

THREE ESSAYS ON CORPORATE FINANCE: EVIDENCE FROM BRAZIL

by

Marcus V. Braga-Alves

Agricultural Engineer, Universidade Estadual de Londrina, 1993

Master of Business Administration, Pace University, 2002

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UNIVERSITY OF PITTSBURGH
Joseph M. Katz Graduate School of Business

This dissertation was presented
by
Marcus V. Braga-Alves

It was defended on
April, 15 2008
and approved by

Kuldeep Shastri, Ph.D.
Roger S. Ahlbrandt Sr. Endowed Chair Professor of Finance
Katz Graduate School, University of Pittsburgh

Gershon N. Mandelker, Ph.D.
Katz Alumni Endowed Chair Professor of Finance
Katz Graduate School, University of Pittsburgh

Matthew R. Morey, Ph.D.
New York Stock Exchange Scholar Professor of Finance
Lubin School of Business, Pace University

Frederik P. Schlingemann, Ph.D.
Associate Professor of Finance
Katz Graduate School, University of Pittsburgh

Chad J. Zutter, Ph.D.
Assistant Professor of Finance
Katz Graduate School, University of Pittsburgh

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This dissertation is dedicated to my mother, Silvia Maria, the most influential person in my life.

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Abstract

In this study, we use some relatively unique characteristics of the Brazilian stock market to test corporate governance, capital structure, and payout decisions hypotheses. In Chapter One, we find that a composite index (NM6) that proxy for the main governance practices targeted by Bovespa's voluntary reform is statistically and economically related to higher market valuation. We also find that an investment strategy that bought stocks of better governed firms and sold stocks of poorly governed firms would have earned annual abnormal returns of 10.4 between 2001 and 2005. In Chapter Two, we examine how entrenchment is related to capital structure in a market characterized by closely held firms and significant separation between ownership and control. Our results support the hypothesis that entrenched insiders choose less levered capital structures to reduce the probability of bankruptcy or to elude external monitoring by debtholders. In Chapter Three, we examine the relation between firm characteristics and the choice of payout on equity. In Brazil, firms can distribute earnings to shareholders in the form of dividends or notional interest equity. Whereas dividends are not taxed at the personal level, the net tax effect of interest payments is lower because of their deductibility. Our results are consistent with the use of the notional interest on equity because of its tax deductibility despite the personal tax advantage of dividend payments.

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Preface

The importance of emerging financial markets as sources of higher returns and diversification has rapidly increased during recent years. Among these markets, Brazil has been often mentioned as one of the countries with the most promising future. For example, two economists from Goldman Sachs in a 2003 study included this South American powerhouse as one of the four developing countries that could become much more influential players in the world economy.¹ The investment bank also suggests that the Brazilian economy will be larger than the Italian economy by 2025, the French economy by 2031, and the British and German economies by 2036.² In February 2008, the Financial Times announced that Brazil left China behind as the largest market on the MSCI Emerging Markets index, which considers the value of shares available to investors rather than the total market capitalization.³ In this study, we use some relatively unique characteristics of the Brazilian stock market to test hypotheses related to corporate governance, capital structure, and payout decisions.

In December 2000, the São Paulo Stock Exchange (Bovespa) launched a new premium market segment, Novo Mercado, for companies that voluntarily commit to what the exchange calls “good practices of corporate governance”. In Chapter One, we construct a composite index (NM6) that combines six proxies for the main governance practices targeted by Bovespa’s reform and find that higher scores for our index are related to higher market value. This relation is statistically and economically significant and robust to alternative specifications. On the other hand, our index is not significantly related to operating performance when we control for the

¹ The others included China, India and Russia.

² *Dreaming with BRICS: The path to 2050*. Goldman Sachs, 1999.

³ *Brazil moves to top of emerging market index*, FT.com Financial Time, February 28, 2008.

endogenous nature of this relation. An investment strategy that bought stocks of firms with high NM6 and sold stocks of firms with low NM6 would have earned abnormal returns of 10.4 percent per year between 2001 and 2005.

