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Can a stock exchange improve corporate behavior? Evidence from firms' migration to premium listings in Brazil

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ABSTRACT

Because Brazil's legal system lacked protection for minority shareholders and trading of Brazilian shares flowed to U.S. exchanges, in 2001 the São Paulo Stock Exchange, Bovespa, created three premium exchange listings that require more stringent shareholder protections. This paper examines the effects of a commitment to improved corporate disclosure and governance by firms' voluntary migration to these premium listings. Our analysis finds that a firm's migration brings positive abnormal returns to its shareholders, particularly when its shares did not have a prior cross-listing on a U.S. exchange and also when the firm chooses a premium listing with the highest standards. Migration to a premium listing also leads to a significant increase in the trading volume of non-voting shares. Firms that choose a premium listing tend to have growth opportunities that they finance with subsequent seasoned equity offerings. These results suggest that a premium listing is a mechanism for bonding to improved corporate behavior that can be less costly than cross-listing on a U.S. exchange.

1. Introduction

This paper examines an initiative by a private stock exchange in a large developing country that permitted its listed corporations to commit to improved standards of transparency and corporate governance. We analyze the changes in share values and share trading volumes of the corporations that voluntarily chose the exchange's higher standards. Also, we study the characteristics of these corporations and how they differed from those of corporations that did not choose the improved standards. Our empirical results shed light on whether a domestic stock exchange can provide a credible mechanism that can bond corporations to better protect their minority shareholders.

Empirical research has shown that protecting minority shareholders is critical to the development of a country's capital markets (La Porta et al., 1997; Gleaser et al., 2001). In turn, capital market development has been linked to improved resource allocation (Wurgler, 2000) and economic growth (Levine and Zervos, 1998). In contrast, when minority shareholders lack protection and are subject to expropriation by controlling shareholders, markets for raising new shareholders' equity can break down (Shleifer and Wolfenzon, 2002). The possibility of expropriation together with poor disclosure of corporate activities also can deter investors from trading in a corporation's shares, thereby reducing liquidity. Illiquid shares further increases a corporation's cost of issuing new equity (Amihud and Mendelson, 1986; Bekaert et al., 2007).

In an environment where minority shareholders are poorly protected, a potential remedy is to reform the country's securities laws (La Porta et al., 2006). However, legislative reforms often are difficult to implement: improving minority rights can reduce the value of control that some powerful majority shareholders exert over particular firms. These controlling shareholders frequently are successful in blocking legislative changes, even when the majority owners of other firms favor the reforms (Bebchuk and Roe, 1999).

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In the absence of legal reforms, firms that wish to lower their cost of raising external capital may seek ways to commit to a higher standard of corporate behavior. Coffee (1999) and Stulz (1999) propose that a firm could adopt the higher legal standards of a foreign country via a cross-listing of its shares. For example, a firm could cross list its shares on the New York Stock Exchange (NYSE) or NASDAQ through an American Depository Receipt (ADR). This subjects the firm to U.S. Securities and Exchange Commission (SEC) requirements, such as conforming with U.S. GAAP accounting, submitting to SEC enforcement actions, and providing shareholders the right to bring lawsuits in U.S. courts.

While there is a substantial literature examining whether foreign cross-listings "bond" a firm to higher standards of corporate behavior,[2] a less-recognized, alternative bonding mechanism may be available to a firm if its domestic stock exchange establishes separate exchange listings that set and enforce rules that exceed those required by its country's laws. By voluntarily choosing a "premium" exchange listing, a firm can pledge to better protect its minority shareholders. Such a bonding mechanism is the focus of this paper. We study the premium exchange segments created in 2001 by Brazil's Bovespa (São Paulo Stock Exchange) and analyze the stock values and stock trading volumes of the firms that chose to list on them. We also explore which characteristics may have led firms to seek a premium listing.

Examining the impact of premium listings in Brazil is particularly interesting and important because Brazil's standards for protecting minority shareholders were very low. In a ranking of 49 countries based on their 1997 corporate standards, Nenova (2003) places Brazil 24th in terms of investor rights, 43rd in terms of enforcement of corporate law, and 40th in terms of accounting standards. Moreover, because Brazilian law allows for both voting and non-voting shares, many Brazilian corporations are controlled by majority shareholders who own a small overall equity stake but a majority of the corporation's voting shares.[3] Examples of expropriation of minority shareholders by these dominant shareholders are common. Consistent with these opportunities for expropriation, Dyck and Zingales (2004) estimated the benefits of corporate control based on a sample of 393 controlling block transactions in 39 different countries. They found that Brazil was the country having the greatest average control benefits.

In such an low investor protection environment, it is not surprising that some Brazilian firms that wished to raise new equity capital might want to pledge better protection of their minority shareholders by cross-listing their shares on a U.S. exchange.[4] At the start of 2001, approximately 37% of the trading volume in Brazilian shares was occurring on U.S. exchanges.[5] Bovespa's creation of premium listings in June 2001 was partly a reaction to this competition. To make its stock market more "investor friendly" and yet attractive for different types of Brazilian firms, Bovespa responded by designing a menu of three new premium listings in addition to maintaining its traditional listing.[6]

Bovespa was not the first stock exchange to establish premium listings, but it was the first to allow previously-listed firms to voluntarily commit to the higher standards of a premium exchange listing. In 1997, the Deutsche Börse (Frankfurt Stock Exchange) created a premium listing called the Neuer Markt, but it was targeted to small, growth companies seeking a first-time exchange listing, not for previously-listed firms.[7] In March 2001, the Milan Stock Exchange launched the STAR designation, but it was restricted to mid-cap firms whose existing governance standards exceeded those of the ordinary exchange.[8] Firms given a STAR designation did not voluntary commit to improving or maintaining higher standards. In contrast, a Brazilian firm that chooses a Bovespa premium listing must have its controlling shareholders and managers sign a contract with Bovespa that commits the firm to higher standards. Bovespa can delist a firm that fails to maintain a contract's financial disclosure and new share offering requirements.[9] Moreover, a firm that is accused by its minority shareholders of violating a contract's higher-level corporate governance or investor protection standards faces mandatory arbitration. Such disputes are settled by the Brazilian arbitration panel Câmara de Arbitragem do Mercado (CAM).[10] A decision by CAM is final and has the same authority as a ruling from Brazil's highest court. CAM can require the corporation's controlling shareholders and/or managers to pay financial compensation.

While numerous studies have analyzed a firm's decision to cross-list its shares on a foreign exchange, our paper is the first to investigate a firm's choice of a domestic premium listing designed solely to set a higher standard of disclosure and corporate governance. Because there can be multiple reasons why a firm establishes a foreign listing, our study of firms' migration to a domestic premium listing allows us to better identify the specific impact of a firm's commitment to greater shareholder protection. We focus on three aspects of a firm's shares at the time of migration: abnormal share returns; changes in dual-class shares' voting (control) premium; and changes in shares' trading volumes. We also consider the characteristics of firms that chose to migrate.

[2] Benos and Weisbach (2004), Ribstein (2005), and Karolyi (2006) review this literature.

[3] As of the year 2000, 89% of Bovespa-listed corporations issued non-voting shares, representing 54% of all shares listed on Bovespa and the vast majority of the exchange's trading volume (Nenova, 2005).

[4] Reese and Weisbach (2002) found that firms from countries with weak legal systems were more likely to cross-list on a U.S. exchange and, following their cross-listing, were likely to significantly increase their equity offerings.

[5] This estimate is from Bovespa. The high U.S. volume is consistent with the evidence in Halling et al. (2008) who find that trading in U.S. cross-listed shares is relatively high for firms from countries that have a low degree of financial development and investor protection.

[6] See Coffee (2002) and Craig Kamin and Jonathan Karp "Brazilian Market Tries Friendly Approach," *The Wall Street Journal* May 10, 2002.

[7] See Bottazzi and Da Rin (2002) for a description of European 'New Markets.' Burghof and Hunger (2004) discuss the most prominent of them, Germany's Neuer Markt.

[8] Gleason et al. (2007) find that a portfolio of STAR firm stocks outperformed a portfolio of non-STAR firm stocks over the three years following STAR designation. They also find marginally significant positive abnormal returns on stocks of less than one-half of a percent at the time of their STAR designations. These relatively small returns may be due to little new information being revealed about STAR firms' governance standards and due to a STAR designation providing little commitment to maintaining higher standards.

[9] Such a delisting occurred for the airline company, Varig, that chose a Level 1 premium listing.

[10] Accusations of breaching a Level II or Novo Mercado premium listing standard leads to such arbitration. Arbitration Law 9307/96 requires that CAM reach a decision within 180 days.

The remainder of the paper is as follows. Section 2 provides a description of Bovespa's premium listings, compares them to a U.S. cross-listing, and discusses hypotheses regarding their effects on a migrating firm's shares. Section 3 explains the empirical methods that are used to test these hypotheses and to analyze the characteristics of the firms that chose to migrate. Section 4 describes the data, and the results are presented in Section 5. Section 6 concludes.

2. Premium listings, cross listings, and hypotheses

2.1. Bovespa's premium listings

In 2001 Bovespa created three new premium listings in addition to maintaining its traditional listing. A premium listing could be chosen by a corporation that migrates from Bovespa's traditional listing or by a corporation seeking a first-time listing following its initial public offering (IPO). The Appendix details the requirements for the three premium listings, which we now summarize.

Novo Mercado is Bovespa's premium listing that has the highest standards. Corporations that list on it must sign a contract that requires: the issuance of only voting shares; a minimum of 25% of all shares must be listed and not controlled by majority shareholders; a Board of Directors having terms of two years or less without staggered elections; financial statements that accord with U.S. GAAP or IAS GAAP principles; the same conditions provided to majority shareholders in a transfer of the controlling stake (takeover) must be given to all shareholders (tag-along rights); in the case of a privatization or delisting, tender offers must be made for all outstanding shares at their economic values; and trades by controlling shareholders and senior managers are subject to disclosure rules.

Recognizing that Novo Mercado's standards may be too stringent for many Brazilian firms, Bovespa also created two other intermediate premium listings: Niveis Diferenciados de Governança Corporativa 1 and 2, referred to as Level (Nível) 1 and 2. As mentioned earlier, almost 90% of Bovespa-listed firms had non-voting shares.[11] Level 2 accommodates this situation by maintaining all of Novo Mercado's requirements except Level 2 allows non-voting shares. Level 1 is the least restrictive and focuses on improved disclosure standards, including provision of financial information on a quarterly frequency. Level 1 also requires a firm to make share offerings available to a wide spectrum of investors.

By creating these various premium listings whose requirements were enforced by Bovespa or mandatory arbitration, a menu of corporate behavior standards became available to firms that wished to separate themselves from others. With the opening of premium listings on June 26, 2001, 15 companies migrated from the traditional listing to the Level 1 listing. As of December 2006, Level 1 had 36 firms that had migrated from Bovespa's traditional listing. Level 2 had a total of 14 firms, with 7 of them having migrated from a traditional listing and 7 others having been first listed at the times of their IPOs. Novo Mercado had a total of 44 firms, of which 10 were due to migrations and 34 were IPOs.[12] By the end of 2006, approximately 25% of all Bovespa-listed firms had chosen a premium listing, and premium-listed firms accounted for 58% of Bovespa's total market capitalization.

2.2. Comparison to U.S. cross-listings

Initial research on why firms chose to cross-list on a U.S. exchange focused on reducing cross-border market segmentation: cross-listing might raise the value of a firm's shares by lowering U.S. investors' transactions costs and by reducing information asymmetries due to coverage from U.S. security analysts.[13] More recently, the "bonding" hypothesis of Coffee (1999) and Stulz (1999) has garnered support: a firm's share value might be raised by cross-listing due to the higher legal standards of a U.S. exchange listing (legal bonding) and/or the enhanced market discipline due to closer scrutiny and monitoring of the firm's behavior by analysts and the media (reputational bonding).

The market segmentation versus bonding effects of cross listings can be distinguished by differentiating between firms that establish ADRs listed on the NYSE or NASDAQ versus those whose ADRs are listed on the over-the-counter OTC "Pink Sheets" market or are in the form of privately-placements traded on PORTAL. The former ADRs require SEC registration while the latter ones do not. Thus, an OTC (or privately-placed) cross-listing provides a firm with low cost access to U.S. investors but not the legal bonding obtained with an NYSE/NASDAQ listing. Consistent with a bonding effect, Miller (1999) found that firms announcing NYSE/NASDAQ ADRs experienced average abnormal stock returns of 2.63%, while those announcing OTC-listed ADRs experienced average abnormal stock returns of 1.27%.[14] Similarly, other research finds that cross-listed firms that choose NYSE/NASDAQ, rather than OTC, ADRs and are located in countries with poorer investor protections tend to have higher Tobin's q (Doidge et al., 2004) and are more likely to terminate poorly performing CEOs (Lel and Miller, 2008).

