Does NYSE Listing Affect Firm Visibility?

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Does NYSE Listing Affect Firm Visibility?

Desire to improve a firm's visibility and prestige, to signal its confidence in the firm's future performance, and to improve liquidity and marketability.

Many managers believe that after listing, their firm will gain additional attention from financial analysts and the investing public.

However, Dharan and Ikenberry and others (Sanger and McConnell, 1986; and Cowan, Carter, Dark, and Singh, 1992) report that firms experience several years of very strong growth just before listing. Strong-growth firms might attract analysts and institutions, regardless of the listing decision.

Does NYSE Listing Affect Firm Visibility?

Proxies of firm visibility

1) the number of analysts estimating the firm's next fiscal year's earnings (NOA)
2) the number of institutional shareholders (NOI)
3) the number of shares held by institutions (NOS)

		Period Around Listing			
Group Size	**N**	**13th Month Before**	**7th Month Before**	**1 Month Before**	**5 Months After**
		Panel A. Number of Analysts (NOA)			
Small	110	2.31	2.75	3.31	3.84
Medium	110	3.88	4.89	5.85	6.35
Large	111	9.44	10.64	11.13	12.05
Total	331	5.22	6.11	6.77	7.43

		Period Around Listing			
Group Size	**N**	**13th Month Before**	**7th Month Before**	**1 Month Before**	**5 Months After**
		Panel B. Number of Institutions (NOI)			
Small	81	22.58	25.62	31.36	36.12
Medium	84	42.04	47.76	54.27	61.73
Large	89	106.87	120.36	132.94	139.19
Total	254	58.55	66.14	74.53	80.70

Does NYSE Listing Affect Firm Visibility?

Visibility Proxy	N	β_0 t-statistic	EPSGRO β_1 t-statistic	%ΔVALUE β_2 t-statistic	Adjusted R^2
		Panel A. Regression Results			
Number of Analysts	530	0.247 5.979***	0.004 0.199	0.340 4.213***	0.029
Number of Institutions	465	0.159 7.613***	0.024 1.355	0.300 7.051***	0.096
Number of Shares Held	465	0.242 6.469***	0.045 1.410	0.513 6.730***	0.088

$\%\Delta VALUE_i$ = the percentage change in firm i's value over the six-month period t-13 to t-7 or t-7 to t-1.

Table 4 suggests that increases in the visibility proxies are not primarily associated with listing, but instead are artifacts of the same factors.

Conclusion

We find that although NYSE listing is associated with increases in visibility, the gains appear to be associated with changes in firm size and earnings growth, rather than switching from Nasdaq to the NYSE.

Why do only some Nasdaq firms switch to the NYSE? Evidence from corporate transactions

Simi Kedia[a,*], Venkatesh Panchapagesan[b]

Journal of financial markets, 2011

NADAQ -> NYSE Advantages

A NYSE listing involve gains in visibility and "prestige" leading to increases in market values of these firms' shares. The gains to a NYSE listing also arise from increases in liquidity and potentially lower transaction costs.

Merton (1987) shows that firms benefit from a widening of their investor base through a lower cost of capital since investors prefer to invest only in securities that they are aware of.

Amihud and Mendelson (1986,1988) show that investors are willing to accept a lower return for stocks with higher liquidity. Since NYSE stocks are usually more widely followed and are more liquid it is likely that Nasdaq firms moving to the NYSE experience a reduction in their cost of capital.

NADAQ -> NYSE Disadvantages

One possibility could be that firms where such benefits are not apparent are more likely to stay in Nasdaq.

Amihud and Mendelson (1986) argue that highly liquid firms in Nasdaq realize little gain in liquidity by moving to the NYSE. Reinganum (1990) shows that small firms have a liquidity advantage on the Nasdaq as compared to the NYSE.

Hypotheses

Though a lower cost of capital is attractive, it is especially so when the firm is issuing new equity or debt. Consequently, **firms are more likely to move to NYSE when they anticipate raising significant capital in the years ahead.**

A reduction in the cost of capital also reduces the cost of financing acquisition activity facilitating a firm's acquisition program.