In addition, except in the US and a few other developed countries, firms are predominantly controlled by large shareholders. Therefore, Chapter Two examines the relation between entrenchment and capital structure in Brazil, where firms are closely held and there is significant separation of ownership and control. We find that the concentration of voting rights and the excess of voting power in the hands of the controlling shareholder are negatively related to financial leverage. And the concentration of cash-flow rights, more effective monitoring by the board of directors and family-ownership in firms that commit to higher standards of corporate governance are positively related to leverage. Our results are consistent with the hypothesis that entrenched controlling shareholders choose less levered capital structures to reduce the probability of bankruptcy and/or to elude external monitoring by debtholders.

Finally, the Brazilian taxation regime allows earnings distributions to shareholders characterized as notional interest on equity. Although dividends are not taxed at the personal level and interest on equity is subject to a withholding tax, the net tax effect of interest payments is lower because of their deductibility. In Chapter Three, we examine the relation between firm characteristics and the choice of payout on equity in Brazil. We find evidence that higher profitability and lower non-equity tax shields are associated with a higher probability of interest on equity payments in relation to dividend distributions. This result is consistent with the use of interest on equity to take advantage of its tax deductibility despite the personal tax advantage of dividend payments. Surprisingly, increases in payout ratios are related to a higher probability of dividend distributions after a year of interest payments, a result that is consistent with a demand

for payouts with lower taxes at the personal level. We also find that the payout form is significantly related to abnormal returns only for announcements of interest payments to be voted on by shareholders after we control for size and yield.

Chapter One - Corporate governance, valuation and performance

1.1 Introduction

In response to increasing capital markets competition and demand for superior shareholder rights, the São Paulo Stock Exchange (Bovespa) launched in December 2000 a new premium segment, Novo Mercado, for companies that voluntarily subscribe to what the exchange calls “good practices of corporate governance”. Companies listed on this premium segment are required to follow a “one-share, one-vote” policy, keep a minimum free-float of 25 percent of the outstanding shares, grant minority shareholders the same rights given to controlling shareholders in the event of control transfer and have a board with at least 5 directors, who are elected to serve concurrent terms of one or two years. In addition, companies in Novo Mercado have to commit to higher standards of information disclosure, including the preparation of financial statements according to the International Accounting Standards (IAS) or the US Generally Accepted Accounting Principles (US GAAP).⁴ If a firm chooses to delist from Novo Mercado, the controlling shareholder is required to make a tender offer for all outstanding shares at a price determined by a renowned appraiser. This appraiser is chosen by the minority shareholders from a three-nominee list submitted by the company’s board of directors.

Bovespa has also created two additional segments, Nível (Level) 2 and Nível 1, for companies that do not commit to the “one-share, one vote policy.” The corporate law in Brazil allows companies that went public before 2001 to issue up to two-thirds of their capital as non-voting shares. Companies that went public after 2001 are allowed to issue up to 50 percent of

⁴ The International Accounting Standards (IAS) were issued by the International Accounting Standards Committee (IASC) between 1973 and 2000. After the International Accounting Standards Board (IASB) replaced the IASC in 2001, some IAS were amended or replaced with new International Financial Reporting Standards (IFRS). The IASB has also adopted or proposed new IFRSs on topics for which there was no previous IAS.

their capital as non-voting shares. Since a shareholder can retain control of a Brazilian dual-class firm by owning as little as 16.7 percent of its outstanding shares, the requirement that capital be solely constituted by voting shares makes Novo Mercado less attractive for controlling shareholders. Nível 2 allows for non-voting stocks but requires compliance with all other Novo Mercado rules. Nível 1 requires only compliance with the 25-percent minimum free float and with more stringent disclosure rules that are common to the three “good governance” levels.

In this study, we combine six corporate governance practices that proxy for Novo Mercado rules into an objective index (NM6) and examine whether the practices targeted by this voluntary reform are significantly related to firm value and operating performance in Brazil, an important emerging market.⁵ This examination is important since anecdotal and scholarly evidence have suggested that stronger investor protection has a positive effect in the development of emerging markets, which represent an important source of high returns and diversification. In a series of surveys conducted between 1999 and 2000, McKinsey & Co. found that institutional investors are willing to pay as much as 28 percent more for better governed companies in developing markets.⁶ In addition, the International Finance Corporation (IFC), the Organization for Economic Co-Operation and Development (OECD), and the US Agency for International Development (USAID) argue that lower standards of corporate governance have been a major factor in economic instability across the globe and provide an overview of the issues to be addressed by firms in order to improve shareholder rights. This argument is

⁵ Wilson and Purushothaman (2003) estimate GDP growth, income per capita, and currency movements for Brazil, Russia, India, and China and conclude that these countries may be among the eight largest economies in the world by 2050. They create the acronym BRIC as a reference to those four promising emerging markets.

