

IMPROVED CORPORATE GOVERNANCE:
MARKET REACTION AND LIQUIDITY IMPLICATIONS

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Abstract

We study the market price reaction and liquidity impact that firms experience when they are incorporated into the differentiated corporate governance listing segments of the Sao Paulo Stock Exchange. The Brazilian market is of special interest since it allows us to analyze the effect of improved governance while keeping the market microstructure unchanged. The market price reaction is positive and significant when a firm announces its decision to commit to greater transparency and minority shareholder protection. We also find that shares with voting rights experience a stronger price reaction than non-voting shares. The liquidity impact of improved governance is also positive since trading costs decrease after incorporation into the differentiated segments. This liquidity enhancement is more pronounced for shares with voting rights. Our results imply that stock exchanges can play a critical role in leading, not following, the implementation of improved governance standards in countries with weak investor protection regulation.

Preliminary draft. Please do not quote without permission from the authors

Key words

Corporate governance, special segments, event study, liquidity costs, emerging markets.

*“I defend the interests of the controlling shareholder, he pays my salary”*¹
Brazilian Executive

1. Introduction and motivation

Investor protection is frequently mentioned as a necessary condition for stock market development (La Porta et al., 1998, 2002; Shleifer and Wolfenzon, 2002; Levine and Zerbos, 1998; Rajan and Zingales, 1998). Since well-functioning stock markets are an important source of corporate financing, it is of little surprise that the growth prospects of many countries become inevitably linked to improvements in transparency and shareholder protection, both of which are key components of current corporate governance² efforts. This paper studies the link between firm value, liquidity, and the commitment to improved corporate governance standards in Brazil, an important emerging economy. Brazil is an interesting case since it has historically provided a weak investor protection environment while, recently, its stock exchange has adopted innovative measures that allow firms to reach improved governance standards.

Characterizing the relationship between owners and managers, agency theory (Jensen and Meckling, 1976) proposes that governance mechanisms are necessary in order to align managers' (agents') interests with those of the firm's owners (principals). If this is not done, agents will make decisions that will many times maximize their own utility instead of that of the firm's owners (Grossman and Hart, 1986). Initially, most research efforts concentrated on studying issues related to management's expropriation of shareholder value. However, attention is now directed towards the expropriation of creditors' and minority shareholders' value by majority or controlling shareholders. The fact that there are economic benefits of having control can be directly observed by the premiums paid for voting versus non-voting shares. Several studies have documented the benefit of control across a wide spectrum of countries (Nenova 2000, Shleifer and Vishny 1997, Zingales 1994).

Intuitively, one would expect firm value and increased investor protection to be positively correlated (Joh 2003, La Porta et al. 2002, Yermack 1996). This occurs because potential providers of funds should be willing to pay higher prices for assets that are issued by firms that offer more protection against the expropriation of cash flows. Corporate scandals in the United States and Europe have undoubtedly played an important part in the observed increased demand for accounting transparency and better protection of stakeholder rights. However, even before the Enron scandal³, regulatory agencies and stock exchanges in emerging economies had long recognized the need for improvement in their governance mechanisms as part of an on-going effort to promote the development of their capital markets. In a September 2000 interview, the President of the Brazilian Securities Commission, Jose Luis Osorio, stated that “Where minority rights are protected, the greater the value of stocks and therefore the cost of capital is

¹ Taken from the article “¿Vale la Pena el Gobierno Corporativo?”, by Carlos Vasconcellos, *AmericaEconomia*, August 2001.

² Broadly defined, corporate governance is the set of rules that govern the interaction between managers and stakeholders. Implied in this definition is the notion that the interaction should be based on the principals of fairness and transparency, since all parties wish to maximize the long-run value of the firm

³ Enron officially admitted it was being investigated by the U.S. Securities and Exchange Commission (SEC) in October 22, 2001

lower, and this is our objective". Osorio went on to say that minority investors had been "greatly disrespected". Investors agreed. A few months later, Mark Mobius, President of Templeton Emerging Markets, provided an interesting article describing what it was like to be minority shareholder in Brazil⁴.

From a market liquidity viewpoint, enhanced governance generates an environment characterized by transparency and fair rules of play that motivates stakeholders to continue providing funds since they perceive an adequate level of compensation for the risk they bear. Thus, enhanced corporate governance standards should facilitate market liquidity (Brockman and Chung, 2003). Under contrary conditions of abuse and lack of transparency, the risk-return trade-off is altered to less acceptable levels. When this occurs, minority investors are no longer willing to provide funds, resulting in less liquid capital markets. An illiquid market provides a weaker link between excess savings and corporate financing needs, and thus negatively affects economic development.

Why then, do we observe lower investor protection in countries that need liquidity the most, that is, in emerging countries? In their analysis of international joint ventures and corporate governance, Child and Rodrigues (2000) argue that financial risk for firms investing in emerging countries is greater due to institutional limitations that generate "less adequate legal regulations, as well as political risks". They go on to explain that the lack of liquid secondary markets exacerbates this risk since it impedes the quick disposal of assets in case of liquidation. Historically, a lack of credible regulatory entities and low investor protection has motivated investors to hold majority equity positions. In other words, ownership concentration, and thus control, actually became a protective mechanism against inadequate regulatory environments. This explains why a vast majority of corporations in emerging countries are majority controlled. In any case, ownership concentration has long ceased to be the remedy, and has now become a problem for many developing countries (La Porta et al 1998).

If expropriation by controlling shareholders is a possibility, then one would expect to observe mechanisms that would counter this. Indeed, there is a legal framework that protects shareholders by theoretically giving them the right to vote in shareholder meetings and to elect certain number of members of the Board of Directors. Additionally, the unification of minority shareholders into voting blocks or the incorporation of foreign institutional investors as shareholders should also allow minority owners to reduce the probability of expropriation. In practice, however, these protective mechanisms do not always play their expected roles.

Though voting rights in shareholder meetings should provide certain leverage against majority shareholders, the reality is that management, in collusion with controlling shareholders, can do much to prevent minority owners from exercising their voting rights. For example, meeting notifications requiring the physical presence of voters can arrive late or not at all. This is especially troublesome for foreign investors⁵. In other cases, the firm may refuse to provide shareholder lists to minority owners in order to prevent a more organized collusion of shareholders. Thus, shareholder meetings don't always provide the opportunity for minority voices to be heard.

