)	(0.1554)	(0.0043)
Leverage	0.0005***	0.0003***	0.0003***	0.0005***	0.0004***	0.0005***	0.0005***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Observations	10,497	10,497	10,473	10,473	10,473	10,473	10,473
Adjusted R^2	0.3612	0.3643	0.3641	0.3667	0.3558	0.3666	0.3713

Table 10
Dual-Class Premium and Mandatory Bid Rule

The dependent variable in each regression is the dual-class premium (DCP), measured as the relative price difference between voting and non-voting shares. All coefficients are obtained by estimating linear fixed-effects panel data models. Definitions for each of the variables can be found in Table 4. Year and industry dummies are included in each regression but are not reported. Data include Brazilian dual-class firms from 1994 to 2004. The p-values are shown in parentheses. ***, **, * denote statistical significance at the 1%, 5% and 10%, respectively.

	I	II	III	IV	V
Dividend	0.0553***	0.0556***	0.0688***	0.0644***	0.0670***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Liquidity	0.0116***	0.0114***	0.0116***	0.0108***	0.0117***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
CGI	-0.0174***	-0.0117***	-0.0170***	-0.0165***	-0.0204***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Vot/Tot	0.0585***	0.0554***	0.0534***	0.0247	0.0495***
	(0.0009)	(0.0009)	(0.0006)	(0.1561)	(0.0017)
1Vot	-0.1665***	-0.1801***	-0.1655***	-0.1305***	-0.1562***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
1Non	0.0191***	0.0236***	0.0163***	0.0381***	0.0143**
	(0.0029)	(0.0001)	(0.0095)	(0.0000)	(0.0343)
BidVot	0.0004***				
	(0.0000)				
BidNon	-0.0005***				
	(0.0000)				
Law97		-0.0383***		-0.0850***	
		(0.0000)		(0.0000)	
Law01			0.0083***	0.0776***	
			(0.0000)	(0.0000)	
DBidVot					0.0114*
					(0.0877)
DBidNon					-0.0223***
					(0.0003)
Size	0.0149***	0.0131***	0.0093***	0.0235***	0.0106***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Tobin's Q	-0.0059***	-0.0054***	-0.0021	-0.0033***	-0.0033**
	(0.0000)	(0.0002)	(0.1895)	(0.0000)	(0.0337)
Leverage	0.0008***	0.0006***	0.0005***	0.0011***	0.0006***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Observations	10,469	10,473	10,473	10,473	10,473
Adjusted R^2	0.3710	0.3700	0.3667	0.3667	0.3670

Table 11
Abnormal Returns and Legislation Changes

Abnormal returns of voting and non-voting shares and the legislation changes in Brazil. Three event dates are considered: the date on which the Chamber of Deputies approves the bill, the date on which the Senate approves the bill (not reported to conserve space), and the date on which the President signs the bill. The abnormal returns are estimated through the market model using the Sao Paulo stock exchange index and a 250-day estimation window. Abnormal returns during the event date (AR_0) and cumulative abnormal returns over days -1 to +1 (CAR [-1,+1]), -5 to +1 (CAR [-5,+1]), and -5 to +5 (CAR [-5,+5]) are calculated. Panel A illustrates the abnormal returns around the Law 9457/97, while Panel B reports the results for the Law 10303/01. The p-values are shown in parentheses. ***, **, * denote statistical significance at the 1%, 5% and 10%, respectively.