⁶ Coombes and Watson (2000) analyzed the results of the surveys conducted by McKinsey & Co. in cooperation with the World Bank. The surveys examined the attitude of institutional investors toward corporate governance in Asia, US, Europe, and Latin America. The authors argue that the 28 percent premium reflects the need for improved shareholder rights and disclosure in emerging markets. The surveys also show that investors are not willing to pay such high premium for companies in the US and Europe, where one can traditionally find higher levels of investor protection.

supported by empirical evidence in Johnson et al. (2000) that low standards of corporate governance contributed more to poor market performance in emerging countries during the Asian Crisis than did macroeconomic factors.

More recently, other scholars have examined monitoring mechanisms and transparency standards across firms in less developed markets. For example, Klapper and Love (2004) show that better corporate governance practices are significantly related to higher firm valuation and operating performance in emerging markets. Bai et al. (2003), Black et al. (2005), Leal and Carvalhal-da-Silva (2005), Black et al. (2006), and Chong and Lopez-de-Silanes (2006) have documented a positive relation between corporate governance and firm value in China, Korea, Brazil, Russia, and Mexico respectively. Black et al. (2005) and Chong and Lopez-de-Silanes (2006) also examine the relation between governance and operating performance. While the former do not find a significant relation for Korean firms, the latter find that the relation is statistically and economically significant for Mexican firms.

Our paper contributes to this literature by examining the effectiveness of the restricted set of governance practices targeted by Bovespa in an effort to increase shareholder rights in Brazil, a country with large private benefits of control, weak investor protection and low disclosure standards.⁷ In addition to determining whether the provisions required by Novo Mercado have a significant impact on firm value and operating performance, we examine the relation between our NM6 index and stock returns by testing whether an investment strategy that bought stocks of firms with high values for NM6 and sold stocks of firms with low values for NM6 would have resulted in abnormal returns relative to the predictions of Carhart's (1997) four-factor model.

⁷ Nenova (2001) ranks Brazil 24th in terms of investor rights, 43rd in terms of law enforcement, and 40th in terms of accounting standards among 49 countries. Nenova (2003) estimates that controlling shareholders appropriate, on average, 23 percent of shareholder value in Brazil. Dick and Zingales (2004) estimate that the average private benefits of control in Brazil correspond to 65 percent of equity value.

Our results show that the governance index used to proxy for the voluntary corporate governance reform promoted by Bovespa is statistically and economically associated with higher firm valuation. After controlling for firm characteristics, we find that a worst-to-best improvement in our NM6 index would result in a 0.35 increase in Tobin's q , which corresponds to a 30.2 percent increase for a company with Tobin's q equal to the sample mean. The positive relation between NM6 and valuation is robust to the use of 2SLS and fixed effects estimations to address problems with simultaneously determined regressor and omitted characteristics. This is an important result when we consider that previous studies of corporate governance in Brazil use indices that combine 20 or more governance attributes and find that worst-to-best improvements result in an increase in Tobin's q between 37 and 42 percent for the average company in their sample. Our results support Bebchuk et al. (2005) and Brown and Caylor (2006), who suggest that academic research that identifies and focuses on a more restricted number of governance practices are of great relevance since concentrating on an overly large set of provisions may lead firms to make unproductive and wasteful decisions.

On the other hand, the significance of the relation between the Brazilian voluntary reform and operating performance depend on whether we take the endogenous nature of this relation in consideration. Before controlling for endogeneity, we find a statistically and economically significant relation indicating that a company with ROA equal to the sample mean would have a 55.6 percent increase in ROA if it moved from the lowest to the highest score for our index by adopting the six practices required by Novo Mercado. But the relation between NM6 and ROA is not significant when we use 2SLS and fixed effects estimations, indicating that the governance practices targeted by Bovespa have no effect on operating performance when we control for endogeneity.