⁴ Mobius, Mark, "Getting Brazil to Clean Up Its Act", Latin Finance, 2000.

⁵ Ibid.

Another form of protection is the Board of Directors, which is theoretically in charge of overseeing and auditing management. However, minority shareholders frequently find it hard to participate in this body. This exclusion of minority shareholder representation need not be illegal in nature. Since board positions are frequently voted on a seat by seat basis, the shareholder with the majority position can sequentially defeat minority owners. Thus, board composition is still determined by the controlling shareholder. In addition, the Board need not take concrete action against minority interests, since board inaction itself can have large expropriation implications. An example of this occurs when a firm goes private. A board controlled by a majority shareholder may effectively do nothing to prevent the sale of the firm at below-market prices to a party related to the controlling owner. In fact, corporate boards of directors have been found to be, on average, management controlled and passive (Cannon, 2003). In developing countries, these same conditions translate to boards being controlled by the founding family or the controlling shareholder.

Finally, the presence of large institutional shareholders may incorporate more demanding participants with higher corporate governance standards and, possibly, the voting power to enforce them. Though the presence of institutional shareholders has been documented to affect stock price behavior (Hotchkiss and Strickland, 2003), it is not as clear whether this presence affects a firm's corporate governance. If they have a sufficiently high stake in the firm, these shareholders will be active participants and, hopefully, potential allies for minority groups seeking more attention. However, as stated by Sheleifer and Vishny (1997), "The effectiveness of large shareholders...is intimately tied to their ability to defend their rights". The implication is that even large foreign shareholders may be exposed to expropriation if they hold minority equity positions. In many developing countries, the reality is that even large institutional shareholders find it hard to protect their own rights, let alone lead an effort to protect that of others.

In addition to the failure of traditional protective mechanisms in emerging economies, these markets have also been characterized by weak legal frameworks. Though there seems to be a general agreement that governance efforts should be directed towards transparency and the protection of minority rights, it has been very difficult to translate these desired improvements into explicit standards that firms need to comply by law. In part, this is explained by the fact that any reform faces political opposition from controlling shareholders keen on prolonging their expropriation possibilities (Shleifer and Wolfenzon 2002). The result is slow legal reform. Thus, regulators and corporations have had to seek alternative ways of signaling commitment to higher governance standards without necessarily having to wait for local regulation to "catch-up" to global standards. A much publicized result of this effort is the adoption of voluntary codes of conduct by corporations. These codes list a series of governance requirements which firms voluntarily try to satisfy and which are stricter than those currently mandated by local regulation. With an agreed-upon periodicity (generally, on an annual basis), each firm reports the degree of compliance with the code. Though this is an important step forward, voluntary codes in emerging economies have several important challenges to resolve. The first is that adherence need not imply full compliance, so voluntary codes may simply provide a statement of intention. In this context, annual updates of how compliance evolves are critical. However, the second challenge lies with access to this information. Compliance reports are not always

available and, when accessible, are usually not found in a centralized location. The result is that investors interested in knowing how much progress has been made by particular firms in complying with their own corporate codes may have to eventually look it up in each firm's corporate web pages. Even then, one frequently finds that compliance reports are not updated or incomplete.

An interesting alternative approach to voluntary codes is the creation of special listing segments accessible only to firms that fully comply with progressively more demanding governance requirements. In this manner, the differentiation signal is clear (a firm either lists or does not list in a special segment) and validated by a publicly observable institution (the stock exchange). Compliance is much more visible because the contrary would imply delisting. Examples of this are the Prime Standard segment in Germany and the Special Corporate Governance Levels 1 and 2 and Novo Mercado in Brazil. Originally intended for small and medium size firms in high-growth industries, the German Neue Market was launched in March 1997 and had strict listing and disclosure requirements that went beyond the regulation in place. Eventually, the Neue Market gave way to Prime Standard segment that today boasts even stricter rules. With a similar philosophy, the Brazilian Corporate Governance Levels 1 and 2 and the Novo Mercado were launched as new listing segments in December 2000. In both the German and Brazilian cases, the intention is to reduce investor concerns for lack of transparency and protection by incorporating the exchange as an agent that certifies a firm's compliance of higher corporate governance standards. This "certification" is based on the firm's periodic reporting of financial information and the steps it takes to enhance minority rights.

From a researcher's point of view, differentiated trading segments offer several positive features. First, it provides a clearly identifiable event indicating a firm's decision to adopt higher governance standards. Second, the degree of compliance is clear and discrete, instead of containing partial compliance possibilities that may exist under voluntary codes or in memberships with ethics-related organizations (Chavez et. al. 2002). Third, because all firms are listed on the exchange, market prices are available for all firms. This allows the use of market-based measures of firm value instead of accounting ones.

In this paper, we seek to empirically determine whether (1) the market assigns value to a firm's commitment to improved corporate governance and (2) there exists a liquidity impact. Our proxy for this commitment to improved governance is a firm's incorporation to the Sao Paulo Stock Exchange's Corporate Governance Levels 1 and 2, which have a set of transparency and investor protection requirements that exceed current securities regulations, and which firms adopt voluntarily⁶. For each firm, we observe the market price reaction that occurs when a firm announces its entry into the differentiated segments. We separate our analysis using two informational events: the first public release of a firm's intention to join the differentiated listing segments, and the actual incorporation date. We find evidence of a positive market reaction to news of a firm's decision to be listed in the differentiated segments. We also find that market reaction is a function of the voting rights provided by different share classes. Stocks with voting rights (ordinary or ON shares) present a stronger price reaction than stocks without voting rights (preferred or PN shares).

⁶ The compliance of entry requirements is guaranteed by the stock exchange, which provides an auditing role.