[11] With the intention of simulating capital market development, Brazilian legislation during the late 1960s and early 1970s provided substantial subsidies to firms that listed their shares on a stock exchange. However, ownership concentration was encouraged by permitting the issuance of non-voting shares. In 1976, changes in Corporate Law 6404 raised the limit for non-voting shares from the previous 50% to 66.7% of total shares, so that a controlling shareholder owning a majority of voting shares would require as little as 16.7% of the firm's total shares. In 2001, the maximum percentage of non-voting shares was returned to 50%.

[12] From 2001 through 2006, there were a total of 43 Brazilian IPOs. The two IPOs that chose traditional listings were off-shore companies listed as Brazilian Depository Receipts which were unable to choose a Bovespa premium listing due to legal restrictions. Moreover, various Brazilian regulations explain why each of seven firms that chose a Level 2 IPO were prevented from choosing Novo Mercado.

[13] Karolyi (1998) reviews this research.

[14] In addition, firms from emerging markets that established ADR programs on average experienced higher abnormal returns than did firms from developed markets, 1.54% versus 0.87%.

Given the evidence that cross-listing on a U.S. exchange serves as a bonding mechanism and that many Brazilian firms have established such cross-listings, a natural question is why would a Brazilian firm choose a Bovespa premium listing? There are at least four reasons why a premium listing may be relevant. First, there have been challenges to the view that a cross-listing on a U.S. exchange is an effective bonding mechanism. Licht (2003) and Siegel (2005) dispute the notion that the SEC has effectively enforced protections for minority shareholders of cross-listed foreign firms. Leuz (2006) argues that foreign firms need only produce financial statements that can be reconciled with U.S. GAAP, which is weaker than producing full U.S. GAAP reports.

Second, whether or not a U.S. cross-listing provides effective bonding, the standards of Bovespa premium listings are different and varied and, therefore, the level of bonding may be different. The disclosure requirements of a Level 1 listing differ from those of a U.S. cross-listing, while Level 2 and Novo Mercado listings require corporate governance standards much higher than those of a U.S. cross-listing. Third, there are direct costs of establishing a cross-listing but no costs for choosing a premium listing. Miller (1999) notes that an initial cross-listing fee alone could exceed $1 million. In addition, there are continuing annual listing fees for the major U.S. exchanges and also costs of establishing an ADR with a depository bank.[15] In contrast, there is no incremental fee when a firm migrates to a premium listing from Bovespa's traditional listing.

Fourth, while the standards of premium and cross listings differ, it may not necessarily be the case that a particular firm may wish to chose one or the other. The premium listing and cross listing standards may be complements, rather than substitutes. Leuz (2006 p. 290) notes that, unlike U.S. firms, foreign firms that cross-list on NYSE/NASDAQ are not required to report financial statements quarterly *unless* they are required to do so at home. Thus, a Level 1 premium listing, which requires quarterly reporting, can complement cross-listing on a U.S. exchange in that U.S. GAAP conforming reports would be required on a quarterly, rather than annual, basis. Hence, there may be a rationale for firms to benefit from both premium and U.S. cross-listings.

Therefore, it may be unsurprising that some Brazilian firms have chosen a U.S. exchange listing, others have migrated to one of Bovespa's premium listings, and still others have done both. As shown in Table 1, of the 42 companies in our sample that migrated to one of Bovespa's premium segments during 2001 to 2006, ten had a prior NYSE cross-listing and another seven established an NYSE listing after migrating.[16] Eleven additional migrating companies had prior ADRs that traded in the OTC market. The remaining 14 migrating companies had no prior U.S. listing nor did they establish one (as of the beginning of 2007 when our empirical analysis ends) following migration. As of 2007, there were 10 Brazilian firms cross-listed on the NYSE that had not migrated to a premium listing.

2.3. Hypotheses

Doidge et al. (2004) and Östberg (2006) model environments where a firm's controlling shareholder can expropriate wealth from its existing minority investors. However, the firm also may have valuable growth opportunities that require additional funding from minority investors. If these growth options are sufficiently plentiful, its controlling shareholder optimally chooses to limit his ability to expropriate minority investors in order to reduce the (agency) costs of funding growth opportunities. Cross-listing on a U.S. exchange or voluntarily migrating to one of Bovespa's premium listings may be a bonding mechanism for limiting expropriation. Assuming that investors do not fully anticipate the firm's decision to migrate, it should impact the value of the firm's existing shares and its shares' trading volume.

As mentioned earlier, most Brazilian firms issue dual-class shares: voting shares (denoted ON) and non-voting shares (denoted PN). A controlling family or institution typically holds a majority of a firm's voting shares with the remaining voting shares held in infrequently-traded, small blocks by institutional investors, such as domestic banks and foreign and domestic investment funds. These institutional investors tend to have greater information and bargaining power compared to non-voting shareholders. It is not uncommon for minority voting shareholders to sue controlling shareholders, with these lawsuits decided by Brazil's securities regulator, the Comissão de Valores Mobiliários (CVM). Hence, minority holders of voting shares may be less susceptible to expropriation, particularly when control of the firm changes hands or is taken private by the controlling shareholder (Nenova 2005). They may be able to force the majority owner to share some of the control rents.

Under current Brazilian law, a firm's non-voting shares cannot exceed one-half of its total equity capital.[17] Ownership of non-voting shares tends to be more widely dispersed than voting shares and trading volumes are higher. Dispersed ownership, less access to firm information, along with a lack of voting privileges, gives non-voting shareholders little bargaining power vis-à-vis the controlling owner. They are more likely to be subject to expropriation, especially during changes of control and going-private transactions.

To the extent that migration is a bonding mechanism that limits the majority shareholder's control and enhances the firm's ability to undertake growth options, we expect that two main factors will affect the value of minority shares. First, improved governance and disclosure reduces the probability that the dominant shareholder extracts value from minority shareholders. Second, migration can signal the desire to invest in valuable growth opportunities that will increase the per share value of the firm.

Since non-voting shares are more susceptible to expropriation, their values should increase the most when a firm migrates. While the additional growth opportunities that are signaled by migration would tend to raise the value of voting shares, their value

[15] See Macey and O'Hara (2002) for an analysis of exchange listing fees and listing requirements, particularly those of the NYSE.

[16] None of the migrating firms had a prior NASDAQ cross-listing nor was one established following migration.

[17] Non-voting shares also must be given at least one of the following three rights: 1) payment of dividends equal to at least 110% of the dividends paid to voting shares; 2) payment of dividends of at least 25% of net income; 3) at least 80% of the rights obtained by the controlling shareholders on the transfer of the control of the company (partial tag along rights).

Table 1
Sample of migrating firms.

Firm/industry [a]	Event date [b]	ADR [c]		Type of stock	Stock code	Market
BANCO BRADESCO/5	2001-06-26	M	NYSE 11/21/2001 A	ON	BBDC3	Level 1
				PN	BBDC4	
BANCO ITAU/5	2001-06-26	M	NYSE 02/21/2002 A	PN	ITAU4	Level 1
BRADESCO PARTICIP/9	2001-06-26	M		ON	BRAP3	Level 1
				PN	BRAP4	
GERDAU/1	2001-06-26	M	NYSE 03/10/1999 B	ON	GGBR3	Level 1
				PN	GGBR4	
GLOBOCABO/9	2001-06-26	M		PN	PLIM4	Level 1
ITAU SA/9	2001-06-26	M		ON	ITSA3	Level 1
				PN	ITSA4	
PERDIGAO/6	2001-06-26	M	NYSE 10/20/2000 B	ON	PRGA3	Level 1
				PN	PRGA4	
RANDON PART./14	2001-06-26	M		PN	RAPT4	Level 1
SADIA/6	2001-06-26	M	NYSE 12/30/2002 A	ON	SDIA3	Level 1
				PN	SDIA4	
UNIBANCO/5	2001-06-26	M	NYSE 03/27/2001 B	ON	UBBR3	Level 1
				PN	UBBR4	
				UNT	UBBR1	
VARIG/9	2001-06-26	M		PN	VAGV4	Level 1
CEMIG/4	2001-10-17	M	NYSE 09/19/2001 B	ON	CMIG3	Level 1
				PN	CMIG4	
RIPASA/10	2001-11-12	M		PN	RPSA4	Level 1
VOTORANTIN CEL. PAPEL/10	2001-11-14	M	NYSE 05/17/2002 A	PN	VCPA4	Level 1
ARACRUZ/10	2002-04-16	M	NYSE 03/03/1997 B	ON	ARCZ3	Level 1
				PNB	ARCZ6	
SABESP/9	2002-04-19	A	NYSE 05/09/2002 A	ON	SBSP3	Novo Mercado
BRASIL TELECOM/11	2002-05-09	M	NYSE 11/16/2001 B	ON	BRTO3	Level 1
				PN	BRTO4	
BRASIL TELEC. PART./11	2002-05-09	M	NYSE 08/01/2002 A	ON	BRTP3	Level 1
				PN	BRTP4	
CELESC/4	2002-06-21	A	OTC 06/12/2002 B	PN	CLSC3	Level 2
				PNB	CLSC6	
MARCOPOLO/14	2002-08-23	A		ON	POMO3	Level 2
				PN	POMO4	
TRAN PAULISTA/4	2002-09-18	M	OTC 09/24/1999 B	ON	TRPL3	Level 1
				PN	TRPL4	
KLABIN/10	2002-12-10	M	OTC 12/01/1994 B	PN	KLBN4	Level 1
BRASKEM/2	2003-02-13	M	NYSE 17/09/2003 A	ON	BRKM3	Level 1
				PN	BRKM5	
P. ACUCAR-CBD/13	2003-04-24	A	NYSE 05/28/1997 B	ON	PCAR3	Level 1
				PN	PCAR4	
SUZANO BAHIA SUL/10	2003-05-08	M	OTC 10/01/1993 B	PN	SUZA4	Level 1
GERDAU MET/1	2003-05-13	A		ON	GOAU3	Level 1
				PN	GOAU4	
ALPARGATAS/12	2003-07-10	A	OTC 05/01/1994 B	ON	ALPA3	Level 1
				PN	ALPA4	
CIA VALE DO RIO DOCE/7	2003-12-12	M	NYSE 03/27/2002 B	ON	VALE3	Level 1
				PNA	VALE5	
CONFAB INDUSTRIAL SA/1	2003-12-19	M		PN	CNFB4	Level 1
UNIPAR-UNIAO DE INDUSTRIAS PET SA/2	2004-08-11	A		ON	UNIP3	Level 1
				PNA	UNIP5	
				PNB	UNIP6	
ELETROPAULO MET/4	2004-09-10	A		PN	ELPL4	Level 2
SUZANO PET SA/2	2004-10-22	A	OTC 01/29/2003 B	PN	SUZB4	Level 2
ETERNIT SA/8	2005-01-26	A		ON	ETER3	Level 2
				PN	ETER4	
DURATEX SA/9	2005-02-24	A		ON	DURA3	Level 1
				PN	DURA4	
ULTRAPAR PARTICIPACOES SA/2	2005-03-22	A	NYSE 10/06/1999 B	PN	UGPA4	Level 1
IOCHPE MAXION SA/14	2005-09-21	A	OTC 04/01/1994 B	ON	MYPK3	Level 1
				PN	MYPK4	
ROSSI RESIDENCIAL SA/3	2006-01-27	M	OTC 03/21/2000 B	ON	RSID3	Novo Mercado
LIGHT/4	2006-02-22	M		ON	LIGT3	Novo Mercado
SARAIVA SA LIVREIROS EDITORES/9	2006-04-07	M	OTC 09/20/2000 B	ON	SLED3	Level 2
				PN	SLED4	
EMBRAER/14	2006-06-01	A	NYSE 07/21/2000 B	ON	EMBR3	Novo Mercado

(continued on next page)

Table 1 (*continued*)

Firm/industry [a]	Event date [b]	ADR [c]		Type of stock	Stock code	Market
ELETROBRAS/4	2006-06-28	A	OTC 12/01/1994 B	ON PN	ELET3 ELET4	Level 1
CESP/4	2006-07-11	A	OTC 06/01/1994 B	ON PNA	CESP3 CESP5	Level 1

[a] Reported is the industry sector number: 1 — Basic Metal fabrication; 2 — Chemical; 3 — Construction; 4 — Electric Power; 5 — Finance and Insurance; 6 — Food and Beverage; 7 — Mining; 8 — Nonmetallic Mining; 9 — Other; 10 — Pulp and Paper; 11 — Telecommunication; 12 — Textile; 13 — Trade; 14 — Vehicle and Parts.
[b] Reported is the event date and whether it is an announcement date (A) or the migration date (M).
[c] Reported is the type of ADR market (OTC or NYSE), the date the ADR was first established, and whether the ADR was established before (B) or after (A) the firm migrated to one of Bovespa's premium listings.

may rise less if these minority voting shares previously enjoyed some of the benefits of control. Hence, one might expect that the voting (control) premium, defined as the value of voting shares relative to non-voting shares, will decline at migration.[18]

A migrating firm's commitment to improved information disclosure should reduce information asymmetries between the firm's insiders (including the controlling shareholder) and outside (minority) investors. With better information, outside investors are less likely to suffer trading losses due to a corporate insider's superior information, and greater investor participation in shareholding should result. Thus, one would expect that migration could lead to an increase in the volume of trading and the liquidity of the firm's shares (Huddart et al., 1999), especially for non-voting shares since non-voting shareholders tended to be less informed.[19]

The effects of migration on both stock returns and share trading volumes may differ across firms based on a firm's corporate behavior prior to migration. In particular, if a firm had previously cross-listed its shares on the NYSE, then a subsequent Bovespa premium listing may have a different impact relative to a firm not having a prior cross-listing. Because an NYSE cross-listing may substitute or complement a Bovespa premium listing as a bonding mechanism, we will control for prior cross-listings in our empirical tests.