Panel A: Law 9457/97

Abnormal Returns	Bill Approved by the Chamber of Deputies		Bill Approved by the Senate		Bill Signed by the President	
	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares
AR_0	-0.60%*	0.36%	-0.02%	0.29%	-0.25%	-0.18%
	(0.08)	(0.25)	(0.48)	(0.28)	(0.29)	(0.36)
CAR [-1,1]	-1.11%*	-0.61%	-0.10%	0.78%	-0.51%	-0.23%
	(0.07)	(0.25)	(0.45)	(0.18)	(0.25)	(0.40)
CAR [-5,1]	-1.48%*	-0.64%	-0.54%	0.54%	-0.84%	-0.56%
	(0.10)	(0.32)	(0.33)	(0.34)	(0.24)	(0.34)
CAR [-5,5]	-1.19%	-0.49%	-1.12%	-0.30%	-1.24%	-0.55%
	(0.20)	(0.39)	(0.23)	(0.43)	(0.20)	(0.37)

Panel B: Law 10303/01

Abnormal Returns	Bill Approved by the Chamber of Deputies		Bill Approved by the Senate		Bill Signed by the President	
	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares
AR_0	0.35%	0.07%	0.02%	-0.46%	0.17%	0.05%
	(0.15)	(0.42)	(0.48)	(0.13)	(0.33)	(0.45)
CAR [-1,1]	1.54%***	0.00%	1.06%**	-0.44%	0.94%*	0.68%
	(0.00)	(0.50)	(0.05)	(0.27)	(0.08)	(0.18)
CAR [-5,1]	2.29%***	-0.35%	0.62%	-3.13%***	1.69%**	0.77%
	(0.00)	(0.35)	(0.26)	(0.00)	(0.05)	(0.25)
CAR [-5,5]	2.44%***	-0.34%	1.14%	-4.50%***	2.50%**	0.57%
	(0.01)	(0.38)	(0.17)	(0.00)	(0.02)	(0.34)

Table 12
Brazilian Companies with Voluntary Adoption of the Bid Rule

List of 46 Brazilian companies listed on the Sao Paulo stock exchange that voluntarily grant the bid rule in conditions beyond what it is legally required at the end of 2004. The table shows the company name, the approval date of the voluntary bid rule, and the bid prices for voting and non-voting shares (expressed in % relative to the control block price). Companies with names followed by "IPO" indicate that the voluntary bid rule has been included since their initial public offering. "NA" (not applicable) means that the firm does not issue non-voting shares.

Company Name	Approval Date	Bid Price for Voting Shares (%)	Bid Price for Non-Voting Shares (%)
América Latina Logística	May 11, 2004	100	100
Banco do Brasil	Jun 07, 2002	100	NA
Batistella	Dec 27, 2002	80	80
Bradesco	Dec 17, 2003	100	80
Braskem	Aug 16, 2002	100	100
Cambuci	Apr 28, 2003	80	80
CCR Rodovias	Jan 17, 2002	100	NA
Cedro	Nov 08, 2002	80	80
Celesc	Jun 17, 2002	100	100
Chiarelli	Dec 23, 2002	80	80
Coteminas	Aug 21, 2002	80	80
CPFL Energia	Aug 13, 2004	100	NA
Diagnósticos da América (IPO)	Nov 19, 2004	100	NA
Duratex	Dec 16, 2002	80	80
Elekeiroz	Jul 31, 2002	80	80
Eletropaulo	Dec 13, 2004	100	70
Forca Luz Cataguazes Leopoldina	Feb 14, 2003	80	80
Duke Energy Ger. Paranapanema	Oct 25, 2002	80	80
Gerdau	Apr 30, 2002	100	100
Gerdau Metalurgica	Apr 30, 2002	100	100
Gol Linhas Aéreas (IPO)	Jun 24, 2004	100	100
Grazziotin	Dec 11, 2002	80	80
Grendene (IPO)	Oct 27, 2004	100	NA
Ideiasnet (IPO)	Jun 08, 2000	100	NA
Itaubanco	Apr 30, 2002	80	80
Itausa	Apr 29, 2002	80	80
Marcopolo	Aug 21, 2002	100	80
Marisol	Dec 20, 2002	80	80
Metal Iguaçu	Nov 27, 2002	80	100
Nadir Figueiredo	Apr 28, 2003	80	80
Natura (IPO)	May 26, 2004	100	NA
Net	May 02, 2002	100	100