Finally, we find that a zero-investment strategy that bought stocks of firms with NM6 greater than the median and sold stocks of firms with NM6 equal to or lower than the median would have provided a 10.4 percent annual abnormal return over our sample period. We also find a significant and negative abnormal return of 7.4 percent for the low NM6 portfolio and a positive but not significant abnormal return of 3.0 percent for the high NM6 portfolio, indicating that the difference between the stock performances of better governed and poorly governed companies is driven by the underperformance of stocks with NM6 equal to or lower than the sample median. These results are robust when we add illiquidity as a fifth-factor in the factor model. As Klapper and Love (2004) argue, if investors required additional compensation for considering poor governance as a source of risk, we should observe higher, not lower, returns for poorly governed companies. Therefore, the authors rely on market inefficiency arguments to explain a positive relation between governance and stock returns and suggest that investors may underestimate the agency costs associated with weaker shareholder rights.

This study has important policy implications for the development of capital markets in emerging countries. With lower expropriation by insiders, investors are more willing to pay higher prices for securities since they expect higher returns on their investment. And with higher market valuation, more firms seek public financing to expand their business. Shleifer and Wolfenzon (2002) present a theoretical model of an entrepreneur going public in a market with a poor legal environment, which provides substantial opportunity for corporate profits diversion. The model predicts that firms tend to be larger, more valuable and more plentiful in countries with better investor protection. Consistent with that model, La Porta et al. (1997, 1998, 2000 and 2002) show that firms have greater access to external financing in countries with more effective legal protection for minority shareholders, resulting in broader and more valuable capital

markets. La Porta et al. interpret their results as an indication that countries may promote entrepreneurship by limiting expropriation by insiders.

But while these studies posit that a stronger regulatory environment is beneficial to the development of capital markets, an increasing number of papers suggest that excessive country regulation may be too costly to implement and may limit investment initiatives. Zhang (2007), for example, finds negative abnormal returns for US and foreign firms around legislative events that led to the passage of the Sarbanes-Oxley Act (SOX) in 2002. In another empirical analysis, Litvak (2007) reports a negative reaction around events related to the enactment of SOX for cross-listed companies relative to non-cross-listed companies from countries with high disclosure standards. In contrast, Black and Khanna (2007) examine the market reaction to a major mandatory governance reform in India (Clause 49) that applied first to large firms. The authors find that returns for large firms were on average 4 percent higher than those for small firms over a 2-day window around the reform announcement. They suggest that the positive reaction to Clause 49 in India and the negative reaction to SOX in the US may be explained by greater benefits of market reforms in countries with weaker legal environments.

A possible alternative explanation for these apparently contradictory results may be that, although mandatory, Clause 49 was sponsored and strongly supported by the Confederation of Indian Industry while SOX faced great opposition among market participants who believed that SOX would impose significant regulatory burdens on public companies. Since mandatory reforms without the support of market participants are usually associated with difficult and lengthy processes, our study of a voluntary market reform in Brazil provides valuable evidence to market institutions and policy-makers engaged in the current debate regarding the role and design of corporate governance in emerging economies.

The remainder of this paper is organized as follows: Section 2 provides a literature review of the impact of corporate governance on firm valuation and operating performance; Section 3 contains a discussion of the governance practices and the composite index analyzed in this study; Section 4 describes our sample selection procedure and provides descriptive statistics; Section 5 explains the methodological approach used to test the importance of corporate governance in explaining firm value and performance and presents our empirical results; and Section 6 summarizes and concludes.

1.2 Literature review

Although previous studies have examined the effect of corporate governance mechanisms on firm value and performance, most have concentrated on the US stock market, which is characterized by dispersed ownership and strong investor protection. Using a broad index based on 24 provisions that limit shareholder rights and are monitored by the Investor Responsibility Research Center (IRRC), Gompers et al. (2003) find that corporate governance is significantly related to firm valuation and operating performance in the US. The authors also show that an investment strategy that purchased stocks of better governed companies and sold stocks of poorly governed companies earned an abnormal return of 8.5 percent per year.

In a related study, Bebchuk et al. (2005) investigate the same 24 IRRC provisions and identify six attributes that fully drive the effect of governance on valuation and performance. Four of these six provisions limit shareholder voting power (staggered boards, limits of bylaws amendments, supermajority requirements for charter amendments and mergers) while the remaining two are anti-takeover defenses (poison pills and golden parachutes). Brown and Caylor (2006) create an index based on 51 provisions monitored by the Institutional Shareholder

Services (ISS), including both internal and external mechanisms of control, and demonstrate a significant link between their index and valuation. Moreover, they find that an index with only seven of those provisions fully explains the effect of governance on valuation and conclude that only a small number of governance attributes are related to firm value.