The choice between various premium listings also should impact a firm's share value differently since Level 2 and Novo Mercado require more governance reforms in addition to the improved information disclosure as required by Level 1. Therefore, we will examine whether a Level 2 or Novo Mercado listing leads to marginally greater benefits to shareholders.

3. Empirical methodology

This section describes how we propose to examine the effects of migration on share values, the voting (control) premium of shares, and share trading volumes. It also discusses our method for analyzing the characteristics of firms that chose a premium listing.

3.1. Migration's effect on share values

We first examine whether a firm's decision to migrate to a Bovespa premium listing is valuable from a shareholder's point of view. This is done using event study methodology where the abnormal returns of a firm's equity shares are calculated around the time of its migration. Ideally, the event window for calculating abnormal returns would be determined by a public announcement of the firm's decision to migrate. However, our search of the Brazilian financial press revealed few public announcements of firms' intentions to migrate, especially during the initial years of our sample. Until only recently did firms tend to explicitly announce their intentions to seek a premium segment listing on Bovespa.[20] Column three of Table 1 indicates that an identifiable public announcement of an intention to migrate occurred for 16 of our sample's 42 migrating firms.

In cases where a firm's announcement date could be identified, we assume a four day event window that includes two trading days prior and two trading days after the announcement. When a firm's announcement date could not be identified, we assume that a firm's intention to migrate was revealed to investors only around the time of its actual migration. For these cases, our tests consider two different four-day event windows:

- Window-31: three trading days before and one after the migration
- Window-22: two trading days before and two after the migration.

We choose these windows that included two or three days prior to migration to account for instances where information on a firm's intention to migrate may have been released shortly before its change in listing. Since it would be clear to investors that a firm actually migrated by one or two days following its new premium listing on Bovespa, we end the event windows shortly after

[18] Similar effects should be expected with a foreign cross-listing. Indeed, Doidge (2004) finds that upon announcement of a U.S. cross-listing, both voting and non-voting shares of dual share-class firms benefit, but non-voting shares benefit relatively more.
[19] In principle, one might expect greater liquidity to not only increase trading volumes but also lower bid-ask spreads. However, trading on Bovespa occurs through an electronic order-matching system, so that bid-ask spreads not applicable to Bovespa stocks.
[20] Brazil's CVM released Instruction 358 in January of 2002 that amended disclosure rules regarding securities trading. An example of a change that should be disclosed is "authorization to trade securities in any market, local or international." Initially, it was unclear whether this provision would apply to a firm's migration to a Bovespa premium segment. However, more recently firms are citing this Instruction when they announce their intention to migrate.

the actual migration date. Note that being unaware of the exact date when investors knew of a firm's intention to migrate reduces the likelihood of our finding a significant stock price reaction. Hence, our estimated effects from the decision to migrate are conservative.[21]

The econometric returns generating model for our event study is a market model based on two Brazilian stock indices: IBOVESPA and IBX. IBOVESPA is the most well-known Brazilian stock index, but it is concentrated in only a few company stocks. For this reason we opt to also include IBX, a more diversified index.

The first model that we estimate takes advantage of the panel structure of the data and assumes that the abnormal return is the same for all migrating firms:

$$R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda W_{it} + \varepsilon_{it}, \tag{1}$$

where: R_{it} is the return of stock i on date t; B_t is the return of the IBOVESPA index on date t; X_t is the return of the IBX index on date t; and W_{it} is a dummy variable indicating the dates of the event window for stock i.

A positive value for λ, the coefficient on W_{it}, indicates positive abnormal returns due to migration. Eq. (1) is estimated jointly for all stocks of migrating firms, constraining the abnormal return coefficient, λ, to be the same across stocks so as to test for general statistical significance. We use two different methods regarding the treatment of the model's residuals, ε_{it}: Generalized Least Squares (GLS) with correction for fixed-effects and heteroskedasticity and GLS with correction for random effects.[22] For robustness purposes, we use four different estimation windows:

- 80 trading days before the migration
- 80 trading days before and 80 after the migration
- 40 trading days before and 40 after the migration
- 80 trading days before and 40 after the migration.

As mentioned in the previous section, one might expect equity shares to display different responses to migration based on whether a firms' shares were voting or non-voting shares, whether the firm had its shares cross-listed on the NYSE prior to migration. or whether the firm chose a Level 2 or Novo Mercado premium listing. Hence, we extend the model in Eq. (1) to control for these effects:

$$R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda W_{it} + \omega C_i W_{it} + \varepsilon_{it}, \tag{2}$$

where C_i is a control variable for the ith stock that is one of three different forms: $VOTE_i$ is a dummy indicating stock i is a voting share; $NYSE_i$ is a dummy indicating stock i was cross-listed on the NYSE prior to migrating; and $L2NM_i$ is a dummy indicating stock i is of a firm that migrated to a Level 2 or Novo Mercado premium listing.

When $C_i = VOTE_i$ in Eq. (2), a negative value for ω indicates that migrating to one of Bovespa's premium markets is less valuable for voting shareholders relative to non-voting shareholders. If non-voting shares are more susceptible to expropriation, their values might be expected to increase the most when a firm migrates. Instead, when $C_i = NYSE_i$, a negative value for ω indicates that migrating to one of Bovespa's premium markets is less valuable for shareholders of firms having a prior NYSE listing. Alternatively, when $C_i = L2NM_i$, a positive value for ω indicates that migrating to Level 2 or Novo Mercado, which impose higher governance standards, is more valuable to shareholders relative to a Level 1 migration.

In addition to the panel regression method for analyzing abnormal stock returns due to migration, a conventional event study for each stock is performed. Market model regressions similar to Eq. (1) are run separately for each stock, which permitted abnormal returns due to migration to differ across stocks. An estimation window of 80 trading days prior to its migration and an event window of Window-31 are assumed. While this method allows us to test for the significance of abnormal returns for each individual stock, a standard test of the mean abnormal return across all stocks may be unjustified. This is due to the likelihood that the abnormal returns for all stocks are not statistically independent, since several firms migrated on the same date.[23]

3.2. Migration's effect on the voting (control) premium

To test whether a firm's migration impacted the relative values of its voting and non-voting shares, we examine changes in the voting premium of dual share-class firms. Following Nenova (2003, 2005), a firm's voting premium is calculated as the firm's total value of voting benefits relative to the total value of its shareholders' equity. The date t value of this voting premium is calculated as:

$$VP_t = \frac{\left(P_{v,t} - P_{nv,t}\right) N_{v,t}}{P_{v,t} N_{v,t} + P_{nv,t} N_{nv,t}} \tag{3}$$

where $P_{v,t}$ is the price of a voting share, $P_{nv,t}$ is the price of a non-voting share, $N_{v,t}$ is the number of voting shares, and $N_{nv,t}$ is the number of non-voting shares.

[21] More generally, if investors anticipated that some firms were more likely to migrate (*cross-list*) than others, the estimated abnormal stock price increase at the time of migration (*cross-listing*) would not fully reflect the value of this bonding mechanism.

[22] As discussed in Section 5, we also adjust for possible correlation in stock return residuals for firms that migrated on the same day by forming a portfolio of these firms' stocks.

[23] As shown in Table 1, 11 of the 42 firms in our sample migrated on June 26, 2001, the start of Bovespa's premium listings. As discussed in Campbell et al. (1997), the coincidence of these firms' event windows may make the independence assumption untenable.

During the years 2000 and 2001, there were discussions in Brazil regarding potential reforms to its corporate law. The primary proposal was to provide tag-along rights to all voting shares. In November 2001, compromise legislation was enacted that required the buyer of a firm's controlling stake to offer at least 80% of the controlling stake's offer price to all of the other voting shares. These corporate law discussions were likely to have had an impact on the value of all firms' voting premiums. Therefore, in our tests of how migration affects a firm's voting premium, we adjust each firm's voting premium by the average voting premium of all corporations in the IBX index that had dual-class shares and did not migrate. Thus, a migrating firm's adjusted voting premium is

$$AVP_t = VP_t - VP_{IBX,t} \tag{4}$$

where $VP_{IBX,t}$ is the date t average voting premium of all non-migrating firms in IBX having both voting and non-voting shares.

We then test whether a firm's average adjusted voting premium during the periods of four weeks, eight weeks, or 16 weeks after migration was different from its adjusted voting premium during the 52 weeks prior to migration. Our test assumes that

$$\overline{AVP}_T \sim N\left(\mu_T, \sigma_T^2\right) \tag{5}$$

where $\overline{AVP}_T$ is the firm's average adjusted voting premium during period T, where $T = B$ is the period before migration and $T = A$ is the period after migration. We test if $\mu_B = \mu_A$, that is, whether the mean adjusted voting premiums were equal before and after migration.

3.3. Migration's effect on trading volume

During the time when many of our sample firms migrated to premium markets, Bovespa experienced a serious decline in stock trading volume. Insecurity from the 2001 crisis in Argentina had spread to Brazil, and a flight to quality led many foreign investors to avoid emerging markets. Therefore, to isolate the effects of migration on a particular stock's trading volume, we adjust for overall market factors that influenced trading. We assume a simple model in which the daily volume traded in a particular stock is a function of the volume traded in all stocks listed on Bovespa. The econometric estimation is based on the panel regression:

$$ln(V_{it}) = \alpha_i + \lambda\, DM_{it} + (\beta_i + \gamma\, DM_{it}) ln(VB_t) + \varepsilon_{it}, \tag{6}$$

where: V_{it} is the average daily volume traded in R$ thousands of stock i during week t[24]; VB_t is the average daily volume traded in R$ millions of all stocks on Bovespa during week t; and DM_{it} is a dummy variable equal to 1 if company i has migrated prior to week t and zero, otherwise.

The model in Eq. (6) allows each stock to have a different unconditional trading volume relative to the total volume traded on Bovespa, α_i, and a different proportional sensitivity to the total volume traded on Bovespa, β_i.[25] The effect of migration is indicated by λ and γ, the coefficients on the variables DM_{it} and $DM_{it}\ln(VB_t)$. Since it is probably more natural to consider migration as having an effect that is proportional to a particular stock's prior volume of trading, Eq. (6) is estimated in logs of volume, rather than levels. However, because there are some days when a particular stock has no trading volume, we aggregate volume over a week to eliminate observations equaling zero. Note that Eq. (6) implies

$$\frac{\left(\frac{1}{V_{it}}\right)\partial V_{it}}{\partial DM_{it}} = [\lambda + \gamma\, ln(VB_t)]. \tag{7}$$

If migration increases trading volume, as should be the case if greater disclosure improves a stock's liquidity, then $\lambda + \gamma \ln(VB_t)$ should be positive. The coefficient λ indicates the stock's proportional change in unconditional volume while γ measures the change in the stock volume's elasticity with respect to Bovespa's volume since

$$\frac{\left(\frac{1}{V_{it}}\right)\partial V_{it}}{\left(\frac{1}{VB_t}\right)\partial VB_t} = \beta_i + \gamma DM_{it}. \tag{8}$$

For example, a 1% change in Bovespa's volume ($\frac{1}{VB_t}\partial VB_t = 1\%$) results in a $[\beta_i + \gamma DM_{it}]$% change in stock i's volume.

3.4. Characteristics of migrating firms

Similar to Pagano et al. (2002) and Claessens and Schmukler (2007) who analyze the characteristics of firms that choose a foreign cross listing, we use duration analysis to examine the features of firms that choose a premium listing. Specifically, we

[24] A few firms converted their non-voting shares to voting shares shortly before migrating. This includes Arcelor Brazil, which migrated to Level 1, and Lojas Renner and Tractebel Energia, both of which migrated to Novo Mercado. To create consistent time series for these firms, we sum the daily trading volumes of the firm's voting and non-voting shares prior to conversion and append this to the daily trading volumes of the firm's (sole) voting shares after conversion.

[25] This model nests the theoretical model in Tkac (1999) which predicts $\beta_i = 1$ for all i.

estimate a Cox proportional hazard model. The hazard rate, $h(t)$, is the probability of migrating during year t conditional on not having yet migrated at the start of year t. This probability is assumed to depend on a set of firm characteristics observable at the start of year t, X_t. The model assumes:

$$h(t) = h_0(t)exp(\beta' X_t) \tag{9}$$

where $h_0(t)$ is the date t baseline hazard function and β is a vector of coefficients to be estimated. This model is semi-parametric in that the form of $h_0(t)$ is unspecified.