Table 12 - *Continued*

Company Name	Approval Date	Bid Price for Voting Shares (%)	Bid Price for Non-Voting Shares (%)
Perdigão	Dec 17, 2002	80	80
Petropar	Nov 25, 2002	80	80
Pettenati	Oct 30, 2002	80	80
Porto Seguro	Oct 27, 2004	100	NA
Randon Participacoes	Dec 10, 2002	80	80
Rhodia Ster	Apr 23, 2002	80	80
Sabesp	Apr 18, 2002	100	NA
Sansuy	Apr 05, 2002	80	80
Saraiva Livreiros Editores	Mar 02, 2000	80	90
Suzano Petoquímica	Nov 18, 2004	100	80
Tekno	Dec 03, 2002	80	80
Tupy	Dec 20, 2002	80	80
Ultrapar	May 18, 2004	100	100
Weg	Nov 18, 2002	80	80

Table 13
Abnormal Returns and Voluntary Adoption of the Bid Rule

Abnormal returns of voting and non-voting shares and the voluntary grant of the bid rule. Two event dates are considered: the date of the shareholders' meeting that approves the bid rule (Panel A), and the announcement date of the call for the shareholders' meeting (Panel B). The abnormal returns are estimated through the market model using a 250-day estimation window. Abnormal returns during the event date (AR_0) and cumulative abnormal returns over days -1 to +1 (CAR [-1,+1]), -5 to +1 (CAR [-5,+1]), and -5 to +5 (CAR [-5,+5]) are calculated. The sample consists of 33 firms divided into three groups according to the bid rule: for voting shares (2), for non-voting shares (21), and for both classes of shares (10). For the firms with the bid rule only for voting shares, the abnormal returns for non-voting shares are not calculated since there is no trading activity. Bootstrap p-values (in parentheses) account for event clustering and event-induced volatility. ***, **, * denote statistical significance at the 1%, 5% and 10%, respectively.

Panel A: Shareholders' Meeting as the Event Date

Abnormal Returns	Bid Rule Only for Voting Shares		Bid Rule Only for Non-Voting Shares		Bid Rule for Voting and Non-Voting Shares	
	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares
AR_0	2.83%** (0.05)	-	0.17% (0.36)	0.28% (0.24)	0.35% (0.25)	-0.14% (0.40)
CAR [-1,1]	2.53%* (0.10)	-	0.46% (0.29)	1.74%*** (0.01)	-0.21% (0.41)	-0.77% (0.21)
CAR [-5,1]	1.14% (0.26)	-	0.85% (0.25)	6.57%*** (0.00)	-0.89% (0.26)	-0.13% (0.46)
CAR [-5,5]	0.14% (0.47)	-	0.92% (0.28)	7.39%*** (0.00)	-1.64% (0.18)	-2.14% (0.12)

Panel B: Announcement of the Call for the Shareholders' Meeting as the Event Date

Abnormal Returns	Bid Rule Only for Voting Shares		Bid Rule Only for Non-Voting Shares		Bid Rule for Voting and Non-Voting Shares	
	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares	Voting Shares	Non-Voting Shares
AR_0	1.99%* (0.07)	-	-0.40% (0.36)	-0.02% (0.49)	0.13% (0.40)	0.23% (0.32)
CAR [-1,1]	4.45%* (0.06)	-	0.39% (0.42)	0.29% (0.40)	0.68% (0.22)	1.21%* (0.09)
CAR [-5,1]	4.02%* (0.09)	-	0.42% (0.44)	3.79%** (0.02)	4.17%*** (0.01)	1.99%* (0.07)
CAR [-5,5]	4.70%* (0.10)	-	-0.91% (0.40)	8.31%*** (0.00)	3.29%** (0.05)	-0.07% (0.48)

Figure 1
Time-Series Evolution of the Dual-Class Premium in Brazil

Mean and median dual-class premium for Brazilian firms listed on the Sao Paulo stock exchange from 1994 to 2004. The market prices come from Economatica and Datastream.