Finally, we provide evidence on the liquidity implications of adopting enhanced corporate governance standards. A quarterly total trading cost measure (LOT measure) proposed by Lesmond, Ogden and Trzcinka (1999) is estimated and contrasted before and after a firm's incorporation into the differentiated listing segments. Because it is based on the occurrence of zero returns, this liquidity cost measure only requires daily stock prices. In addition, the LOT measure incorporates explicit, implicit and opportunity costs of trading. The availability of the type of data required and the comprehensive estimation it provides makes this measure of liquidity an especially useful one for analyzing emerging markets. Our results show that a firm's incorporation into the differentiated governance segments has a liquidity-enhancing effect in the form of lower trading cost, and that this effect is greater for shares that have voting rights. This is consistent with the notion that investors will prefer to purchase financial assets issued by firms that provide a better protection of their interests.

This paper is organized as follows. Section 2 contains a description of the evolution of governance efforts in Brazil and our hypotheses. In section 3, we present our data and methodology. Section 4 shows our results. Conclusions are found in section 5.

2. Corporate Governance in Brazil and hypotheses

Governance in Brazil

Brazil has long been perceived as an emerging economy with high growth potential but important challenges. Relative to the 2002 ranking, the Global Competitiveness Report for 2003-2004 showed a decline in Brazil's standing. Its position in the Growth rankings was 54 compared to the previous 45. In addition, there is a strong contrast between foreign direct investment (FDI) and portfolio investment flows. While Brazil is preceded only by the United States and China in terms attractiveness for Foreign Direct Investment (Child and Rodrigues, 2000), the opposite has been the case for the purchasing of stocks by foreign investors. This is consistent with the long-perceived view that the Brazilian capital market, as is the case for many developing economies, needs to address issues related to transparency, investor protection and regulatory enforcement.

Historically, the Brazilian capital market has been affected by the region's economic volatility. The currency devaluations that resulted from the Latin American debt crisis of the early 1980's generated an environment characterized by high inflation and interest rates that stifled corporate borrowing. Instead of seeking financing for new projects, firms used their resources to invest in high-yield financial instruments and to accumulate wealth through equity investments. With a controlling stake, equity investments promised high capital gains, usually at the expense of minority shareholders. As has been argued by previous work [Lemmon and Lins (2003), Johnson et al. (2000)], crises tend to exacerbate expropriation of minority owners' rights on emerging economies. All in all, this decade showed little improvement in Brazilian corporate governance (Rabelo and Coutinho, 2001). During the first half of the 1990's, the investment environment changed dramatically. Recessionary conditions in the G-7 countries prompted low interest rates. This, together with the emergence of mutual funds and other institutional investors, enhanced the attractiveness of investing in the high return environment provided by emerging economies with high growth potential

and privatization programs. The inflow of capital generated an overvalued Brazilian Real, which caused the historically modest current account deficit to increase dramatically, and exports to fall. Industrial competitiveness made little headway. During this period, high interest rates prevailed, as did a corporate culture that emphasized ownership entrenchment as a protective measure against expropriation.

Brazilian firms have made intensive use of non-voting shares (preferred or PN), as opposed to voting shares (ordinary or ON). This type of ownership structure effectively allows control of the firm with a proportionally low ownership stake. Given that as little as one third of issued shares can be ON, control can be exercised while providing as little as 17% of total capital. However, even this limitation has been circumvented. Rabelo and Coutinho (2001) demonstrate how certain family groups controlled Brazilian firms with as little as 8.5% of total capital by using pyramid ownership structures. As a result, the ownership structure in Brazil has traditionally been based on the dominance of either the founding family or a large shareholder, with management control falling in the hands of either of these controllers. Even as the shareholder base is now expanding both in quantitative (number of shareholders) and qualitative (higher percentage of institutional shareholders) terms, the concentration of control in Brazil has not yet shown signs of a significant reduction. By the end of 2003, the average percentage of voting shares in the hands of the largest shareholder was 64%, while the same figure for 1998 was 58%.

In this last decade, traditional protective mechanisms such as boards of directors have done little to prevent expropriation of minority shareholder rights. A year 2000 survey on the board composition of 438 publicly listed Brazilian firms concluded that boards are small and with over extended mandate durations⁷. In addition, the dynamics between boards and management is such that only 23% of boards may be considered to be independent of management.

The concentration of control in Brazil, together with a weak regulatory environment and ineffective boards, has allowed for repeated abuses of minority shareholders. These have ranged from not allowing office space for minority shareholders' meetings, to direct "asset stripping" by purchasing shares from minority owners at below-market values. Even ADR holders were not exempt from some form of manipulation. Thus, one of the most important corporate governance issues to resolve in Brazil is the protection of minority shareholder rights⁸.

Recognizing the abuse of minority shareholders, the weak regulation protecting their rights and property, and the overall lack of transparency and information disclosure, the Sao Paulo Stock Exchange (Bovespa) has created three special listing segments for firms that voluntarily adhere to corporate governance rules that go beyond the minimum requirements set by the current Brazilian legislation: Corporate Governance Levels 1, 2 and the Novo Mercado. Of the three listing segments, the Novo Mercado (New Market) demands stricter corporate governance practices (see tables 1 and 2). As an example, one of the main innovations adopted by Novo Mercado firms is

⁷ LCV Consultoria em Governanca Corporativa e representacao de Acionistas, December 2000.

⁸ According to international fund managers and regulators, the abuse of minority shareholders by controlling groups has contributed to the decline of equity Latin American markets over the last decade. See, among others, "Storming the Castle", LatinFinance (1999), "Brazil's new rules", LatinFinance (2000), and "Bringing back Brazilian equity", a LatinFinance supplement. (2000).

that they no longer issue non-voting shares. This may partly explain why Brazilian firms with existing dual class shares have been reticent to adhere to Novo Mercado rules, with only three firms having been incorporated in this new market. Thus, to allow a progressive convergence towards stricter governance mechanisms, Bovespa created the Corporate Governance Levels 1 and 2. As table 2 shows, Level 1 basically ensures greater transparency in information disclosure than current regulation, while Level 2 includes practically the same governance standards as those in the Novo Mercado, except for the fact that firms are still allowed to maintain the non-voting shares.

The adoption of the new listing segments has been an important step for the Brazilian equity market. The two Special Corporate Governance Levels and the Novo Mercado provide concrete and standardized measures of commitment to higher governance standards that are readily observable and verifiable by all market participants.