As discussed earlier, firms with substantial growth opportunities should be more likely to choose migration as a bonding mechanism that reduces their cost of funding. Thus, in the vector X_t we include sales growth and Tobin's q as proxies for growth opportunities. Also included are additional variables that could affect the decision to migrate, such as a firm's size (log of total assets), leverage, return on equity, whether a firm had a U.S. cross-listing, and an index of the firm's corporate governance quality. We also control for industry differences.

4. The data

From Economatica we obtained daily closing stock prices and daily monetary trading volumes of the stocks of all firms that migrated to one of Bovespa's premium markets. These time series cover the five-year period between June 2001 and September 2006. Some of our tests also use the daily returns on the BOVESPA and IBX indices, the total daily monetary trading volume of all stocks listed on Bovespa, as well as the stock prices of voting and non-voting shares of all firms in the IBX index (to adjust for voting premium variations). To construct daily returns, Economatica adjusts daily percentage price changes for splits, dividends, and other cash and non-cash rights.

Some Brazilian stocks, often voting shares, are very thinly traded, and they were excluded from particular tests. The sample selection criteria for specific tests are discussed in the next section. Table 1 lists the 70 stocks that were issued by 42 different corporations that migrated to one of Bovespa's premium markets and that met the sample selection criteria for one or more of our empirical tests on share valuation and trading volume.

We also obtained from Economatica end-of-year financial statement data on all Bovespa-listed firms over the period 2000 to 2006. These data were used to construct firm characteristics used in our duration analysis of a firm's decision to migrate: Sales Growth; Tobin's q ([Total Assets − Book Value of Equity + Market Value of Equity]/Total Assets); Log of Total Assets; Leverage (Total Liabilities/Total Assets); and Return on Equity. A complete set of these firm characteristic data was available for 238 different firms, 46 of which migrated and 192 of which did not migrate.[26]

In addition, our duration analysis uses an annual corporate governance index (CGI) constructed by Ricardo Leal and André Carvalhal-da-Silva and that was available for 146 of the 238 firms in our sample.[27] The value of this index for a particular firm is the number of 'yes' answers to 24 questions, where an affirmative answer is associated with good governance. These questions can be answered from publically available information and cover four main areas: disclosure; board composition and functioning; ethics and conflicts of interest; and shareholder rights.

5. Results

5.1. Share values

The results of estimating the market model in Eqs. (1) and (2) are given in Tables 2 to 5. To be included in the panel regression sample, we require that a stock be traded on at least 115 of the 160 trading days around its firm's migration and also to be traded during its event window. These selection criteria result in a sample of 47 voting and non-voting shares from 38 different firms.[28]

Each table reports results for two different models of the regression residuals: fixed effects with correction for heteroskedasticity; and random effects. In addition, the tables give results for four different estimation windows that comprise various combinations of 40 and 80 trading-day periods before and after a firm's migration. Also reported are results for two different assumptions regarding an event window around migration. Recall that for the 16 firms where we can identify a public announcement of migration, we assume an event window of two trading days before and two trading days after the firm's announcement. For firms lacking a public announcement, the event window is assumed to be either three trading days before and one trading day after the firm's actual migration (Window-31) or two trading days before and two trading days after migration (Window-22).

Table 2 reports results without including controls for differences between voting and non-voting shares, whether the firm had a prior NYSE cross-listing, or whether the firm migrated to Level 1 versus Level 2 or Novo Mercado. Panel A of Table 2 shows that the estimated cumulative abnormal return due to migration is positive and statistically significant at the one percent level for both

[26] Financial sector firms (banks and insurance companies) are excluded from this sample since some financial ratios (e.g., sales growth) are not comparable with non-financial firms.

[27] We are most grateful to Ricardo Leal and André Carvalhal-da-Silva for permitting us to use their data. A detailed description of the CGI is given in Leal and Carvalhal-da-Silva (2007). Of these 146 firms, 38 migrated and 108 did not.

[28] We also exclude stocks of firms that had confounding events at the time of (or announcement of) migration. For example, NET/Globocabo is excluded because it announced a seasoned equity offering at the time of its migration to Level 1 on June 26, 2001. See Table 13.

Table 2
Effect of migration on returns. The values reported represent the cumulative percentage abnormal returns over the event windows. They were obtained from the model $R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda W_{it} + \varepsilon_{it}$, where $R_{it}$is the date t return on stock i; B_t is the date t return on the IBOVESPA index; X_t is the date t return on IBX index; and $W_{it}$is a dummy variable indicating the event window for stock i. These results were obtained using GLS with correction for heteroskedasticity and for random effects. The event windows tested are: Window-22 (two trading days before and two after migration/announcement); and Window-31 (three trading days before and one day after migration/two trading days before and two after announcement). Only stocks traded on at least 115 of the 160 trading days around the migration/announcement date and traded during the event window are in the sample. The Panel A sample includes 47 stocks representing 38 different firms. The Panel B sample includes 32 stocks representing 27 different firms and one portfolio with 15 stocks representing the 11 firms that migrated on June 26, 2001. The values in parentheses are z-statistics for the coefficient λ associated with variable W_{it}.

	Estimation Window			
	80 trading days before migration	80 trading days before and 80 after the migration	40 trading days before and 40 after the migration	80 trading days before and 40 after the migration
Panel A: All individual shares				
Heteroskedastic Panel				
Window-22	2.44***	2.20***	2.59***	2.51***
	(4.54)	(3.89)	(5.07)	(4.87)
Window-31	2.17***	2.18***	2.06***	2.12***
	(4.15)	(3.83)	(3.89)	(4.03)
Random Effects Panel				
Window-22	2.45***	2.63***	2.69***	2.65***
	(3.47)	(3.71)	(3.79)	(3.83)
Window-31	2.47***	2.64***	2.72***	2.65***
	(3.49)	(3.73)	(3.83)	(3.83)
Panel B: A portfolio of shares used for firms migrating on same date				
Heteroskedastic Panel				
Window-22	1.97***	1.90**v	2.25***	2.04****
	(3.04)	(2.91)	(3.48)	(3.20)
Window-31	2.39***	2.22***	2.49***	2.37***
	(3.68)	(3.39)	(3.84)	(3.71)
Random effects panel				
Window-22	1.88**	2.26***	2.24***	2.16***
	(2.32)	(2.86)	(2.78)	(2.71)
Window-31	1.84**	2.18***	2.16***	2.09***
	(2.27)	(2.75)	(2.69)	(2.63)

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

Table 3
Effect of migration on returns (controlling for voting shares). The values reported represent the cumulative percentage abnormal returns over the event windows. They were obtained from the model $R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda W_{it} + \omega Vote_i W_{it} + \varepsilon_{it}$, where $R_{it}$is the date *t* return on stock *i*; B_t is the date *t* return on the *IBOVESPA* index; X_t is the date *t* return on *IBX* index; $W_{it}$is a dummy variable indicating the event window for stock *i*; and $Vote_i$ is a dummy variable that indicates voting shares. These results were obtained using GLS with correction for heteroskedasticity and for random effects. The event windows tested are: Window-22 (two trading days before and two after migration/announcement); and Window-31 (three trading days before and one after migration/two trading days before and two after announcement). Only stocks traded on at least 115 of the 160 trading days around the migration/announcement date and traded during the event window are in the sample. The sample includes 47 stocks representing 38 different firms. There are 13 voting shares. In parentheses are *z*-statistics for the coefficients λ and ω associated with the variables W_{it} and $Vote_i W_{it}$, respectively.

		Estimation window			
		80 trading days before migration	80 trading days before and 80 after the migration	40 trading days before and 40 after the migration	80 trading days before and 40 after the migration
Heteroskedastic panel					
Window-22	*W*	1.64**	1.42*	1.78**	1.70**
		(2.24)	(1.93)	(2.44)	(2.37)
	VOTE×*W*	1.84*	1.96*	1.67	1.71*
		(1.69)	(1.70)	(1.63)	(1.65)
Window-31	*W*	2.25***	1.91***	2.11***	2.19***
		(3.10)	(2.58)	(2.90)	(3.04)
	VOTE×*W*	−0.07	0.78	0.00	−0.05
		(−0.07)	(0.67)	(0.00)	(−0.05)
Random Effects Panel					
Window-22	*W*	2.41***	2.63***	2.72***	2.63***
		(2.88)	(3.12)	(3.24)	(3.21)
	VOTE×*W*	0.35	0.24	0.17	0.23
		(0.23)	(0.15)	(0.11)	(0.15)
Window-31	*W*	2.39***	2.60***	2.72***	2.62***
		(2.86)	(3.09)	(3.25)	(3.20)
	VOTE×*W*	0.69	0.51	0.36	0.44
		(0.45)	(0.33)	(0.24)	(0.29)

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

Table 4
Effect of migration on returns (controlling for prior NYSE listing). The values reported represent the cumulative percentage abnormal returns over the event windows. They were obtained from the model $R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda W_{it} + \omega NYSE_i W_{it} + \varepsilon_{it}$, where $R_{it}$is the date t return on stock i; B_t is the date t return on the *IBOVESPA* index; X_t is the date t return on *IBX* index; $W_{it}$is a dummy variable indicating the event window for stock i; and $NYSE_i$ is a dummy variable indicating whether stock i was listed on the NYSE prior to migration/announcement. These results were obtained using GLS with correction for heteroskedasticity and for random effects. The event windows tested are: Window-22 (two trading days before and two after migration/announcement); and Window-31 (three trading days before and one after migration/two trading days before and two after announcement). Only stocks traded on at least 115 of the 160 trading days around the migration/announcement date and traded during the event window are in the sample. The sample includes 47 stocks representing 38 different firms. There are 14 stocks representing 10 different firms that were listed on the NYSE prior to the firm's migration/announcement date. In parentheses are z-statistics for the coefficients λ and ω associated with the variables W_{it} and $NYSE_i W_{it}$, respectively.

		Estimation Window			
		80 trading days before migration	80 trading days before and 80 after the migration	40 trading days before and 40 after the migration	80 trading days before and 40 after the migration
Heteroskedastic Panel					
Window-22	W	2.64***	2.47***	2.87***	2.74***
		(3.52)	(3.27)	(3.90)	(3.74)
	$NYSE \times W$	−0.42	−0.61	−0.56	−0.48
		(−0.39)	(−0.53)	(−0.55)	(−0.46)
Window-31	W	3.28***	3.08***	3.30***	3.26***
		(4.40)	(4.08)	(4.49)	(4.45)
	$NYSE \times W$	−2.19**	−2.08*	−2.58**	−2.36**
		(−2.11)	(−1.82)	(−2.47)	(−2.25)
Random Effects Panel					
Window-22	W	3.01***	3.25***	3.40***	3.31***
		(3.59)	(3.85)	(4.04)	(4.03)
	$NYSE \times W$	−1.85	−2.08	−2.38	−2.20
		(−1.23)	(−1.36)	(−1.57)	(−1.48)
Window-31	W	3.18***	3.41***	3.57***	3.44***
		(3.80)	(4.05)	(4.25)	(4.19)
	$NYSE \times W$	−2.39	−2.59*	−2.88*	−2.66*
		(−1.59)	(−1.69)	(−1.91)	(−1.79)

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

Table 5
Effect of migration on returns (controlling for Level 2 or Novo Mercado). The values reported represent the cumulative percentage abnormal returns over the event windows. They were obtained from the model $R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda W_{it} + \omega L2NM_i W_{it} + \varepsilon_{it}$, where R_{it} is the date t return on stock i; B_t is the date t return on the *IBOVESPA* index; X_t is the date t return on *IBX* index; W_{it} is a dummy variable indicating the event window for stock i; and $L2NM_i$ is a dummy variable indicating whether stock i migrated to Level 2 or Novo Mercado. These results were obtained using GLS with correction for heteroskedasticity and for random effects. The event windows tested are: Window-22 (two trading days before and two after migration/announcement); and Window-31 (three trading days before and one after migration/two trading days before and two after announcement). Only stocks traded on at least 115 of the 160 trading days around the migration/announcement date and traded during the event window are in the sample. The sample includes 47 stocks representing 38 different firms. There are 9 stocks representing 9 different firms that migrated to Level 2 or Novo Mercado. In parentheses are z-statistics for the coefficients λ and ω associated with the variables W_{it} and $L2NM_i W_{it}$, respectively.