Sample: To examine this we choose Nasdaq firms that move to NYSE over the period 1986–1998 and a size and industry-matched control group of firms that were eligible to move in the same year but chose to stay in Nasdaq.

Conclusion

Though several Nasdaq firms are eligible to list at the NYSE only few firms choose to do so.

We present evidence that suggests that **involvement in capital raising and acquisition activities** may determine whether and when Nasdaq firms decide to **move to the NYSE.**

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

Antonio Gledson de Carvalho and George G. Pennacchi
JCF, 2012

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The point of this paper!

By voluntarily choosing a "premium" exchange listing, a firm can pledge to better protect its minority shareholders.

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.

Choosing a premium enhances trading volume for non-voting shares, consistent with the notion that improved disclosure creates liquidity.

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.

Bovespa's premium listings

Premium listings (3)

Novo Mercado is Bovespa's premium listing that has the highest standards.

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.

Comparison to U.S. cross-listings

1. 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.

2. "Bonding" hypothesis of Coffee (1999) and Stulz(1999):

2.1. Legal bonding : a firm's share value might be raised by cross-listing due to the higher legal standards of a U.S. exchange listing.

2.2. Reputational bonding : the enhanced market discipline due to closer scrutiny and monitoring of the firm's behavior by analysts.

Cross-listing on a U.S. exchange serves as a bonding mechanism and that many Brazilian firms have established such cross-listings

Why would a Brazilian firm choose a Bovespa premium listing?

1. There have been challenges to the view that a cross-listing on a U.S. exchange is an effective bonding mechanism.

2. The standards of Bovespa premium listings are different and varied and, therefore, the level of bonding may be different.

3. 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. There is no incremental fee when a firm migrates to a premium listing from Bovespa's traditional listing.

4. The premium listing and cross listing standards may be complements, rather than substitutes.

Hypotheses

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.

-> Crosslisting 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.

Hypotheses_detail

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.

Most Brazilian firms issue dual-class shares:
1. Voting shares (denoted ON) : controlling family or institution
2. Non-voting shares (denoted PN) : minority shareholders (expropriation)

Hypotheses_detail

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).

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. we will control for prior cross-listings in our empirical tests.

We will examine whether a Level 2 or Novo Mercado listing leads to marginally greater benefits to shareholders.

The data

Economatica: daily closing stock prices, daily monetary trading volumes of the stocks

Time: June 2001 and September 2006.

Sample: 238 different firms(46 of which migrated and 192 of which did not migrate)

Empirical methodology: Migration's effect on share values

Event study methodology

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.

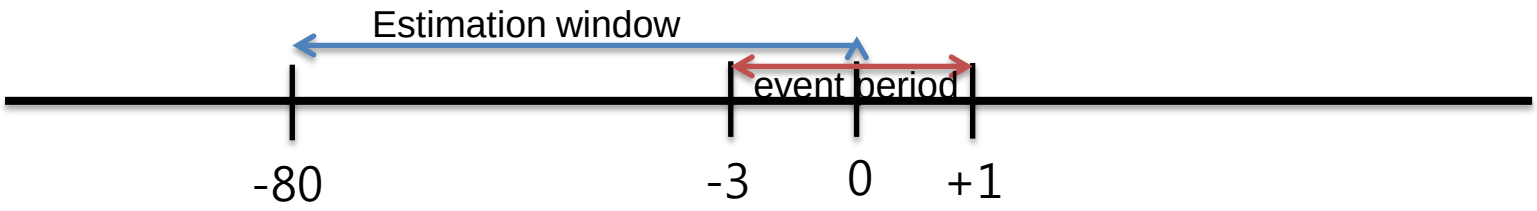
OLS market model

$$A_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i R_{m,t},$$

Brown & Warner
Journal of Financial Economics, 1985

Empirical methodology: Migration's effect on share values

Event study methodology



event window

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

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.

Empirical methodology: Migration's effect on share values

Event study methodology

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

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:

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

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.

Results: Share values

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.

Results: Share values

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)
	$VOTE \times W$	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)
	$VOTE \times W$	−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)
	$VOTE \times W$	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)
	$VOTE \times W$	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.