The enactment of the Sarbanes-Oxley Act (SOX) in 2002 and the approval of new governance rules by the Securities and Exchange Commission (SEC) in 2003 motivated a number of recent studies that examine the importance of corporate governance in the US. For example, Aggarwal and Williamson (2006) construct an index of six governance practices that captures new provisions targeted by SOX and the SEC and test the relation between their index and market valuation. Their index is based on characteristics monitored by the ISS and represents the following new mandatory regulations: a board with a majority of independent directors, an independent nominating committee, an independent compensation committee, an independent audit committee with at least three members, executive sessions with only non-executive directors and, finally, the adoption of corporate governance guidelines. The authors find that these regulations are statistically and economically associated with firm value. Specifically, they report that if the median company in their sample improved their index from zero to six by adopting all the new regulations, Tobin's q would improve by 32 percent. Their results also show a significant and positive relation between the index and firm value for the two-year period that preceded the regulation, suggesting that the market was already rewarding firms that had voluntarily adopted higher standards of corporate governance.

Gompers et al. (2003), Bebchuk et al. (2005), and Aggarwal and Williamson (2006) do not make strong claims about a causal role of governance on valuation and performance and observe that these variables may be, at least in part, endogenously determined. This concern is

shared by a growing literature that provides evidence that corporate governance and firm value (or corporate governance and performance) may be simultaneously determined. Another frequent criticism of studies that test the effect of governance on valuation and performance is that these relations may be spurious. In that case, if the model specification adequately captures the effect of all relevant exogenous variables on valuation and performance, we should not find any remaining effect due to corporate governance. For these reasons, endogeneity is always an important factor to be considered in empirical studies of corporate governance and is addressed by us in Section 5.

More recently, financial economists have provided evidence of a significant relation between corporate governance and firm value in countries where poor investor protection makes expropriation by controlling shareholders a considerably greater problem. Klapper and Love (2004), for example, examine this relation in a cross-section of firms from 14 emerging markets using a governance score compiled by Credit Lyonnais Securities Asia (CLSA). The CSLA score is a composite of 57 binary (yes/no) questions covering seven different categories: management discipline, transparency and disclosure, board independency, board accountability, management accountability, investor protection and social awareness. Their empirical tests indicate that companies with higher governance standards have higher market valuation and operating performance and that these relations are stronger in countries with weaker legal systems. The authors conclude that voluntary corporate governance reforms may improve investor rights even though they are not a perfect substitute for an effective judicial system.

Durnev and Kim (2005) use the CLSA and a disclosure practices score prepared by Standard & Poor's (S&P) to test the association between corporate governance and valuation for a sample of firms from 27 countries. The S&P score consists of information regarding whether a

firm discloses information on 91 items that are divided into three subgroups: ownership and investor relations, transparency and disclosure, and board structure. Their empirical results also suggest that firms can increase shareholders value by adopting higher levels of corporate governance and disclosure standards especially in countries with weaker legal regimes. However, Durnev and Kim (2005) and Klapper and Love (2004) emphasize that, as these are cross-sectional studies, a time-series analysis would be required to address the endogeneity problem.

Baker et al. (2007) use monthly governance ratings compiled by AllianceBernstein for firms in 22 emerging countries to examine the impact of firm-level and country-level governance on market valuation and operating performance. Using fixed effects analysis to control for omitted firm characteristics, the authors find that improvements in governance have little effect on market valuation in countries with strong investor protection, positive and significant effect in countries with intermediate level of investor protection, and a negative and significant effect in countries with weak investor protection. These results suggest that higher standards of corporate governance may actually decrease company value if its implementation costs are not compensated by its benefits to shareholders.