		Estimation window			
		80 trading days before migration	80 trading days before and 80 after the migration	40 trading days before and 40 after the migration	80 trading days before and 40 after the migration
Heteroskedastic Panel					
Window-22	W	1.91***	1.55***	2.05***	1.98***
		(3.24)	(3.59)	(3.53)	(3.42)
	$L2NM \times W$	3.22**	3.59**	3.53**	3.42**
		(2.22)	(2.44)	(2.48)	(2.40)
Window-31	W	1.59***	1.46**	1.33**	1.44**
		(2.79)	(2.32)	(2.32)	(2.51)
	$L2NM \times W$	3.70***	3.93***	4.43**	4.16**
		(2.57)	(2.67)	(3.09)	(2.91)
Random Effects Panel					
Window-22	W	1.97**	2.01**	2.03**	2.01***
		(2.49)	(2.52)	(2.55)	(2.59)
	$L2NM \times W$	2.28	2.94*	3.09*	3.00*
		(1.35)	(1.72)	(1.82)	(1.81)
Window-31	W	1.96**	2.00**	2.06***	2.00**
		(2.46)	(2.50)	(2.58)	(2.56)
	$L2NM \times W$	2.43	3.03*	3.07*	3.06*
		(1.44)	(1.77)	(1.81)	(1.84)

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

the three days before and one day after migration event window (Window-31) and the two days before and two days after event window (Window-22). The point estimates for the abnormal returns range between 2.06% and 2.72% depending on the chosen event and estimation windows and error correction method. However, in each case the evidence is consistent with the notion that investors view a firm's listing on one of Bovespa's premium markets as a commitment to greater minority shareholder protection.

This increase in shareholder value at the time of migration is comparable to the 2.63% increase that Miller (1999) found when firms announced a cross-listing on the NYSE or NASDAQ. As Stulz (1999) points out, the size of the abnormal returns found by Miller (1999) and others may be an underestimate of the true increase in value that shareholders attribute to a firm's cross-listing because the firm's action may have been partially anticipated. The same insight holds for our event study: some of the increase in shareholder value may have occurred weeks before a firm's actual migration date if investors viewed migration to have a positive probability. Hence our estimates of the impact of migration are likely to be conservative.

Panel B of Table 2 examines the robustness of the abnormal return estimates by using an alternative control for cross-correlation in the returns of shares of firms that migrated on the same day. Specifically, we formed an equally-weighted portfolio of the 15 stocks of the 11 firms that migrated on the initial day of June 26, 2001. We then re-ran the regressions treating this portfolio as a single observation. The estimated abnormal returns range from 1.84% to 2.49% depending on the particular estimation and event windows and error correction method. However, as in Panel A, in each instance these estimates are statistically significant at the 1% or 5% level. Thus, our results are not driven by the group of firms that migrated at the start of Bovespa's premium listings.

In Table 3, we estimate Eq. (2) where $C_i = VOTE_i$ controls for voting shares. In this set of regressions the coefficient on the event window, W, represents the abnormal return for non-voting shares while the sum of this coefficient and that of the $VOTE \times W$ represents the abnormal return for voting shares. Similar to the results in the previous table, for each estimation window and event window choice, the event window coefficient representing the abnormal return on non-voting shares is positive and statistically significant. In addition, the added effect for voting shares, $VOTE \times W$, is statistically insignificant for most estimation and event window choices. Only when the event window is Window-22 and there is adjustment for heteroskedasticity does the difference between the abnormal returns between voting and non-voting shares become significant at the 10% level. However, the overall evidence appears to suggest that, as a group, there is as much of an increase in the value of voting shares as there is for the value of non-voting shares.

Table 4 is similar to Table 3 but instead estimates Eq. (2) where $C_i = NYSE_i$ controls for the shares of firms that had NYSE cross-listings prior to migration. Fourteen of the 47 stocks are of firms that had an NYSE cross-listing prior to their Bovespa premium listing. Depending on the event window and residual modeling, the abnormal returns reflecting shares of firms without a prior cross-listing appear somewhat higher than before, ranging from 2.47% to 3.57%. In all cases, the point estimates for the coefficient on the prior NYSE cross-listing dummy variable are negative, and they are statistically significant in 7 of the 16 cases. These results might be interpreted as mild evidence that firms without a prior NYSE cross-listing benefit the most from migrating to a Bovespa premium listing.

Table 5 estimates Eq. (2) once again but now where $C_i = L2NM_i$ controls for the shares of firms that migrated to Level 2 or Novo Mercado, which are the premium listings that add higher governance standards to the primarily disclosure-related standards of Level 1. Nine out of our sample of 47 stocks were of firms that chose Level 2 (5 firms) or Novo Mercado (4 firms) listings. When regressions include this control, Table 5 shows that the coefficient on the migration event, W, remains positive and significant, though 0.48% to 0.73% less compared to the those of the regressions in Table 2 that exclude the control. The coefficient on the $L2NM \times W$ variable controlling for a Level 2 or Novo Mercado migration is always positive and is statistically significant in 14 of the 16 regression specifications. The coefficient estimates on this control indicate that the marginal benefit of choosing a Level 2 or Novo Mercado listing versus a Level 1 listing is an abnormal return ranging from 2.28% to 4.43%. These results are supportive evidence that shareholders value the additional corporate governance improvements that come with a Level 2 and Novo Mercado listing.

Our final analysis of abnormal returns involves estimating separate market models of the form of Eq. (1) for each stock issued by a migrating firm. The results assuming an event Window-31 are reported in Table 6. There one sees that the average abnormal return is 2.63%, which coincidentally is the same average abnormal return found by Miller (1999) for firms announcing an NYSE/NASDAQ cross-listing. This cumulative abnormal return would be statistically significant under the assumption that returns are independent across firms.[29] Eight of the 47 stocks had significantly positive abnormal returns while only two stocks had significantly negative ones. The average abnormal return for the 14 stocks issued by firms that had a prior NYSE cross-listing was 1.03%. In contrast, the average abnormal return for the 33 stocks that did not have a prior NYSE listing was 3.30%. Table 6 also shows that average abnormal return for voting shares was 2.65% while it was 2.76% for non-voting shares. Average abnormal returns for the 38 stocks of firms choosing a Level 1 listing was 2.33% while average abnormal returns for the nine stocks of firms choosing a Level 2 or Novo Mercado listing was 3.90%. These results are consistent with the previous tables' panel regression results.

In summary, our samples of voting and non-voting shares appear to experience similar average abnormal returns due to migration. Differences emerge when the sample is split between stocks of firms with a prior NYSE listing and of firms choosing a Level 2 or Novo Mercado listing. We find some evidence that shareholders benefit more from a Bovespa premium listing if their firms had not previously cross-listed on the NYSE, suggesting that an NYSE cross-listing partially substitutes for a Bovespa

[29] The potential lack of independence due to several firms migrating on the same date was the motivation for our panel regression tests in Tables 2 through 5.

Table 6
Effect of migration on returns (individual shares). Cumulative abnormal returns are reported as a percentage over a four trading day event window. These abnormal returns were estimated by OLS from a market model using the IBOVESPA and IBX indices as explanatory variables. The estimation window is 80 trading days before the event window. The event window for the stocks whose event date is the migration date (M) is three trading days before and one after the migration. The event window for the stocks whose event date is the announcement date (A) is two trading days before and two after the announcement. Only those stocks that traded over the entire event window are included.

Stock		Event Date and Type	Prior NYSE	Cummulative abnormal returns	z-statistic	Standard Deviation
BBDC3	*BANCO BRADESCO ON*	2001-06-26 M	No	3.15	0.78	4.033
BBDC4	*BANCO BRADESCO PN*	2001-06-26 M	No	1.76	0.40	4.436
ITAU4	*BANCO ITAU PN*	2001-06-26 M	No	4.52	1.01	4.494
BRAP3	*BRADESCO PARTICIP. ON*	2001-06-26 M	No	3.60	0.58	6.177
BRAP4	*BRADESCO PARTICIP. PN*	2001-06-26 M	No	3.13	0.65	4.813
GGBR4	*GERDAU PN*	2001-06-26 M	Yes	−3.75	−0.72	5.240
PLIM4	*GLOBOCABO PN*	2001-06-26 M	No	25.79***	3.81	6.765
ITSA4	*ITAU SA PN*	2001-06-26 M	No	4.51	1.28	3.535
PRGA4	*PERDIGAO PN*	2001-06-26 M	Yes	10.33***	3.01	3.432
RAPT4	*RANDON PART. PN*	2001-06-26 M	No	6.95	1.30	5.361
SDIA4	*SADIA PN*	2001-06-26 M	No	8.77**	2.20	3.989
UBBR3	*UNIBANCO ON*	2001-06-26 M	Yes	0.60	0.60	1.007
UBBR4	*UNIBANCO PN*	2001-06-26 M	Yes	4.82	1.08	4.474
UBBR1	*UNIBANCO UNT*	2001-06-26 M	Yes	−2.19	−0.35	6.237
VAGV4	*VARIG PN*	2001-06-26 M	No	−5.18	−0.72	7.169
CMIG3	*CEMIG ON*	2001-10-17 M	Yes	−2.72	−0.45	6.099
CMIG4	*CEMIG PN*	2001-10-17 M	Yes	−3.60	−0.69	5.250
RPSA4	*RIPASA PN*	2001-11-12 M	No	−3.58	−0.70	5.082
VCPA4	*VOTORANTIN CEL. PAPEL PN*	2001-11-14 M	No	5.42	0.97	5.586
ARCZ6	*ARACRUZ PNB*	2002-04-16 M	Yes	4.65	0.84	5.544
SBSP3	*SABESP ON*	2002-04-19 A	No	9.04***	2.59	3.491
BRTO4	*BRASIL TELECOM PN*	2002-05-09 M	Yes	3.54	1.40	2.526
BRTP3	*BRASIL TELEC. PART. ON*	2002-05-09 M	No	0.55	0.14	4.019
BRTP4	*BRASIL TELEC. PART. PN*	2002-05-09 M	No	0.66	0.21	3.106
CLSC6	*CELESC PNB*	2002-06-21 A	No	11.20**	2.39	4.681
TRPL3	*TRAN PAULISTA ON*	2002-09-18 M	No	6.10**	1.97	3.096
TRPL4	*TRAN PAULISTA PN*	2002-09-18 M	No	−1.29	−0.23	5.714
KLBN4	*KLABIN PN*	2002-12-10 M	No	−0.14	−0.03	5.273
PCAR4	*P. ACUCAR-CBD PN*	2003-04-24 A	Yes	4.06	0.85	4.759
SUZA4	*SUZANO BAHIA SUL PN*	2003-05-08 M	No	2.18	0.59	3.712
GOAU4	*GERDAU MET PN*	2003-05-13 A	No	−6.72**	−2.21	3.046
VALE3	*CIA VALE DO RIO DOCE ON*	2003-12-12 M	Yes	2.07	0.68	3.031
VALE5	*CIA VALE DO RIO DOCE PNA*	2003-12-12 M	Yes	0.10	0.03	2.897
CNFB4	*CONFAB INDUSTRIAL SA PN*	2003-12-19 M	No	2.60	0.67	3.910
UNIP6	*UNIPAR-UNIAO PET SA PNB*	2004-08-11 A	No	2.41	0.53	4.574
ELPL4	*ELETROPAULO MET PN*	2004-09-10 A	No	6.97	1.49	4.690
SUZB4	*SUZANO PET SA PN*	2004-10-22 A	No	−0.26	−0.04	6.075
ETER3	*ETERNIT SA ON*	2005-01-26 A	No	4.90*	1.87	2.616
DURA4	*DURATEX SA PN*	2005-02-24 A	No	1.91	0.48	3.957
UGPA4	*ULTRAPAR PARTICIP. SA PN*	2005-03-22 A	Yes	−7.49*	−1.86	4.035
MYPK4	*IOCHPE MAXION SA PN*	2005-09-21 A	No	0.03	0.01	4.572
RSID3	*ROSSI RESIDENCIAL SA ON*	2006-01-27 M	No	−15.45	−1.51	10.264
LIGT3	*LIGHT ON*	2006-02-22 M	No	13.49***	2.59	5.203
SLED4	*SARAIVA PN*	2006-04-07 M	No	1.18	0.22	5.301
EMBR3	*EMBRAER ON*	2006-06-01 A	Yes	3.99	1.00	3.987
ELET3	*ELECTROBRA ON*	2006-06-28 A	No	5.11	1.01	5.044
ELET4	*ELECTROBRA PN*	2006-06-28 A	No	5.73	1.31	4.367
	Average			2.63***	5.40	0.49

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

premium listing. There also appears to be a marginal benefit from the higher corporate governance standards that derive from a Level 2 and Novo Mercado listing.

5.2. Voting premium

The previous section's results may not be indicative to the relative returns earned on a particular dual share-class firm's voting and non-voting shares. One reason for this is that some of the voting shares that we analyzed are of firms that migrated to Novo Mercado and, therefore, these firms could have only voting shares. In cases where Novo Mercado-listed firms had previously issued non-voting shares, they tended to convert them to voting shares well before migration and, hence, these shares are not in our sample. Another reason is that even when dual share-class firms migrate to Levels 1 or 2, their voting shares often are excluded from our event study tests. As discussed earlier, voting shares tend to be less frequently traded, so that there are often insufficient price observations for computing returns during the tests' estimation and event window periods.