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

Vote: dummy (voting shares)

Results: Share values

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

Vote: dummy (voting shares)

W represents the abnormal return for non-voting shares while the sum of this coefficient and that of the VOTE×W represents the abnormal return for voting shares.

When Ci=$VOTE_i$, 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.

-> However, positive… but 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.

Results: Share values

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.

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

NYSE: dummy (NYSEi is a dummy variable indicating whether stock i was listed on the NYSE prior to migration/announcement.)

Results: Share values

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

NYSE: dummy (NYSEi is a dummy variable indicating whether stock i was listed on the NYSE prior to migration/announcement.)

When Ci=$NYSE_i$, 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.

Results: Share values

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 $L2NM_iW_{it}$, 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.

$$R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda\, W_{it} + \omega L2NM_i W_{it} + \varepsilon_{it},$$

L2NMi is a dummy variable indicating whether stock i migrated to Level 2 or Novo Mercado.

Results: Share values

$$R_{it} = \alpha_i + \beta_i B_t + \gamma_i X_t + \lambda\, W_{it} + \omega L2NM_i W_{it} + \varepsilon_{it},$$

Where Ci=L2NMi 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.

When Ci=L2NMi, 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.

Results: Share values

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
...						
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.

Results: Share values

In summary, our samples of voting and non-voting shares appear to experience similar average abnormal returns due to migration.

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 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.

Migration's effect on the voting (control) premium

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

→ The firm's total value of voting benefits

→ The total value of its shareholders' equity.

Pv,t is the price of a voting share
Pnv,t is the price of a non-voting share
Nv,t is the number of voting shares
Nnv,t is the number of non-voting shares.

$$AVP_t = VP_t - VP_{IBX,t}$$

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

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.

Voting premium

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

Table 7
Effect of migration on the voting (control) premium. The v
voting share; $P_{nv,t}$ is the price of a non-voting share; $N_{v,t}$ i
premium was adjusted by subtracting the average of the v
the average voting premium during the 52 weeks before it
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)

Voting premium

Table 7 analyzes the market-adjusted voting (control) premium for 21migrating firms that had dual share classes of voting and nonvoting shares.

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.

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.

-> This evidence suggests that migration is likely to benefit a firm's non-voting shareholders more than its voting shareholders.

Migration's effect on trading volume

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

where: V_{it} is the average daily volume traded in R$ thousands of stock i during week t[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.

Insecurity from the 2001 crisis in Argentina had spread to Brazil, and a flight to quality led many foreign investors to avoid emerging markets. We adjust for overall market factors that influenced trading.

λ and γ : the effect of migration

λ : the stock's proportional change in unconditional volume

γ : the change in the stock volume's elasticity with respect to Bovespa's volume

Trading volume

Migration leads to a statistically significant increase in volume of 7.0%.

Evidence that this increase comes mainly from non-voting shares

	Heteroskedastic		
	Model 1	Model 2	Model 3
All Shares			
AFTER (λ)	0.070***		−2.047**
	(3.25)		(−2.21)
AFTER×ln(VOLUME BOVESPA) (γ)		0.003***	0.104**
		(3.29)	(2.28)
Effect at average ln(VOLUME BOVESPA)		0.061	0.063
Only Non-Voting Shares			
AFTER (λ)	0.074***		−1.170
	(3.08)		(−1.02)
AFTER×ln(VOLUME BOVESPA) (γ)		0.004***	0.062
		(3.10)	(1.08)
Effect at average ln(VOLUME BOVESPA)		0.081	0.088
Only Voting Shares			
AFTER (λ)	0.033		−5.644***
	(0.67)		(−3.26)
AFTER×ln(VOLUME BOVESPA) (γ)		0.002	0.277***
		(0.76)	(3.27)
Effect at average ln(VOLUME BOVESPA)		0.041	−0.024
Only Shares of Firms with a Prior NYSE Cross Listing			
AFTER (λ)	0.154 ***		−2.072
	(4.09)		(−1.08)
AFTER×ln(VOLUME BOVESPA) (γ)		0.008***	0.110
		(4.10)	(1.16)
Effect at average ln(VOLUME BOVESPA)		0.162	0.160

If greater disclosure leads to less information asymmetries and greater share liquidity.