Hypotheses

This paper studies the market reaction that occurs when firms listed in the Sao Paulo Stock Exchange announce their intention to incorporate into a differentiated corporate governance listing segment. Listing in the differentiated segments implies more transparency and quality of accounting information as well as greater protection of minority shareholder rights. When minority shareholders have their rights protected, they are willing to pay higher stock prices (La Porta, 2002). Thus, we hypothesize that there should be an increase in the value of firms that announce their commitment to improved corporate governance. This implies that,

Ho1: There will be a positive stock price reaction when a firm announces its intention to join the differentiated corporate governance levels 1 or 2.

Previous work by Nenova (2001) finds that, when the firm is undergoing a change of control, controlling stockholders share some of the private benefits of control with minority shareholders with voting rights. While this may be the case for these special situations, we believe that holders of voting shares are, in general, at least as exposed to expropriation by controlling shareholders as holders of non-voting shares. After all, buyers of ordinary voting shares not only pay for cash flow rights, but also for control rights which they may ultimately not be allowed to fully exercise. Our view is that both voting and non-voting minority shareholders are negatively affected by abuse of control. Therefore, the benefit of improved transparency and better protection from expropriation should be tangible for both groups. Thus, our second hypothesis is,

Ho2: The stock price reaction when a firm announces its intention to join the differentiated corporate governance levels 1 or 2 will be positive for voting and non-voting shares.

Finally, the incorporation of firms into a new listing segment with higher corporate governance standards than the rest of the market but identical trading environment, allows us to analyze the liquidity effect of improved corporate governance

while holding the market microstructure constant. We hypothesize that improved transparency and investor protection should decrease the asymmetric information between insiders and outsiders of the firm and, therefore, reduce trading cost. Consistent with this analysis, the literature has already documented a negative relation between investor protection and liquidity costs (Brockman and Chung, 2004; Lesmond, 2004). Therefore, our last hypothesis is that,

Ho3: Total trading costs will decline after a firm's incorporation into the differentiated corporate governance listing segments.

3. Data and methodology

We identify all firms that have been incorporated into the Special Corporate Governance Levels 1 and 2 as of December 2003 using incorporation information from Bovespa and news reports. The initial sample is composed of 34 firms represented by 62 stock issues. The historical time series of daily prices is obtained from Datastream and gathered for both ordinary and preferred shares. We also gather, as auxiliary variables, stock market capitalization computed as number of shares outstanding times end-of-quarter closing price, quarterly trading volume, end-of quarter-closing price and quarterly variance calculated using daily.

Two relevant disclosure dates are identified. The first press disclosure of a firm's decision to adhere to the new listing segments is classified as the Press Date, while the actual date of incorporation is termed Incorporation Date. To identify each firm's Press Date, we gather all news articles occurring up to 12 months before the actual incorporation date from the global provider of news Factiva. To ensure that the price reaction we analyze in our event study is directly related to the adoption of improved governance, only firms that do not present other relevant corporate events 10 days before or 10 after the press date are included. This filter generates a loss of 7 firms⁹. Table 3 shows our final sample of 27 firms and 49 issues, along with the identified disclosure dates.

The second disclosure date is the firm's actual date of incorporation into the new listing segments. This information is gathered from the Sao Paulo Stock Exchange database, and Factiva. In case where relevant event dates are not identified using these sources, the information is obtained by directly contacting the investor relations department of firms.

3.1 Event study methodology

We determine the market's assessment of a firm's adoption of higher corporate governance standards by applying event study methodology (Brown & Warner, 1980). To estimate abnormal returns around the event dates, we start by estimating the following market model regression:

⁹ Brasil Telecom Part (president's resignation), Cemig (ADR issue), Marcopolo (equity issue), Ripasa (earnings report), Suzano (earnings report), Unibanco (incorporation to B2B market), Vale R Doce (change in debt rating).

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} ,$$

where R_{it} is the return of asset i on day t and R_{mt} is the return of the Brazilian IBX general stock index on day t . In estimating the market model coefficients alpha and beta, we have adjusted for a possible ex-post selection bias (Amihud et al., 1997, Brown et al. 1995). This occurs because a firm's incorporation in the differentiated corporate governance segments may have been a natural consequence of previous efforts to progressively adopt higher governance standards. If true, the ex-ante estimation period parameters would be based on returns that already incorporate the benefits of being perceived as more transparent and protective of shareholder interests. We adjust for this possibility by using ex-post estimation period parameters. Our estimation period includes 160 observations starting on day $t=+31$ and ending on day $t=+190$.

The Abnormal return (AR) estimate of stock i at time t in the event window is calculated as:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

The abnormal returns for each stock i is aggregated over the period that starts in day T_1 and ends in day T_2 , and averaged across all stocks to obtain the mean cumulative abnormal return:

$$\overline{CAR}_{T_1, T_2} = \frac{1}{N} \sum_{i=1}^N \sum_{t=T_1}^{T_2} AR_{it} ,$$

where N is the number of stocks.

Because our sample of Brazilian firms may suffer from thin trading, distorted variance estimates may bias our results towards a rejection of the null (Cowan and Sergeant, 1996). We therefore apply the standard cross sectional test proposed by Boehmer, Musumeci and Poulsen (1991), which allows abnormal return variances to differ between the estimation and event periods, and thus adjusts for event-induced variance increases. The test statistic is calculated as¹⁰:

$$Z_t = \frac{TSAR_t}{N^{1/2}(S_{SARot})}, \text{ where}$$

$$S_{SARot} = \frac{1}{N-1} \sum_{i=1}^N \left(SAR_{jt} - \frac{1}{N} \sum_{j=1}^N SAR_{jt} \right)^2$$

where SAR_{it} is the standardized abnormal return for stock i . The SAR_{it} is aggregated for all stocks to compute the total standardized abnormal return at t :

$$TSAR_t = \sum_{i=1}^N SAR_{it} .$$

¹⁰ Cowan, Arnold R. Eventus software, version 7. (Cowan Research LC, Ames, Iowa, 2001)

As is generally the case of progressive incorporation of firms into differentiated trading environments, several groups of firms present common Press and Incorporation dates. This generates a concern for biased variance estimates due to a possible cross sectional dependence of returns among firms that share event dates. In our sample, for instance, we observe a specific date in which 10 firms, representing a total of 16 stock issues, were incorporated simultaneously. We adjust for this by forming equally weighted portfolios of all firms that share the same event date. The resulting estimation treats the common-date observations as one. This classification generates 20 portfolios for the Press Date event and 22 portfolios for the Incorporation Date.