An increasing number of country-level studies have provided comparable empirical evidence of the importance of corporate governance in emerging markets. Bai et al. (2003) use eight variables that proxy for internal and external mechanisms of control and find that investors pay a premium of up to 63 percent for the best-governed publicly-traded firms over the worst-governed firms in China. Black et al. (2005) show that a worst-to-best improvement in their Korean governance index, which includes 30 governance attributes, is associated with a 0.30 increase in Tobin's q, representing a 35 percent increase relative to the average Tobin's q of

0.86. On the other hand, the authors find no evidence that better governed Korean companies are more profitable. In looking at Russian firms, Black et al. (2006) combine six different indices and document a statistically and economically significant relation between this combined index and firm value. Chong and Lopez-de-Silanes (2006) construct an index with 55 governance practices that Mexican firms can voluntarily commit to and show a significant impact of corporate governance on valuation and operating performance in that emerging economy.

For a sample of Brazilian firms, Leal and Carvalhal-da-Silva (2005) construct a corporate governance index with 24 binary (yes/no) questions for the years of 1998, 2000, and 2002. The questions can be classified into four groups: disclosure, board composition, conflicts of interest, and shareholder rights. A worst-to-best improvement in their index is associated with a 0.38 increase in Tobin's q , representing a 42 percent increase for the average Tobin's q of 0.91. Silveira and Barros (2007) show that a worst-to-best change in a 20-question based governance index resulted in a 0.25 rise in Tobin's q , representing a 37 percent increase for the average Tobin's q in their sample. The results on these two studies are robust to the use of simultaneous equations to take into account the endogenous nature of the relation between governance and valuation. Carvalho and Pennacchi (2005) examine the market reaction to voluntary migrations to Bovespa's "good governance" market segments and find a significant decrease in the price differential between voting and non-voting stocks. This voting premium represents the price shareholders are willing to pay for voting rights and is considered to be the lower bound for private benefits of control by many authors. Carvalho and Pennacchi also find positive abnormal returns for non-voting stocks around the migration date. Carvalhal-da-Silva and Subrahmanyam (2007) find a negative relation between a 15-question governance index and the premium paid for voting shares.

Although these four studies have provided evidence illustrating the importance of corporate governance in Brazil, our paper adds to this literature by specifically examining the effectiveness of the set of governance practices targeted by Bovespa. As argued by Bebchuk et al. (2005) and Brown and Caylor (2006), not all governance provisions are significantly related to valuation and concentrating in an overly large set of provisions may lead firms to make unproductive and potentially value-destroying decisions. Consequently, assessing the effect of these corporate governance practices on firm value and operating performance provides valuable information regarding the success or failure of this voluntary reform in Brazil.

1.3 Corporate Governance practices and Novo Mercado

Novo Mercado listing rules consist of provisions related to the separation of ownership and control, ownership dispersion, mandatory bid rule, board monitoring and reporting standards. We concentrate our analysis on six practices that we believe serve as good proxies for the set of rules that are targeted by the corporate governance reform promoted by Bovespa:

- 1) Ratio of cash-flow to voting rights owned by controlling shareholders greater than or equal to 1;
- 2) Minimum free-float of 25 percent of outstanding shares;
- 3) Tag-along rights granted to minority shareholders beyond what is required by law;
- 4) Board of directors with 5 or more effective members;
- 5) Directors elected for concurrent terms of one or two years;
- 6) Financial statements reconciled in accordance with IAS or US GAAP.

The definition of the variables used to represent these practices closely follows the definitions we find in Novo Mercado listing rules. Our first governance variable is based on the ratio of cash-flow to voting rights held by controlling shareholders as a proxy for the “one-share, one-vote policy.” Cash-flow rights are defined as the percentage of the outstanding shares held

by the controlling shareholder.⁸ Voting rights are defined as the percentage of the voting shares held by the controlling shareholder. For the purpose of constructing our governance index, this variable (Cash-Flow to Voting Rights) takes on a value of one if the ratio is greater than or equal to 1 and zero otherwise. Our second governance variable is based on the stock free-float, which refers to the shares of the company that are not directly or indirectly owned by the controlling shareholder. Therefore, a minimum free-float of 25 percent means that the percentage of outstanding shares controlled by the main shareholder and related entities is less than 75 percent. The Minimum Free-Float variable in NM6 takes on a value of one if free-float is greater than or equal to 25 percent and zero otherwise.