Trading volume

This increase from migration occurs mainly for non-voting shares.

Both effects are permitted, the sign of λ becomes negative but γ stays positive.

	Heteroskedastic		
	Model 1	Model 2	Model 3
All Shares			
AFTER (λ)	0.070***		−2.047**
	(3.25)		(−2.21)
AFTER×ln(VOLUME BOVESPA) (γ)		0.003***	0.104**
		(3.29)	(2.28)
Effect at average ln(VOLUME BOVESPA)		0.061	0.063
Only Non-Voting Shares			
AFTER (λ)	0.074***		−1.170
	(3.08)		(−1.02)
AFTER×ln(VOLUME BOVESPA) (γ)		0.004***	0.062
		(3.10)	(1.08)
Effect at average ln(VOLUME BOVESPA)		0.081	0.088
Only Voting Shares			
AFTER (λ)	0.033		−5.644***
	(0.67)		(−3.26)
AFTER×ln(VOLUME BOVESPA) (γ)		0.002	0.277***
		(0.76)	(3.27)
Effect at average ln(VOLUME BOVESPA)		0.041	−0.024
Only Shares of Firms with a Prior NYSE Cross Listing			
AFTER (λ)	0.154 ***		−2.072
	(4.09)		(−1.08)
AFTER×ln(VOLUME BOVESPA) (γ)		0.008***	0.110
		(4.10)	(1.16)
Effect at average ln(VOLUME BOVESPA)		0.162	0.160

Subject

※ X_1과 X_2를 따로 돌리면 $\beta_1>0$, $\beta_2>0$ 인데, 같이 돌리면 $\beta_1>0$, $\beta_2<0$ 인 경우

'True model

$$Y = \alpha + \beta_1 X_1 + \varepsilon$$

· However, Y: Tobin q, X_1: CGI, X_2: CGI×D

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

① $\hat{\beta}_{12}$

$$\hat{\beta}_{12} = \frac{\hat{\beta}_1}{1-\rho_{12}^2} - \frac{\rho_{12}^2}{1-\rho_{12}^2} \cdot \frac{\hat{\beta}_2}{\hat{\beta}_1}$$

ex) $Y=\alpha+\beta_1 X_1+\beta_2 X_2+\varepsilon$ 에서 $\rho_{12}=0.98$, $\hat{\beta}_1=0.21$, $\hat{\beta}_2=0.05$

$\hat{\beta}_1$: $Y=\alpha+\beta_1 X_1+\varepsilon_1$ 에서 구한 것 / $\hat{\beta}_2$: $Y=\alpha+\beta_2 X_2+\varepsilon_2$ 에서 구한 것

$$\Rightarrow \frac{0.21}{1-0.98^2} - \frac{0.98^2}{1-0.98^2} \cdot \frac{0.05}{0.21} = 0.491 > 0$$

② $\hat{\beta}_{21}$

$$\hat{\beta}_{21} = \frac{\hat{\beta}_2}{1-\rho_{21}^2} - \frac{\rho_{21}^2}{1-\rho_{21}^2} \cdot \frac{\hat{\beta}_1}{\hat{\beta}_2}$$

$$= \frac{0.05}{1-0.98^2} - \frac{0.98^2}{1-0.98^2} \cdot \frac{0.21}{0.05}$$

$$= -102.9 < 0$$

" " $\hat{\beta}_2$

$$Var\begin{pmatrix} b_1 \\ b_2 \end{pmatrix} = \begin{pmatrix} \sigma_{x_1}^2 & \sigma_{x_1x_2} \\ \sigma_{x_1x_2} & \sigma_{x_2}^2 \end{pmatrix}^{-1} \sigma_\varepsilon^2$$

$$= \frac{1}{\sigma_{x_1}^2 \sigma_{x_2}^2 (1-\rho_{x_1x_2}^2)} \begin{pmatrix} \sigma_{x_2}^2 & -\sigma_{x_1x_2} \\ -\sigma_{x_1x_2} & \sigma_{x_1}^2 \end{pmatrix} \sigma_\varepsilon^2$$

$$Cov(b_1, b_2) = -\frac{\sigma_{x_1x_2}}{\sigma_{x_1}^2 \sigma_{x_2}^2 (1-\rho_{x_1x_2}^2)} \sigma_\varepsilon^2$$

$\sigma_{x_1x_2} \rightarrow Cov > 0$

X_1과 X_2가 인접한

D_1, $D_1 \cdot X_1$ 이라는 점을

$Cov > 0$.