Finally, we also include the Generalized Sign Test (Cowan, 1992) as a nonparametric analysis. This procedure tests whether there is a significant difference between the number of positive and negative abnormal returns during each event window. A nonparametric test is useful in analyses that contain samples with a small number of observations that most probably do not follow normality. In our case, this test is warranted since the construction of portfolios and the further decomposition of our initial sample into sub samples according to voting rights reduces the number of observations. In addition, the Generalized Sign Test has been found useful for stocks characterized by thin trading.

3.2 Analysis of market liquidity

We use the Lesmond, Ogden and Trzcinka (1999) limited dependent variable threshold model to estimate trading costs for the stocks in our sample. This model of trading costs is based on the occurrence of zero returns. That is, investors will trade on information concerning the value of the stock only when the return generated by the trade exceeds the costs associated with trading. Otherwise, investors will not trade, and the observed return on that stock will be zero. Thus, trading costs are a threshold that must be exceeded before investors trade upon information.

The model assumes that the market model is the generation process for returns, subject to transaction costs. That is, the true return on a security, R_i^* , the observed return, R_i , and the market return, R_m , are related as

$$R_{it}^* = \beta_i R_{mt} + e_{it}, \quad (1)$$

where

$$\begin{aligned} R_{it} &= R_{it}^* - \alpha_{1i} && \text{if} && R_{it}^* < \alpha_{1i}, && \alpha_{1i} < 0 \\ R_{it} &= 0 && \text{if} && \alpha_{1i} < R_{it}^* < \alpha_{2i} \\ R_{it} &= R_{it}^* - \alpha_{2i} && \text{if} && R_{it}^* > \alpha_{2i}, && \alpha_{2i} > 0 \end{aligned}$$

The first equation of model (1) describes the return generation process for the true return of stock i . In a market with no trading costs, returns would immediately reflect contemporaneous market-wide and firm-specific information. However, in the presence of trading costs, observed returns reflect new information up to the value of trading costs and only when the value of the information signal exceeds the cost of trading. The constraints of the model describe the relationship between the true and the

observed return. In the first and last constraints, where the absolute value of the true return exceeds the trading cost threshold, observed returns are equal to the true returns up to the value of transaction costs. The parameter α_{1i} measures the trading cost threshold that must be exceeded before investors act on negative information for stock i , while α_{2i} measures the trading cost threshold on positive information. Thus, α_{1i} and α_{2i} represent the proportional trading cost for selling and buying stock i , respectively. When the true return does not exceed the transaction cost threshold (i.e., $\alpha_{1i} < R_{it}^* < \alpha_{2i}$), the observed return on stock i is zero. This model for stock returns is thus a limited dependent variable model, censored in the middle, with two unknown parameters α_{1i} and α_{2i} . Total roundtrip trading cost for stock i , TC_i , is computed as the sum of α_{1i} and α_{2i} . The model is estimated by maximum likelihood using 3 months of daily returns for each stock-quarter in the sample. Thus, our estimation generates quarterly trading cost measures.

4. Empirical Results

4.1 Market reaction to news of incorporation into the special listing segments

Table 4 presents the event study results. We show Mean Cumulative Abnormal Returns and their cross-sectional Z statistics (in parenthesis) as well as Generalized Sign Test results and the corresponding test statistic (in parenthesis). Panel A shows our findings when the event is the first press notification of the firm's intention to join the differentiated segments (Press Date), while panel B shows results when the event is defined as the actual incorporation date (Incorporation Date). Panel A shows that there is a positive and statistically significant price reaction around the Press Date. We observe significant price increases for the (-2,+2), (-3,+3) and (-4,+4) windows surrounding the press notification. Our nonparametric results also show positive and significant results for the (-2,+2) window. These results support hypothesis Ho1 of increased value for firms that announce their commitment to improve their governance standards by listing in special segments. Panel B indicates that the information content of the actual incorporation does not prompt a market reaction. From a market efficiency viewpoint, this result is consistent with the notion that the first informational disclosure date (i.e., the Press date) must be the one that reflects the market reaction generated by an event. News of incorporation is a logical consequence, and thus already discounted by the market, of information that has been previously disseminated in the Press Date. These results contrast with those of Carvalho (2003) in that he finds a positive price reaction upon incorporation. The difference is explained by two adjustments we use in our methodology. The first is an ex-post estimation period to adjust for ex-post selection bias. The second is the grouping of firms into portfolios that share the same event date so that we correct for any bias due to cross-sectional dependence. Our results without these necessary adjustments also showed positive and significant price reaction for the incorporation date¹¹.

We interpret our results as evidence that the market perceives a firm's incorporation decision as relevant and value-enhancing. This result has important implications in that the stock exchange, through differentiated listing segments, seems to be providing a certificate of credibility that is publicly observable, and valued, by

Though not included here, this information is available upon request.

investors. Thus, stock markets can play a key role in helping firms differentiate themselves through exchange-defined governance codes in countries where governance legislation is either weak or progressing at a slow rate.

Having identified the press release as the relevant informational event, we further decompose our sample into voting (ON) and non-voting (PN) shares to determine whether market reaction to the press announcement is contingent on asset type. Results are presented in Panels C and D in table 4. Here, because of the small sample sizes, non-parametric test results are relevant. For voting (ON) shares, we observe positive and significant results for all event windows. This behavior is weaker for non-voting (PN) shares, although they nevertheless present a positive price reaction for the (-2,+2) and (-4,+4) windows. Thus, when a firm publicly announces its intention to comply with special corporate governance requirements, voting and non-voting minority shareholders are benefited. These results lead us to support hypothesis Ho2. These results are consistent with the notion that minority holders of voting (ON) shares, being the ones most affected by potential expropriation from controlling shareholders, perceive news of the incorporation decision as a signal of improved governance (more transparency and protection).