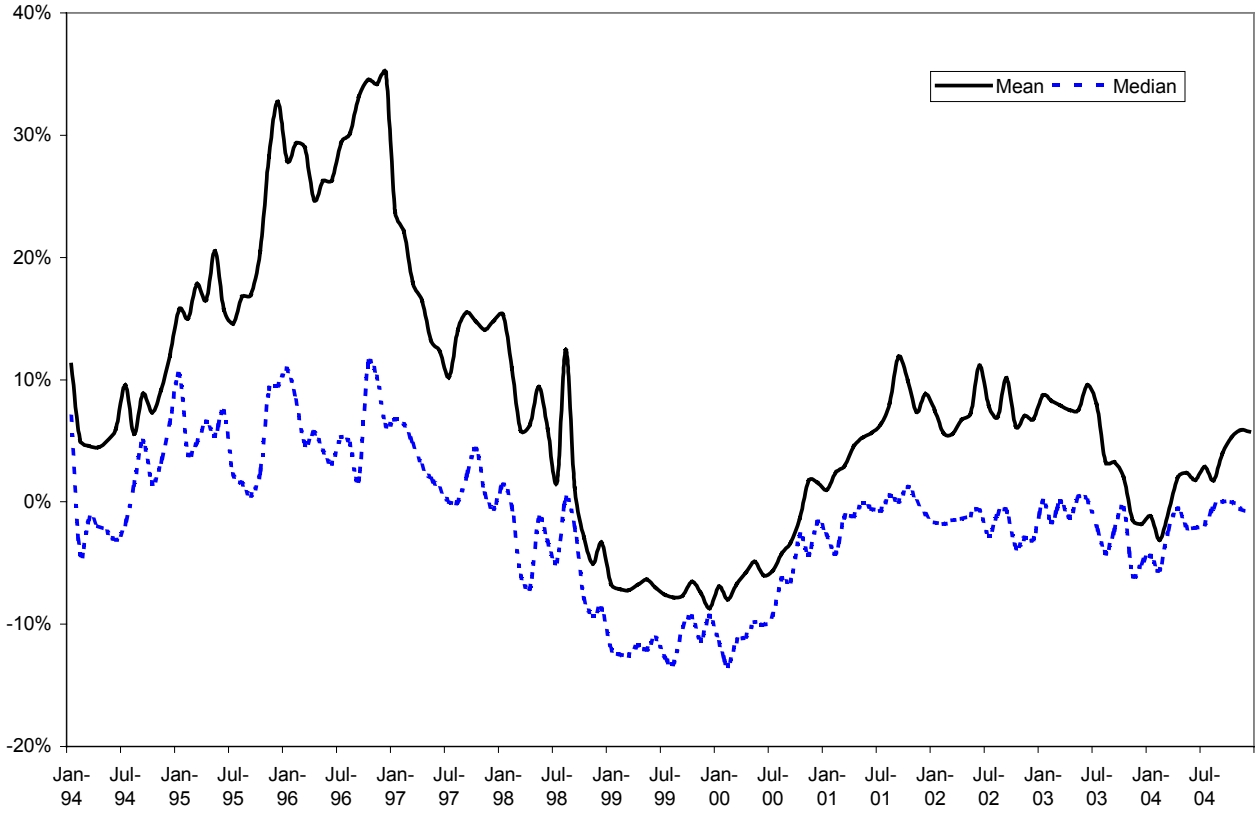

Figure 2
Proportion of Brazilian Firms with Positive and Negative Dual-Class Premia

Proportion (in %) of Brazilian firms listed on the Sao Paulo stock exchange with positive and negative dual-class premia from 1994 to 2004. The market prices come from Economatica and Datastream.