$Cov(b_1, b_2) < 0$

따라서, 하나변수가

$\ominus$과 나올수 있다.

Trading volume

λ : the stock's proportional change in unconditional volume

γ : the change in the stock volume's elasticity with respect to Bovespa's volume.

ln(VBt) 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%.
-> -2.047+(0.104*20.29)=0.063

	Heteroskedastic		
	Model 1	Model 2	Model 3
All Shares			
AFTER (λ)	0.070***		−2.047**
	(3.25)		(−2.21)
AFTER×ln(VOLUME BOVESPA) (γ)		0.003***	0.104**
		(3.29)	(2.28)
Effect at average ln(VOLUME BOVESPA)		0.061	0.063
Only Non-Voting Shares			
AFTER (λ)	0.074***		−1.170
	(3.08)		(−1.02)
AFTER×ln(VOLUME BOVESPA) (γ)		0.004***	0.062
		(3.10)	(1.08)
Effect at average ln(VOLUME BOVESPA)		0.081	0.088
Only Voting Shares			
AFTER (λ)	0.033		−5.644***
	(0.67)		(−3.26)
AFTER×ln(VOLUME BOVESPA) (γ)		0.002	0.277***
		(0.76)	(3.27)
Effect at average ln(VOLUME BOVESPA)		0.041	−0.024

Characteristics of migrating firms

Cox proportional hazard model

$$h(t) = h_0(t)exp(\beta' X_t) \quad (9)$$

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.

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.

Firms with substantial growth opportunities should be more likely to choose migration as a bonding mechanism that reduces their cost of funding.

-> Growth opportunities: sales growth and Tobin's q
-> Control: 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, industry differences.

Characteristics of migrating firms

Cox proportional hazard model $h(t) = h_0(t)\exp(\beta' X_t)$

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.

Characteristics of migrating firms

A point estimate greater (less) than unity(=1) indicates a greater (lesser) likelihood of migration due to an increase in the variable relative to the baseline hazard, h0(t).

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.

There is some evidence (only when variables are not winsorized) that firms with a lower return on equity are more likely to migrate.

Characteristics of migrating firms

Descriptive statistics of migrating and non-migrating firms.

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 (0.152)	0.267 (0.174)	0.194 (0.141)	0.629 1.30	0.212 (0.152)	0.253 (0.174)	0.183 (0.133)	0.56 1.03
Tobin's q	1.232 (1.084)	1.139 (0.997)	1.154 (0.960)	1.607 0.23	1.237 (1.097)	1.133 (1.010)	1.050 (0.920)	4.87*** 1.78*
Ln of Total Assets	15.090 (15.186)	14.783 (14.651)	13.552 (13.666)	13.57*** 8.75***	15.130 (15.289)	14.819 (14.750)	13.500 (13.489)	12.86*** 8.40***
Leverage	0.294 (0.293)	0.288 (0.275)	0.241 (0.235)	4.59*** 3.26***	0.295 (0.293)	0.290 (0.277)	0.242 (0.232)	4.13*** 3.04***
Return on equity	0.112 (0.146)	0.058 (0.113)	0.052 (0.083)	2.06** 0.15	0.112 (0.149)	0.050 (0.113)	0.068 (0.098)	1.36 0.42
Governance Index CGI					11.83 (11)	11.17 (11)	9.85 (10)	9.97*** 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.

Characteristics of migrating firms

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 I	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

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).

Total SEOs (48)=>Traditional SEOs (11) << Premium listing SEOs (Level 1,2, and NM : 37)

Conclusions

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.

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.

Choosing a premium enhances trading volume for non-voting shares, consistent with the notion that improved disclosure creates liquidity.