4.2 *Effect of incorporation on liquidity costs*

This section presents the liquidity implications of listing in the special governance segments. To contrast market liquidity before and after incorporation into the differentiated segments, we run the following regression model:

$$TC_{it} = \alpha_0 + \alpha_1 ENTRY_{it} + \alpha_2 TYPE_i + \alpha_3 INTERACT_{it} + \alpha_4 MCAP_{it} + \alpha_5 VOL_{it} + \alpha_6 PRICE_{it} + \alpha_7 VAR_{it} + \varepsilon_{it} \quad (3)$$

where TC_{it} is roundtrip trading cost for firm i in quarter t , expressed as percentage of value traded. $ENTRY_{it}$ is a dummy variable that is equal to 1 if firm i has already been incorporated into a special segment in quarter t , and 0 if the firm has not yet been incorporated. $TYPE_i$ is a dummy variable that takes on the value of 1 if the stock has voting rights, and 0 if it is a non-voting share. $INTERACT_{it}$ is the product of $ENTRY$ and $TYPE$. In order to account for stock-specific characteristics that affect trading costs (Stoll, 2000), we incorporate stock market capitalization (MCAP), trading volume (VOL), price level (PRICE) and return volatility (VAR) in our model. To isolate the liquidity effect of incorporation from the change in trading costs that may occur over time, we estimate model (3) with a fixed effects regression that controls for this time effect.

Our results are presented in Table 6 for two different specifications of model 3. In model specification I, the coefficient estimate for $ENTRY$, which reflects the difference in trading cost before and after incorporation, is negative and statistically significant. Thus, trading costs across all security types have decreased by 2.2% of value traded after firms have been incorporated into the improved corporate governance levels. This result is consistent with our hypothesis Ho3, that a credible and verifiable signal of commitment to improved corporate governance reduces asymmetric information costs and increases liquidity. Since we control for time and trading volume, our results can neither be attributed to the effect of the passage of time on trading costs nor to the increased trading volume that improved governance may generate. The

estimated coefficient for TYPE, measures the difference in trading costs between voting and non-voting shares. Since the TYPE coefficient is positive and significant, voting shares present higher liquidity costs than non-voting shares. In fact, voting shares are 4.42% of value traded more costly. This result is consistent with most of voting shares being concentrated in the hands of controlling shareholders, and thus, presenting a reduced free-float.

In model specification II we include the interaction variable, INTERACT, to analyze whether the liquidity effect of incorporation is influenced by share type. In this specification, the ENTRY coefficient measures the difference in liquidity before and after incorporation for non-voting shares. The negative and significant value we find indicates that there is a liquidity improvement after incorporation. That is, non-voting shares present a reduction of trading costs of 1.53% of value traded. The INTERACT coefficient measures the differential liquidity impact of incorporation for voting and non-voting shares. The negative and significant value we find indicates that voting shares experienced a larger liquidity improvement after incorporation than non-voting shares. That is, voting shares present an additional reduction in liquidity costs of 1.92% of value traded. In summary, even though both asset types benefit from enhanced governance measures, the shares with voting rights in the hands of minority owners are the ones that benefit the most.

5. Conclusions

In this paper, we observe the reaction of market prices to informational events that indicate a firm's commitment to improved corporate governance. The signal of this commitment is the announcement of incorporation into the differentiated corporate governance listing segments of the Sao Paulo Stock Exchange. Higher transparency and investor protection should increase market value since minority investors will be willing to pay higher prices for firms that offer more protection against expropriation from controlling shareholders (La Porta et. al., 2002). Because of its historically weak investor protection environment (Rabelo and Coutinho, 2001), we find Brazil to be an especially interesting country in which to study the effect of enhanced governance on firm value.

We also investigate the relation between corporate governance and market liquidity. The creation of special listing segments provides a unique opportunity to analyze the effect of improved governance standards on market liquidity while keeping market microstructure conditions unchanged. Transparency and investor protection are important for potential providers of funds, since they decrease the asymmetric information that exists between insiders and outsiders of the firm. Lower asymmetry of information implies lower trading costs. To test our hypothesis, we estimate a comprehensive trading cost measure (Lesmond et al., 1998) and analyze how quarterly trading costs are affected by a firm's decision to adopt enhanced governance.

Our event study results indicate that the stock market greeted the news of a firm's commitment to improved corporate governance as a value-enhancing decision. The price reactions we observe when incorporation intentions become public knowledge are positive, significant, and directly related to the intended adoption of more rigorous corporate governance standards. When we further disaggregate our sample according to

voting rights, voting shares in the hands of minority shareholders¹² present a stronger price reaction than non-voting shares. We conclude that those that are at higher risk of having their rights expropriated (i.e., minority holders of voting shares) assign greater value to a credible signal of higher governance standards. In any case, since both types of securities experience a positive price reaction to news of incorporation, our work provides market-based evidence that improved governance increases firm value. This market validation is an important signal for many developing economies with high growth prospects but still immersed in resolving their weak investor protection environment.

This paper also shows that a trading environment characterized by enhanced corporate governance improves market liquidity. Our conclusion is based on the observation that total trading costs decrease after incorporation into the new governance segments. This result holds for voting and non-voting shares. We also find that, though voting shares are 4.98% of value traded more costly than non-voting shares prior to incorporation, this difference is reduced by 1.92% of value after the stocks are listed in the new governance segments. Thus, shares with voting rights seem to benefit relatively more from higher transparency and better investor protection.

In summary, publicly verifiable signals of commitment to greater transparency and investor protection, such as incorporation to special listing segments, seem to provide information that is positively valued by market participants. Firms that are incorporated into differentiated corporate governance segments experience a value increase that is also accompanied by a liquidity enhancement. Both benefits are stronger in shares that contain voting rights. These results are important for regulators, stock exchanges and investors, since they imply that market-driven measures can compensate for a weak legal framework. Requirements that must be met and maintained in order to join, and continue to list, in special listing segments may be a viable way, supplied by exchanges, for countries to comply with global corporate governance standards. Thus, stock exchanges can lead, not follow, the implementation of improved governance standards in countries with weak investor protection regulation.

¹² Shares held by controlling shareholders typically are not part of the float.