This section attempts to provide more insight regarding the relative returns to a particular dual share-class firm's voting and non-voting shares at the time of migration. It uses a test methodology that is less sensitive to voting share illiquidity. As detailed in Section 3.2, we analyze the average change in a dual share-class firm's voting premium over relatively long intervals prior to, and following, their migrations. If this change is statistically significant relative to firms that did not migrate over the same period, then we may conclude that the firm's voting and non-voting shareholders earn statistically different returns due to migration.

Table 7 analyzes the market-adjusted voting (control) premium for 21 migrating firms that had dual share classes of voting and non-voting shares. Column one gives the adjusted voting premium during the 52 weeks prior to migration while columns two, three, and four give the change in the average voting premium during the periods of four weeks, eight weeks, and 16 weeks following migration.

For 11 of the firms, there is at least one post-migration period characterized by a statistically significant decline in the voting premium. For only six of the firms does the voting premium rise significantly following migration. Taken as a whole, this evidence suggests that migration is likely to benefit a firm's non-voting shareholders more than its voting shareholders.

These results contrast with the event study evidence of the previous section that included voting shares of single share-class firms and excluded many illiquid voting shares of dual share-class firms. That sample of voting shares appeared to benefit from migration just as much as, if not more than, non-voting shares. However, we now see that analyzing the relative returns to voting and non-voting shares at the level of a particular dual share-class firm can matter. Doing so produces evidence consistent with the theoretical prediction that better disclosure and governance benefits non-voting shareholders the most.

Table 7
Effect of migration on the voting (control) premium. The voting premium was calculated as $VP_t = (P_{v,t} - P_{nv,t})N_{v,t}/(P_{v,t}N_{v,t} + P_{nv,t}N_{nv,t})$, where $P_{v,t}$ is the price of a voting share; $P_{nv,t}$ is the price of a non-voting share; $N_{v,t}$ is the number of voting shares; and $N_{nv,t}$ is the number of non-voting shares. For each firm the voting premium was adjusted by subtracting the average of the voting premiums of all corporations in the IBX index that had dual-class shares. For each firm we report the average voting premium during the 52 weeks before its migration and the difference in the average adjusted voting premiums during the 4, 8, and 16 week periods after its migration. The second reported value is the z-statistic and in parentheses is the number of observations in the period.

	52 weeks before	Differences		
		4 weeks after	8 weeks after	16 weeks after
Alpargatas	0.026	0.213***	0.167***	0.098***
	(31)	0.000(4)	0.000 (8)	0.000 (14)
Aracruz	−0.189	0.009	0.016	0.026***
	(42)	0.562 (4)	0.165 (8)	0.003 (15)
Banco Bradesco	−0.055	−0.049***	−0.056***	−0.068***
	(52)	0.002 (4)	0.000(8)	0.000 (16)
Banco Itaú	0.038	−0.052**	−0.054***	−0.061***
	(51)	0.016 (4)	0.001 (8)	0.000 (16)
Bradespar	−0.004	−0.031	−0.044***	−0.052***
	(46)	0.166 (4)	0.007 (8)	0.000 (16)
Brasil Telec.	−0.117	−0.027*	−0.023**	−0.029***
	(51)	0.082 (4)	0.039 (8)	0.000 (16)
Brasil Telec. Part.	−0.030	−0.043***	−0.051***	−0.075***
	(52)	0.000 (4)	0.000 (8)	0.000 (16)
Brasken	−0.052			0.025
	(14)			0.154 (4)
Cemig	−0.023	−0.024**	−0.027***	−0.029***
	(52)	0.029 (4)	0.001 (8)	0.000 (16)
Cesp	−0.098	0.007	−0.015	−0.03
	(52)	0.763 (4)	0.343 (8)	0.865 (10)
Gerdau	−0.040	−0.019*	−0.010	−0.018**
	(32)	0.075 (3)	0.220 (5)	0.035 (6)
Gerdau Met.	−0.017	0.013	0.007	0.004
	(22)	0.294 (2)	0.373 (5)	0.413 (13)
Iochpe	−0.099	−0.036	−0.033	−0.022
	(25)	0.292 (3)	0.217 (5)	0.278 (9)
Itausa	0.162	−0.028*	−0.038***	−0.030***
	(50)	0.097 (4)	0.002 (8)	0.001 (15)
Marcopolo	0.021	−0.013	−0.026*	−0.044***
	(25)	0.511 (2)	0.066 (4)	0.000 (9)
Perdigão S/A	0.079			−0.109***
	(18)			0.000 (2)
Sadia	0.126	0.042***	0.26**	0.009
	(13)	0.001 (3)	0.016 (6)	0.354 (10)
Tran Paulista	−0.137	0.032	0.046***	0.065***
	(52)	0.123 (4)	0.003 (8)	0.000 (16)
Unibanco	0.419	−0.015	−0.014	0.015*
	(52)	0.292 (4)	0.156 (8)	0.098 (16)
Unipar	0.011	−0.026**	−0.021**	−0.011*
	(52)	0.034 (4)	0.016 (8)	0.086 (16)
Vale Rio Doce	0.036	0.060***	0.065***	0.074***
	(52)	0.000 (4)	0.000 (8)	0.000 (16)

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

5.3. Trading volume

This section examines whether trading volumes increase following migration, as would be predicted if greater disclosure leads to less information asymmetries and greater share liquidity. Regressions of Eq. (6) are estimated at a weekly frequency using weekly averages of daily trading volumes during the 100 trading days prior to a firm's migration and the 100 trading days after its migration. To be included in this analysis, a stock must have traded at least once during each week of the estimation period. This selection criterion leaves a sample of 49 stocks of 38 different firms.

Table 8 reports results of panel regressions based on different subsamples and empirical specifications. Models 1, 2, and 3 of the table correct the regression residuals for heteroskedasticity while Models 4, 5, and 6 correct the regression residuals for random effects. The forms of Models 1 and 4 allow for only a fixed proportional shift in daily trading volume while Models 2 and 5 allow for only a shift in the stock volume's sensitivity to changes in Bovespa's total volume. Models 3 and 6 are the most general by allowing both types of shifts.

When only a fixed shift is modeled, columns one and four of Table 8 indicate that if all shares are considered together, migration leads to a statistically significant increase in volume of 7.0% and 17.0% for Models 1 and 4, respectively. Examining subsamples, there is evidence that this increase comes mainly from non-voting shares: for Models 1 and 4, volumes for non-voting shares increase 7.4% and 17.8%, respectively, while volume increases are smaller and statistically insignificant for voting shares. Interestingly, when only stocks of firms that had NYSE cross-listings prior to migration are considered, migration leads to their volumes on Bovespa increasing by the substantial amounts of 15.4% and 23.7% for Models 1 and 4, respectively. A potential explanation for these increases in volume is that trading shifted from the NYSE to Bovespa following migration.

The results are qualitatively similar if one models the effect of migration as being only a change in the stock volume's elasticity with respect to Bovespa's total volume of trading. In Models 2 and 5, the proportional increase in volume due to migration equals $\gamma \ln(VB_t)$. If we evaluate this change at the daily average log volume (in R$ millions) traded on Bovespa during our sample period, 20.29, one obtains a proportional increase of $0.003 \times 20.29 = 6.1\%$ and $0.009 \times 20.29 = 18.3\%$ in Models 2 and 5 for the sample of all shares. As before, this increase from migration occurs mainly for non-voting shares (8.1% and 18.3% for Models 2 and 5) and for NYSE cross-listed shares (16.2% and 24.3% for Models 2 and 5).

The most general specifications, Models 3 and 6, imply that the proportional effect of migration equals $\lambda + \gamma \ln(VB_t)$. From Table 8, we see that when both effects are permitted, the sign of λ becomes negative but γ stays positive. However, if as before,

Table 8
Effect of migration on trading volumes. This table presents estimates for the model $\ln(V_{it}) = \alpha_i + \lambda\, DM_{it} + (\beta_i + \gamma\, DM_{it}) \ln(VB_t) + \varepsilon_{it}$ where V_{it} is the average daily volume traded in R$ thousands of stock i during week t, VB_t is the average daily volume traded in R$ millions of all stocks listed on Bovespa during week t, and DM_{it} is a dummy variable equal to 1 if firm i migrated/announced migration prior to week t and zero, otherwise. Two different estimation methods are used: GLS with correction for heteroskedasticity and GLS with random effects. The sample comprises the 100 trading days before and 100 days after each firm's migration/announcement. "All Shares" estimates are for 49 stocks of 38 different firms. "Only Non−Voting Shares" (Only Voting Shares") estimates are for 34 (14) stocks of 34 (14) different firms. "Only Shares of Firms with a Prior NYSE Cross-Listing" estimates are for 15 stocks of 10 different firms. In parentheses are the regression coefficients' z-values.

	Heteroskedastic			Random effects		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
All Shares						
AFTER (λ)	0.070***		−2.047**	0.170***		−5.111***
	(3.25)		(−2.21)	(5.53)		(−4.28)
AFTER × ln(VOLUME BOVESPA) (γ)		0.003***	0.104**		0.009***	0.260***
		(3.29)	(2.28)		(5.64)	(4.42)
Effect at average ln(VOLUME BOVESPA)		0.061	0.063		0.183	0.164
Only Non-Voting Shares						
AFTER (λ)	0.074***		−1.170	0.178***		−5.328***
	(3.08)		(−1.02)	(5.19)		(−3.66)
AFTER × ln(VOLUME BOVESPA) (γ)		0.004***	0.062		0.009***	0.272***
		(3.10)	(1.08)		(5.28)	(3.78)
Effect at average ln(VOLUME BOVESPA)		0.081	0.088		0.183	0.191
Only Voting Shares						
AFTER (λ)	0.033		−5.644***	0.108		−6.048***
	(0.67)		(−3.26)	(1.64)		(−2.73)
AFTER × ln(VOLUME BOVESPA) (γ)		0.002	0.277***		0.006*	0.301***
		(0.76)	(3.27)		(1.72)	(2.78)
Effect at average ln(VOLUME BOVESPA)		0.041	−0.024		0.122	0.059
Only Shares of Firms with a Prior NYSE Cross Listing						
AFTER (λ)	0.154 ***		−2.072	0.237***		−2.738
	(4.09)		(−1.08)	(4.56)		(−1.21)
AFTER × ln(VOLUME BOVESPA) (γ)		0.008***	0.110		0.012***	0.147
		(4.10)	(1.16)		(4.59)	(1.32)
Effect at average ln(VOLUME BOVESPA)		0.162	0.160		0.243	0.245

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

Table 9
Effect of migration on trading volumes of NYSE ADRs. This table presents estimates for the model $\ln(V_{it}) = \alpha_i + \lambda\, DM_{it} + (\beta_i + \gamma\, DM_{it})\ln(VB_t) + \varepsilon_{it}$ where V_{it} is the average daily volume traded in $ thousands of ADR i during week t, VB_t is the average daily volume traded in $ thousands of all Brazilian ADRs listed on NYSE during week t, and DM_{it} is a dummy variable equal to 1 if firm i migrated prior to week t and zero, otherwise. Two different estimation methods are used: GLS with correction for heteroskedasticity and GLS with random effects. The sample comprises the 100 trading days before and 100 days after each firm's migration. Estimates are for 8 stocks of 7 different firms. In parentheses are the regression coefficients' z-values.

	Heteroskedastic			Random effects		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
All shares						
AFTER (λ)	0.039		0.787	−0.019		−2.686**
	(1.04)		(0.99)	(−0.25)		(−2.12)
AFTER × ln(VOLUME BRAZIL ADRs) (γ)		0.004	−0.077		−0.001	0.284**
		(1.01)	(−0.92)		(−0.12)	(2.11)
Effect at average ln(VOLUME BRAZIL ADRs)		0.038	0.064		−0.009	−0.019

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

$\ln(VB_t)$ is evaluated at the sample average of 20.29, we find that the net effects of migration for all shares are positive, equaling 6.3% and 16.4% for Models 3 and 6, respectively. Also similar to earlier specifications, the average net impact for non-voting shares is a significant rise (8.8% for Model 3 and 19.1% for Model 6) while for voting shares the change in volume is smaller (a decline of 2.4% for Model 3 and an increase of 5.9% for Model 6). Though the regression coefficients for NYSE cross-listed stocks are not individually statistically significant, the point estimates indicate that migration leads to a substantial rise of 16.0% for Model 3 and 24.5% for Model 6.

Because the shares of firms that had a prior NYSE cross listing tend to have the greatest increase in trading volume following a Bovespa premium listing, we were motivated to explore how migration affected the trading of these firms' ADRs on the NYSE. Therefore, we collected daily trading volume for NYSE ADRs of Brazilian firms and re-estimated Eq. (6) but where V_{it} is the average daily volume traded (in $ thousands) of ADR i during week t and where VB_t is the average daily volume traded (in $ thousands) of all Brazilian NYSE ADRs during week t. Similar to Table 8, the regression is estimated over a period of 100 trading days prior to, and 100 trading days following, migration. The requirement that ADRs trade at least once per week resulted in a sample of eight ADRs of seven different migrating firms. The results are reported in Table 9.