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Table 1: Comparing Current Brazilian Legislation and Novo Mercado

| | Current Brazilian Legislation | Novo Mercado |
|--|---|--|
| Issuance of Non-voting shares | Permitted | Not permitted |
| Minimum free-float requirement | No | 25% of capital |
| Tag-along rights for minority shareholders | No | Yes |
| Board of Directors | One to three year mandate | One year mandate |
| International accounting standards | Not required to adhere to international accounting standards | Annual Balance sheet in accordance with US GAAP or IAS |
| Accounting information requirement | Audited statements for controlling firm, subsidiary information need not be included and consolidated | Consolidated financial statements |
| De-listing | Permitted | De-listing from Novo Mercado done through tender offer using the economic value criteria |

Table 2: Requirements for Corporate Governance Levels 1, 2 and Novo Mercado

| Requirements for Corporate Governance Level 1 |
|---|
| • Minimum free float of 25% of capital |
| • Public offering for the placing of shares maximize “capital dispersion to a broader spectrum of shareholders” |
| • Improved disclosure of quarterly information, consolidated statements and audits |
| • Disclosure of insider and controlling shareholders’ trading |
| • Disclosure of shareholder agreements and stock option programs |
| • Facilitate annual calendar of corporate events |
| Additional Requirements for Corporate Governance Level 2 |
| • One year mandate for Board of Directors |
| • Annual Balance sheet in accordance with US GAAP or IAS |
| • Tag-along rights for minority shareholders |
| • Voting rights to preferred shareholders in the event of a merger or acquisition, spin-off, or the signing of contracts with firms belonging to the same group |
| • De-listing from Level 2 through tender offer using the economic value criteria |
| • Adherence to the Market Arbitration Panel for conflict resolution |
| Additional Requirement for Novo Mercado |
| • Firms can only issue shares with voting rights |

Table 3: Descriptive information

This table presents descriptive information for our sample. We list each stock issue, the industry to which the issuing firm belongs, the date of entry into the special governance listing segment and the corporate governance level that the firm joined. Finally, we also include each issue's market capitalization (in millions of USD) at end of 2003 (the date by which all firms in our sample had already been incorporated into the special segments.

| Firm | Industry | Entry date | Level | Market Cap. |
|-----------------|-------------------------|------------|-------|-------------|
| Alpargatas on | Apparel and Footwear | 20030715 | 1 | 63.24 |
| Alpargatas pn | Apparel and Footwear | 20030715 | 1 | 71.03 |
| Aracruz on | Pulp and paper | 20020416 | 1 | 1147.12 |
| Aracruz pna | Pulp and paper | 20020416 | 1 | 112.33 |
| Aracruz pnb | Pulp and paper | 20020416 | 1 | 197.16 |
| Bradesco on | Banking | 20010626 | 1 | 3707.98 |
| Bradesco pn | Banking | 20010626 | 1 | 4127.49 |
| Bradespar on | Financial Holding | 20010626 | 1 | 267.19 |
| Bradespar pn | Financial Holding | 20010626 | 1 | 322.01 |
| Brasil Telec on | Telecom | 20020509 | 1 | 1373.73 |
| Brasil Telec pn | Telecom | 20020509 | 1 | 1550.26 |
| Brasil T par on | Telecom | 20020509 | 1 | 844.06 |
| Brasil T par pn | Telecom | 20020509 | 1 | 1660.42 |
| Braskem on | Petrochemicals | 20030213 | 1 | 415.31 |
| Braskem pna | Petrochemicals | 20030213 | 1 | 996.91 |
| Braskem pnb | Petrochemicals | 20030213 | 1 | 3 |
| Cedro on | Textile | 20031002 | 1 | 18.38 |
| Cedro pn | Textile | 20031002 | 1 | 11.08 |
| Celesc on | Electric utility | 20020626 | 2 | 85.73 |
| Celesc pna | Electric utility | 20020626 | 2 | 5.42 |
| Celesc pnb | Electric utility | 20020626 | 2 | 121.38 |
| Cemig on | Electric utility | 20011017 | 1 | 907.32 |
| Cemig pn | Electric utility | 20011017 | 1 | 1661.49 |
| Cia Hering on | Apparel | 20021213 | 1 | 31.65 |
| Cia Hering pn | Apparel | 20021213 | 1 | 13.01 |
| Confab on | Iron and steel products | 20031219 | 1 | 33.96 |
| Confab pn | Iron and steel products | 20031219 | 1 | 122.41 |
| Gerdau on | Steel | 20010626 | 1 | 924.06 |
| Gerdau pn | Steel | 20010626 | 1 | 2039.35 |
| Gerdau Met on | Steel | 20030625 | 1 | 286.99 |
| Gerdau Met pn | Steel | 20030625 | 1 | 638.07 |
| Itaubanco on | Banking | 20010626 | 1 | 5345.52 |
| Itaubanco pn | Banking | 20010626 | 1 | 5436.73 |
| Itausa on | Banking | 20010626 | 1 | 1450.41 |
| Itausa pn | Banking | 20010626 | 1 | 2402.72 |
| Klabin on | Pulp and paper | 20021210 | 1 | 384.63 |
| Klabin pn | Pulp and paper | 20021210 | 1 | 780.74 |
| Marcopolo on | Transp. equipment | 20020903 | 2 | 65.52 |
| Marcopolo pn | Transp. equipment | 20020903 | 2 | 115.4 |
| Mangels on | Iron and steel products | 20030321 | 1 | 2.69 |
| Mangels pn | Iron and steel products | 20030321 | 1 | 9.83 |
| Net on | Cable TV | 20020627 | 2 | 1424.02 |
| Net pn | Cable TV | 20020627 | 2 | 376.96 |
| Perdigao on | Food products | 20010626 | 1 | 85.82 |
| Perdigao pn | Food products | 20010626 | 1 | 248.71 |
| Randon Part on | Transp. equipment | 20010626 | 1 | 47.1 |
| Randon Part pn | Transp. equipment | 20010626 | 1 | 96.95 |
| Ripasa pn | Pulp and paper | 20011112 | 1 | 221.92 |
| Rossi Resid on | Construction | 20030205 | 1 | 58.73 |