There is little evidence of much change in trading volume of these ADRs due to migration. When only a fixed proportional shift is permitted, Model 1 gives a point estimate of a 3.9% increase in trading volume while Model 4 indicates a 1.9% decline in trading

Table 10
Descriptive statistics of migrating and non-migrating firms. The source of the firms' financial data is Economatica. The entries are each firm's average of the variable over 2000 to 2006 (or during the years prior to its migration), then averaged over all firms in its group. The two groups are: 1) firms that migrated during the 2001 to 2006 period; 2) firms that did not migrate during the 2001 to 2006 period. The full sample includes all Bovespa-listed firms, excluding financial firms and insurance companies, for which all financial data was available. The full sample comprises 46 firms that migrated and 192 that did not. For the subsample of these firms for which a corporate governance index (CGI) was available, 38 firms migrated and 108 did not. Tobin's q is defined as: (Total Assets − Book Value of Equity + Market Value of Equity)/(Total Assets). Leverage is defined as the ratio of total liabilities to total assets. As detailed in Leal and Carvalhal-da-Silva (2007), the CGI is computed from publically available information and has a maximum value of 24.

	Full sample				CGI subsample			
	Mean (median) migrating firms 2000–2006 A	Mean (median) migrating firms prior migration B	Mean (median) no migrate firms 2000–2006 C	*t*-Test of equality of means A vs C B vs C	Mean (median) migrating firms 2000–2006 D	Mean (median) migrating firms prior migration E	Mean (median) no migrate firms 2000–2006 F	*t*-Test of equality of means D vs F E vs F
Sales growth	0.221	0.267	0.194	0.629	0.212	0.253	0.183	0.56
	(0.152)	(0.174)	(0.141)	1.30	(0.152)	(0.174)	(0.133)	1.03
Tobin's q	1.232	1.139	1.154	1.607	1.237	1.133	1.050	4.87***
	(1.084)	(0.997)	(0.960)	0.23	(1.097)	(1.010)	(0.920)	1.78*
Ln of Total Assets	15.090	14.783	13.552	13.57***	15.130	14.819	13.500	12.86***
	(15.186)	(14.651)	(13.666)	8.75***	(15.289)	(14.750)	(13.489)	8.40***
Leverage	0.294	0.288	0.241	4.59***	0.295	0.290	0.242	4.13***
	(0.293)	(0.275)	(0.235)	3.26***	(0.293)	(0.277)	(0.232)	3.04***
Return on equity	0.112	0.058	0.052	2.06**	0.112	0.050	0.068	1.36
	(0.146)	(0.113)	(0.083)	0.15	(0.149)	(0.113)	(0.098)	0.42
Governance Index CGI					11.83	11.17	9.85	9.97***
					(11)	(11)	(10)	5.76***
Firms with prior OTC ADR	12	12	7		8	8	6	
Firms with prior NYSE/NASDAQ ADR	14	14	15		14	14	10	
Number of Firms	46	46	192		38	38	108	

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

Table 11
Characteristics predicting firms' decisions to migrate. The table reports estimates of a Cox proportional hazard model $h(t) = h_0(t)\exp(\beta' X_t)$ where the hazard rate, $h(t)$, is the probability of migrating during year t conditional on a vector of firm characteristics observable at the start of year t, X_t. $h_0(t)$ is the date t baseline hazard function and β is a vector of coefficients. The table reports the estimated hazard ratios $\exp(\beta_1)$, $\exp(\beta_2)$,...for the firm characteristics, and robust z-statistics based on errors that cluster on each firm are given in parentheses. The full sample includes observations from 2000 to 2006 on 238 firms, 46 of which migrated and 192 of which did not. The CGI Subsample is a subset of 146 firms, 38 of which migrated and 108 of which did not. Firms' financial data is from Economatica. Tobin's q is defined as: (Total Assets − Book Value of Equity + Market Value of Equity)/(Total Assets) and Leverage is defined as the ratio of Total Liabilities to Total Assets. The corporate governance index (CGI), from Leal and Carvalhal-da-Silva (2007), is computed from publically available information and has a maximum value of 24. The regressions include dummy variables that control for the following industries: Agriculture and Fisheries, Chemical, Construction, Electric and Electronic, Electric Power, Food and Beverage, Industrial Machinery, Mining, Nonmetallic Mining, Oil and Gas, Pulp and Paper, Software and Data, Telecommunication, Textile, Trade, Transportation Service, Vehicle and Parts, and Other. Estimates in columns two and four use observations on firm financial characteristics that are winsorized at the first and 99th percentiles.

	Hazard ratios			
	Full sample	Full sample winsorized	CGI subsample	CGI subsample winsorized
Sales Growth	1.145**	1.762**	1.101	2.241***
	(2.08)	(2.52)	(1.47)	(2.82)
Tobin's q	1.284*	1.451*	1.455	1.625*
	(1.68)	(1.91)	(1.27)	(1.65)
Log of Total Assets	1.565***	1.559***	1.414***	1.506***
	(4.24)	(4.40)	(3.03)	(3.51)
Leverage	1.002	1.154	0.940	0.459
	(0.23)	(0.14)	(−0.06)	(−0.66)
Return on Equity	0.754**	0.705	0.768**	0.539*
	(−2.28)	(−1.09)	(−2.43)	(−1.79)
OTC ADR	2.924***	2.770***	1.901	1.741
	(2.78)	(2.67)	(1.41)	(1.10)
NYSE/NASDAQ ADR	1.884	1.922*	1.528	2.060
	(1.58)	(1.67)	(0.95)	(1.61)
Governance Index			1.082	0.983
			(1.41)	(−0.20)
Industry Dummies	Yes	Yes	Yes	Yes
Financial Variables Winsorized at 1% Tails	No	Yes	No	Yes
Number of Observations/Firms	1048	1048	760	760
	238	238	146	146
Log-Likelihood	−196.36	−195.51	−152.12	−138.88

*, **, and *** indicate statistical significance at the 10% level, the 5% level, and the 1% level, respectively.

volume. However, neither of these coefficients is significantly different from zero. Models 2, 3, and 5 also produce small and statistically insignificant changes in trading volume. Only Model 6's coefficients are statistically significant. When its proportional shift of $\lambda + \gamma \ln(VB_t)$ is evaluated at $\ln(VB_t) = 9.39$, which is the average log daily volume traded (in $ thousands) of all Brazilian NYSE ADRs during our sample period, it implies a decline in trading volume of 1.9%. Hence, there appears to be little or no decline in trading of a firm's ADRs following migration. Apparently, a commitment to improve corporate behavior can raise the total trading volume for a firm's shares, with the greatest increase in its domestic market and without a material decline in its foreign market.[30]

In conclusion, our estimates indicate that shares' trading volumes on Bovespa increased following their premium listings, especially for non-voting shares. This supports the view that a commitment to improved disclosure benefits lesser-informed, non-voting shareholders the most. These minority investors became less likely to suffer trading losses from insiders. In addition, we find that increases in trading volumes are particularly large for shares of firms that were previously cross-listed on the NYSE, providing evidence that exchanges' listing standards may be complementary in terms of their disclosure. Together, these results are evidence that Bovespa was successful in establishing premium listings to recoup losses in trading volume, though its success was not at the expense of the NYSE. The higher disclosure and governance standards of a premium listing appears to be a net benefit to investors by raising overall liquidity.[31]

5.4. Characteristics of migrating firms

We now investigate whether particular characteristics can identify firms that tend to choose premium listings. As discussed earlier, theory predicts that if firms have substantial growth opportunities that require external funding, their controlling

[30] On a related issue, there is mixed evidence as to whether a firm's domestic market trading increases or declines following a foreign cross-listing. For a review and empirical tests, see Halling et al. (2008).

[31] Morck et al. (2000) and Jin and Myers (2006) show that improved liquidity due to better information disclosure and corporate governance should make the firm's share price better reflects its firm-specific risk. Thus, there should be a rise in the share return's idiosyncratic (firm-specific) risk relative to its systematic risk or "beta" (covariance with market returns). In unreported tests similar to those of Ferreira and Laux (2007), we examined migrating firms' share variance, beta, and relative idiosyncratic risk (equal to the market model regression R^2 ratio $[1-R^2]/R^2$) for the 100 trading days prior to each firm's migration. We then compared these statistics to those computed for the 100 trading days following migration. The average of the migrating firms' share variances and share betas fell, while their average relative idiosyncratic risks rose. While the changes in these statistics following migration are consistent with theory, none of the changes in these averages were statistically significant.

shareholders are more likely to forego expropriation of minority investors in order to lower their firms' funding costs. A way to commit to this behavior is to migrate to a premium listing.

Table 10 compares descriptive statistics of migrating and non-migrating firms. Columns A, B, and C cover the full sample of 238 Bovespa-listed firms while Columns D, E, and F cover the 146-firm subset for which the CGI (corporate governance index) was also available. For both samples, the means and medians of each of the financial variables are calculated for migrating firms (Columns A and D) and non-migrating firms (Columns C and F) during the 2000–2006 period. In addition, the means and medians of the variables are calculated for migrating firms during only the years prior to their migration (Columns B and E).

Tests of the equality of means show that migrating firms had significantly greater total assets and leverage relative to non-migrating firms. For the full sample of firms, those that migrated had a significantly higher return on equity over the entire 2000–2006 period compared to non-migrating firms, but there were no significant return on equity differences during the years prior to their migrations. For the CGI subset of firms, migrating firms had significantly higher Tobin's q and a higher CGI than did non-migrating firms.

Table 11 presents the results of multivariate analysis using Cox proportional hazard model regressions. These regressions are run for the full sample of firms (columns one and two) as well as for the subsample for which the CGI index is available (columns three and four). The table reports each explanatory variable's hazard ratio estimate, $\exp(\beta_1)$, $\exp(\beta_2)$, …, so that a point estimate

Table 12
Bovespa seasoned equity offerings. Market indicates the firm's listing at the time of the offering. Initial returns are computed with respect to the distribution price and first closing price after the distribution.

Date	Firm/Stock	Market	Total Issued (R$ mil.)	ADR Issued (R$ mil.)	Foreign Investors (%)
6/01	Petrobahia	Traditional	7	–	n.a.
9/01	Mehir Holding	Traditional	2	–	n.a.
7/01	Petrobras	Traditional	2014	1629	n.a.
12/01	Nova Marlin	Traditional	129	–	n.a.
11/01	CBLC	Traditional	243	–	n.a.
3/02	CVRD	Traditional	4522	2552	n.a.
5/02	Sabesp	NM	527	157	n.a.
8/02	NET/Globocabo	Level l	597	–	n.a.
9/02	Marcopolo	Level 2	95	–	n.a.
2/03	Rossi Residencial	Level 1	80	–	n.a.
4/03	CSN	Traditional	414	–	n.a.
7/03	Coteminas	Traditional	111	–	n.a.
9/03	Unibanco	Level 1	637	446	n.a.
12/03	Votorantin Celulose	Level 1	745	447	n.a.
12/03	Suzano	Traditional	443	–	n.a.
5/04	CCR	NM	375	–	n.a.
9/04	Weg	Level 1	319	–	n.a.
9/04	Braskem	Level 1	1211	807	n.a.
9/04	Sabesp	NM	688	501	n.a.
12/04	Gerdau	Level 1	413	–	n.a.
12/04	Gerdau Met.	Level 1	88	–	n.a.
12/04	Bradespar	Level 1	1045	–	n.a.
12/04	Suzano Pet.	Level 2	179	–	n.a.
1/05	Unibanco	Level 1	718	–	56.7
3/05	ALL	Level 2	645	–	80.0
4/05	Ultrapar	Traditional	362	137	74.8
4/05	Gol	Level 2	594	451	79.2
6/05	AES Tietê	Traditional	1060	–	80.2
7/05	Lojas Renner	NM	886	–	86.3
9/05	Unibanco	Level 1	1765	1310	80.5
9/05	Bradespar	Level 1	505	–	67.1
9/05	Cyrela	NM	902	566	72.2
12/05	Tractebel	NM	1052	–	55.1
2/06	Iochpe-Maxion	Level 1	340	–	47.3
3/06	Rossi Residencial	NM	1013	–	80.3
3/06	TAM	Level 2	1559	510	79.9
3/06	Dasa	NM	662	–	84.9
4/06	Duratex	Level	609	–	46.4
4/06	Submarino	NM	929	–	89.9
4/06	Localiza	NM	394	–	73.6
4/06	Saraiva	Level 2	183	–	85.8
4/06	Randon	Level 1	235	–	57.5
6/06	Porto Seguro	NM	201	–	53.8
6/06	Banco do Brasil	NM	2273	–	50.9
7/06	Cesp	Level 1	3200	–	30.4
7/06	Cyrela	NM	838	–	75.5
9/06	Eletropaulo	Level 2	1345	4	59.8
10/06	Perdigão	NM	800	64	43.2

Source: Bovespa.

greater (*less*) than unity indicates a greater (*lesser*) likelihood of migration due to an increase in the variable relative to the baseline hazard, $h_0(t)$. In parentheses are *z*-statistics based on errors that cluster on each firm. The regressions control for industry differences, and to examine the effect of extreme outliers that might arise from reporting errors, the regressions are run with and without winsorizing the financial variables at the 1% upper and lower tails of the observations.