| | | | | |
|-------------------|------------------|----------|---|----------|
| Sadia on | Food products | 20010626 | 1 | 357.69 |
| Sadia pn | Food products | 20010626 | 1 | 585.05 |
| Trans Paulista pn | Electric utility | 20020918 | 1 | 414.48 |
| Unibanco on | Banking | 20010626 | 1 | 1916.52 |
| Unibanco pn | Banking | 20010626 | 1 | 1370.41 |
| Unibanco unit | Banking | 20010626 | 1 | 0.05 |
| Vale R Doce on | Mining | 20031212 | 1 | 14621.15 |
| Vale R Doce pna | Mining | 20031212 | 1 | 7038.77 |
| VCP pn | Pulp and paper | 20011114 | 1 | 1083.21 |
| Vigor pn | Food products | 20011004 | 1 | 7.12 |
| Weg on | Machine & Equip. | 20010626 | 1 | 490.88 |
| Weg pn | Machine & Equip. | 20010626 | 1 | 546.51 |
| CCR Rodovias on | Transportation | 20020201 | 3 | 755.11 |
| SABESP on | Utility | 20020424 | 3 | 1603.78 |

Table 4: Market Reaction to Improved Corporate Governance

This table presents event study results for different event scenarios. All panels present Mean CARs with their respective cross-sectional Z statistics (in parenthesis), as well as the Generalized Sign Test indicating the number of positive and negative CARs, and the corresponding test statistic (in parenthesis). All results are generated a 160 day ex-post estimation period starting at day +30 (30 days after the event). Firms with common event dates have been grouped into portfolios. Panel A tests the null of zero abnormal return when news of a firm's decision to list is published in the press. Panel B tests the null of zero abnormal return when firms are incorporated into the special listing segments. Under the press release scenario, Panels C and D disaggregate the data according to type of issue and test the null of a zero abnormal return for Ordinary shares in panel C and preferred shares in panel D. Only firms that have both ON and PN shares are included. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

| Panel | Event | Test | (-1,+1) | (-2,+2) | (-3,+3) | (-4,+4) | (-5,+5) | (-10,+10) |
|-------|---------------------------------|-----------------------------------|-----------------|-------------------|-------------------|-------------------|-----------------|-----------------|
| A | Press Date (N=20) | Mean CAR (CS Z-stat) | 0.51* (1.52) | 1.16** (1.99) | 1.91** (1.80) | 3.04** (1.73) | 2.38 (1.01) | 1.87 (0.54) |
| | | POS:NEG (Z _G -stat) | 13:7* (1.55) | 15:5*** (2.45) | 11:9 (0.66) | 12:8 (1.11) | 10:10 (0.21) | 10:10 (0.21) |
| B | Incorporation Date (N=22) | Mean CAR (CS Z-stat) | 0.78* (1.41) | 0.65 (0.94) | 0.78 (1.02) | 1.28 (1.26) | 0.96 (0.93) | 0.79 (1.21) |
| | | POS:NEG (Z _G -stat) | 13:9 (1.38) | 11:11 (0.52) | 11:11 (0.52) | 11:11 (0.52) | 10:12 (0.09) | 12:10 (0.95) |
| C | Press Date ON (N=13) | Mean CAR (CS Z-stat) | 2.71* (1.59) | 3.86** (2.01) | 4.18*** (2.38) | 3.33** (1.77) | 2.82* (1.56) | 2.82* (1.29) |
| | | POS:NEG (Z _G -stat) | 9:4** (2.00) | 11:2*** (3.12) | 11:2*** (3.12) | 10:3*** (2.56) | 9:4** (2.00) | 9:4** (2.00) |
| D | Press Date PN (N=13) | Mean CAR (CS Z-stat) | 0.00 (0.01) | -0.05 (-0.002) | 1.65 (1.04) | 1.81 (1.03) | 1.73 (1.02) | 2.54 (1.20) |
| | | POS:NEG (Z _G -stat) | 6:7* (-0.02) | 8:5*** (1.08) | 9:4* (1.64) | 10:3** (2.19) | 9:4* (1.64) | 7:6 (0.53) |

Table 5: Impact of Corporate Governance of Stock Market Liquidity

Using total trading cost (TC) as the dependent variable, we study the liquidity impact of incorporation into special corporate governance segments. Estimates, adjusted for differences in stock characteristics (economic variables), are obtained from the following regression:

$$TC_{it} = \alpha_0 + \alpha_1 \text{ENTRY}_{it} + \alpha_2 \text{TYPE}_i + \alpha_3 \text{INTERACT}_{it} + \alpha_4 \text{MCAP}_{it} + \alpha_5 \text{VOL}_{it} + \alpha_6 \text{PRICE}_{it} + \alpha_7 \text{VAR}_{it} + \varepsilon_{it}$$

Roundtrip mean trading cost estimates are expressed as a percentage of value traded and are estimated using the Lesmond et al. (1999) methodology. ENTRY is a dummy variable that takes on the value of 1 if the corresponding quarter of the year occurs after the firm's incorporation, and zero (0) if it occurs before incorporation. TYPE is a dummy variable with a value of 1 if asset is an ordinary (ON) stock and 0 if it is a preferred (PN) stock. INTERACT is obtained as the product of ENTRY and TYPE. MCAP is market value, in millions of dollars, VOL, measured in millions of dollars, is quarterly trading volume; PRICE is end-of-quarter closing price; VAR is quarterly variance for local daily returns. N is the number of stock-quarters. Standard errors are corrected for heteroskedasticity (p-values are in parentheses). ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | Model Specification I | Model Specification II |
|-----------------------|--------------------------|--------------------------|
| INTERCEPT | 5.31*** (0.000) | 5.12*** (0.000) |
| ENTRY | -2.20*** (0.000) | -1.58*** (0.000) |
| TYPE | 4.42*** (0.000) | 4.98*** (0.000) |
| INTERACT | - | -1.92* (0.055) |
| MCAP | 0.00006 (0.11) | 0.00006 (0.13) |
| PRICE | -0.034*** (0.000) | -0.033*** (0.000) |
| VOL | -0.000000002** (0.02) | -0.000000002** (0.02) |
| VAR | 981*** (0.000) | 980*** (0.000) |
| Time effect (p-value) | (0.001) | (0.001) |
| N | 1228 | 1228 |
| Adj R ² | 19% | 19% |