For the full sample of firms (columns one and two of Table 11), consistent with theory we find that the prior year's sales growth and Tobin's q predict the decision to migrate at the 5% and 10% confidence levels, respectively. Firm size (log of total assets) is also highly significant. A possible explanation for this size effect is that smaller firms may tend to rely on bank loan financing due to high fixed costs of issuing public securities. Consistent with Harvey et al. (2004), a smaller firm might reduce its cost of external finance by submitting to loan covenants enforced by bank monitoring, obviating the need to protect minority shareholders via a premium listing.

There is some evidence (only when variables are not winsorized) that firms with a lower return on equity are more likely to migrate. Perhaps a low return on equity proxies for a lack of internal funds, thereby necessitating greater external funding of growth opportunities. Firms that previously had OTC ADRs, and to a lesser extent those having NYSE/NASDAQ ADRs, are also more likely to seek a premium listing. Having an OTC ADR might indicate that a firm desires external financing but is unwilling to pay the higher costs of an exchange listing. A premium listing could be a more cost-effective way of bonding the firm to better protect minority shareholders.

The qualitative results are similar for the subsample of firms for which the CGI is available. Sales growth and Tobin's q continue to predict a greater tendency to migrate, though only when variables are winsorized. Greater firm size and a lower return on equity also increase the likelihood of a premium listing. Interestingly, the CGI is not a significant predictor of migration, and its inclusion decreases the significance of a firm having an ADR. This may be due to colinearity since one of the CGI questions asks if the firm uses U.S. or IAS GAAP accounting. Overall, these regression results are consistent with the hypothesis that reducing the external cost of funding growth opportunities can motivate a firm's premium listing.

If, indeed, the motive for a premium listing was to reduce financing costs in order to take advantage of growth opportunities, we should expect that premium-listed firms would be more likely to have seasoned equity offerings (SEOs). Table 12 provides informal, but striking evidence that firms choose premium listings in order to reduce the costs of subsequent SEOs. Of the 48 SEOs since the opening of Bovespa's premium segments in June of 2001, 37 of them (77%) were by firms having a prior premium listing. Twenty-nine of the 37 were issues of firms that migrated to a premium segment while the other eight were of firms that established premium listings at their IPOs. As of year-end 2006, there were approximately 350 total companies with a Bovespa exchange listing and only 86 of them (25%) had a premium listing. If we consider the 87 relatively large firms who were in Bovespa's IBX index at the end of 2006, 55 of them (63%) had a premium listing, which is still less than the 77% of SEOs by premium-listed firms over the entire sample period. Hence, relative to a firm with a traditional Bovespa listing, a premium-listed firm was more likely to issue seasoned equity.

6. Conclusions

Prior research has highlighted the roles that good corporate governance and disclosure play in the development of capital markets. However, in many countries reforms of corporate law aimed at protecting minority investors often face serious political opposition. In this environment, private contractual arrangements in the form of premium stock exchange listings show promise as mechanisms for pledging better corporate behavior. Our evidence suggests that a Bovespa premium listing is a credible bonding mechanism that Brazilian firms can use to reduce their cost of funding growth opportunities.

By allowing previously-listed corporations to choose a premium listing, the creation of Bovespa's premium segments provides a setting to analyze the pure effects of adopting improved corporate governance and disclosure. In this study, we found that a firm's shares tend to earn a positive abnormal return when it chooses a premium listing, especially if the listing requires improved governance standards in addition to greater transparency. In addition, a firm's increase in share value from a premium listing is typically greater if its shares had not previously been cross-listed on a U.S. exchange. Migration also tends to reduce the premium between a firm's voting and non-voting shares. Moreover, choosing a premium enhances trading volume for non-voting shares, consistent with the notion that improved disclosure creates liquidity. These results are important because they provide evidence that the private creation of premium listings can be successful in improving investor welfare and encouraging greater capital market development.

By making an alternative bonding mechanism available to Brazilian firms, Bovespa's premium listings might be a partial explanation for why foreign cross-listings on U.S. exchanges are in decline (Doidge et al., 2009). Listing on a Bovespa premium segment leads to an increase in shareholder value that is similar to cross listing on a U.S. exchange. Bovespa's innovation supports the view that competition among the world's stock exchanges can lead to higher overall standards of corporate behavior.

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Appendix. Rules for admission to BOVESPA's premium listings

BOVESPA lays down a series of standards for the conduct of companies, managers and controlling shareholders considered as important for valuation of shares and other assets issued by the company. The adherence to these practices distinguishes a company as either a Level 1 (Nível 1) Company, a Level 2 (Nível 2) Company, or a Novo Mercado company, depending on the degree of commitment assumed by the company.

All these rules are consolidated in the Listing Regulations, the adherence to which is voluntary. The commitment entered into by the company, its controlling shareholders and its management are signed via a contract to which these entities and BOVESPA are parties.

Level 1

Level 1 companies largely undertake to improve methods of disclosure to the market and to disperse their shares among the largest number of shareholders possible. Thus, the principal practices required of a Level 1 company are:

- maintenance of a free-float of at least 25% of capital;
- holding of public offerings for placing shares through mechanisms that favor capital dispersion to a broader spectrum of shareholders;
- improved disclosure of quarterly information including the obligation of reporting consolidated figures and special audit revision;
- adherence to the disclosure rules for transactions involving assets issued by the company on the part of the controlling shareholders or company management;
- disclosure of shareholder agreements and stock option programs;
- provision of an annual calendar of corporate events.

Level 2

To be classified as a Level 2 company, in addition to the obligations of Level 1, the company and its controlling shareholders must adopt and observe a much broader range of corporate governance practices and minority shareholder rights. In summary, the criteria for listing as a Level 2 company are:

- a term of two years or less for the entire Board of Directors without staggered elections;
- the annual balance sheet to be made available in accordance with US GAAP or IAS;
- granting to all holders of common shares the same conditions obtained by the controlling shareholders on the transfer of the control of the company and 80% of these conditions for preferred shareholders (partial tag along);
- voting rights granted to preferred shares in certain circumstances such as transformation, incorporation, spin-off and merger of the company and approval of contracts between the company and other companies of the same group;
- obligation to hold a tender offer by the economic value criteria should the capital be closed or registration as a Level 2 company be canceled;
- adherence to the Market Arbitration Panel as the vehicle to resolve corporate disputes.

Novo Mercado

To be listed in the Novo Mercado, besides all the obligations established to enter Level 2 the firm must issue and list only voting shares (common stock).

References

Amihud, Y., Mendelson, H., 1986. Asset pricing and the bid-ask spread. J. Financ. Econ. 17, 223–249.
Bebchuk, L., Roe, M., 1999. A theory of path dependence in corporate ownership and governance. Stanford Law Rev. 52, 127–170.
Bekaert, G., Harvey, C., Lundblad, C., 2007. Liquidity and expected returns: lessons from emerging markets. Rev. Financ. Stud. 20, 1783–1832.
Benos, E., Weisbach, M., 2004. Private benefits and cross-listings in the united states. Emerg. Mark. Rev. 5, 217–240.
Bottazzi, L., Da Rin, M., 2002. Europe's 'new' stock markets. Innocenzo Gasparini Institute for Economic Research Working Paper.
Burghof, H.-P., Hunger, A., 2004. The neuer markt: an (overly) risky asset of Germany's financial system. Adv. Financ. Econ. 10, 295–324.
Campbell, J., Lo, A., MacKinlay, A.C., 1997. The Econometrics of Financial Markets. Princeton University Press, Princeton.
Claessens, S., Schmukler, S., 2007. International financial integration through equity markets: which firms from which countries go global? J. Int. Money Financ. 26, 788–813.
Coffee, J., 1999. The future as history: the prospects for global convergence in corporate governance and its implications. Northwestern University Law Rev. 93, 641–708.
Coffee, J., 2002. Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance. Columbia Law Rev. 102, 1757–1831.
Doidge, C., 2004. U.S. cross-listings and the private benefits of control: evidence from dual-class firms. J. Financ. Econ 72, 519–553.
Doidge, C., Karolyi, A., Stulz, R., 2004. Why are foreign firms that are listed in the U.S. worth more? J. Financ. Econ 71, 205–238.
Doidge, C., Karolyi, A., Stulz, R., 2009. Has New York become less competitive than London in global markets? Evaluating foreign listing choices over time. J. Financ. Econ. 91, 253–287.
Dyck, A., Zingales, L., 2004. Private benefits of control: an international comparison. J. Financ. 59, 537–600.

Ferreira, M., Laux, P., 2007. Corporate governance, idiosyncratic risk, and information flow. J. Financ. 62, 951–989.
Gleaser, E., Johnson, S., Shleifer, A., 2001. Coase versus the Coasians. Q. J. Econ. 108, 853–899.
Gleason, K., Madura, J., Subrahmanyam, V., 2007. Stock exchange governance initiatives: evidence from the Italian STARs. J. Bank. Financ. 31, 141–159.
Halling, M., Pagano, M., Randl, O., Zechner, J., 2008. Where is the market? Evidence from cross-listings in the U.S. Rev. Financ. Stud. 21, 725–761.
Harvey, C., Lins, K., Roper, A., 2004. The effect of capital structure when expected agency costs are extreme. J. Financ. Econ. 74, 3–30.
Huddart, S., Hughes, J., Brunnermeier, M., 1999. Disclosure requirements and stock exchange listing choice in an international context. J. Acc. Econ. 26, 237–269.
Jin, L., Myers, S., 2006. R^2 around the world: new theory and new tests. J. Financ. Econ. 79, 257–292.
Karolyi, A., 1998. Why do companies list shares abroad? A survey of the evidence and its managerial implications. Financ. Mark. Inst. Instrum. 7, 1–60.
Karolyi, A., 2006. The world of cross-listings and cross-listings of the world: challenging conventional wisdom. Rev. Financ. 10, 73–115.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1997. Legal determinants of external finance. J. Financ. 52, 1131–1150.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2006. What works in securities laws? J. Financ. 61, 1–32.
Leal, R., Carvalhal-da-Silva, A., 2007. Corporate governance and value in Brazil (and Chile). In: Chong, A., López-de-Silanes, F. (Eds.), Investor Protection and Corporate Governance: Firm Level Evidence across Latin America. Stanford University Press, pp. 213–287.
Lel, U., Miller, D., 2008. International cross-listing, firm performance, and top management turnover: a test of the bonding hypothesis. J. Financ. 63, 1897–1937.
Leuz, C., 2006. Cross listing, bonding and firms' reporting incentives: a discussion of Lang, Raedy and Wilson. J. Acc. Econ. 42, 285–299.
Levine, R., Zervos, S., 1998. Stock markets, banks, and economic growth. Am. Econ. Rev. 88, 537–558.
Licht, A., 2003. Cross-listing and corporate governance: bonding or avoiding. Chicago J. Int. Law 4, 122–141.
Macey, J.R., O'Hara, M., 2002. The economics of stock exchange listing fees and listing requirements. J. Financ. Intermed. 11, 297–319.
Miller, D.P., 1999. The market reaction to international cross-listings: evidence from depository receipts. J. Financ. Econ. 51, 103–123.
Morck, R., Yeung, B., Yu, W., 2000. The information content of stock markets: why do emerging markets have synchronous stock price movements? J. Financ. Econ. 58, 215–260.
Nenova, T., 2003. The value of corporate voting rights and control: a cross-country analysis. J. Financ. Econ. 68, 325–351.
Nenova, T., 2005. Control values and changes in corporate law in Brazil. Latin Am. Bus. Rev. 6 (3), 1–37.
Östberg, P., 2006. Disclosure, investment and regulation. J. Financ. Intermed. 15, 285–306.
Pagano, M., Röell, A., Zechner, J., 2002. The geography of equity listing: why do companies list abroad? J. Financ. 52, 2651–2694.
Reese, W.A., Weisbach, M., 2002. Protection of minority shareholder interests, cross-listings in the united states, and subsequent equity offerings. J. Financ. Econ. 6, 65–104.
Ribstein, L., 2005. Cross-listing and regulatory competition. Rev. Law Econ. 1, 97–148.
Shleifer, A., Wolfenzon, D., 2002. Investor protection and equity markets. J. Financ. Econ. 66, 3–27.
Siegel, J., 2005. Can foreign firms bond themselves effectively by submitting to U.S. law? J. Financ. Econ. 75 (2), 319–360.
Stulz, R., 1999. Globalization of equity markets and the cost of capital. J. Appl. Corp. Financ. 12, 8–25.
Tkac, P., 1999. A trading volume benchmark: theory and evidence. J. Financ. Quant. Anal. 34, 89–114.
Wurgler, J., 2000. Financial markets and the allocation of capital. J. Financ. Econ. 58, 187–214.