Law 10303/01 requires that all minority holders of voting stocks receive at least 80 percent of the stock price paid to controlling shareholders when there is transference of control. Therefore, a company provides tag-along rights beyond what is required by law if it grants voting shareholders the right to receive more than 80 percent of the price paid to the controlling shareholder. We also include in this group those companies that grant tag-along rights to non-voting shareholders since Carvalhal-da-Silva and Subrahmanyam (2007) show that the price differential between voting and non-voting stocks is significantly lower in companies that voluntarily grant tag-along rights to non-voting shares. Our third governance variable (Superior Tag-Along Rights) takes on a value of one if the company's bylaws grant minority shareholders tag-along rights beyond the minimum legal requirement and zero otherwise.

Boards of directors in Novo Mercado firms must have at least five effective members elected by the General Meeting. Our fourth governance (Minimum Board Size) variable is based on this requirement. Specifically, companies with five or more directors are assigned a value of

⁸ A controlling shareholder is defined as an individual investor or group of investors who owns the largest percentage of voting shares. A group of investors is defined by shareholder agreements, business or family relations.

one whereas companies with less than five directors are assigned a value of zero for this variable. Novo Mercado firms cannot have staggered boards or directors elected for terms that exceed two years. Thus our fifth governance variable (Term of Directors) takes on a value of one if directors are elected for concurrent one- or two-year terms and zero otherwise. Finally, our sixth governance variable is based on whether a company reconciles its financial statements according to IAS or US GAAP and makes the reconciled statements available to all shareholders. Specifically, this variable (Superior Disclosure) takes on a value of one if the firm satisfies this disclosure requirement and zero otherwise.

As stated above, each of the six provisions considered in this study correspond to a binary question - a 'yes' answer is assigned a value of one and a 'no' answer is assigned a value of zero. The value of our composite index (NM6) is calculated by simply adding the values corresponding to the answers for those questions. Therefore, the NM6 for a Novo Mercado firm or any other firm that meets all six rules is six. It is important to note that Bovespa may allow Novo Mercado firms additional time for compliance with more onerous practices such as reconciliation of financial statements to IAS or GAAP and minimum free-float of 25 percent. For this reason, some firms listed on that premium segment may have a NM6 lower than six. The maximum value of NM6 for firms listed on Nível 2 is also six, but these firms are less likely to obtain this score because they have two classes of stocks (voting and non-voting) and controlling shareholders usually hold a majority of voting stocks without a matching percentage of non-voting stocks. Therefore, the ratio of cash-flow to voting rights owned by the controlling shareholder is very likely to be lower than one unless the firm is listed on Novo Mercado.⁹ Since firms listed on Nível 1 commit only to one of the governance rules analyzed in our study

⁹ None of the Nível 2 firms in our sample has the ratio of cash-flow to voting rights greater than or equal to 1. Consequently, the maximum NM6 for these firms is 5.

(minimum free-float of 25 percent), their NM6 value is expected to be one like any other firm that meets only one of the six rules. But Nível 1 firms that commit to more than one rule have an NM6 greater than one. In any year that a firm does not meet any of the six rules, its NM6 is assigned a value of zero.

In Brazil, companies' bylaws may require that any corporate dispute between controlling and minority shareholders be resolved by a market arbitration panel whose members are distinguished experts in capital markets. By the end of 2005, Petrobras was the only firm that used market arbitration for dispute resolution and was not listed on Novo Mercado or Nível 2.¹⁰ Consequently, a binary variable that equals one when the company settles corporate disputes through arbitration procedures will mainly be identifying companies listed on one of these two “good governance” segments. For this reason, we don't include the alternative to lengthy and costly legal processes in Brazilian courts when calculating our NM6 index.

1.4 Sample selection and summary statistics

Our sample consists of non-financial firms listed on the São Paulo Stock Exchange (Bovespa) with trading volume greater than 0.01 percent of the total volume traded in any of the years between 2001 and 2005. We do not include firms with negative book value of equity to avoid effects related to severe financial distress. The final sample of 178 firms (741 firm-year observations) is large enough to be considered as representative of the Brazilian-listed companies since it accounts for 81 percent of the stock market capitalization (excluding financial firms) over our sample period. Data on the six governance attributes is obtained from annual reports

¹⁰ Petrobras, a state-owned giant in the oil sector, also complies with all the other Nível 2 rules except for the tag-along rights beyond the legal requirement.

filed at the Comissão de Valores Mobiliários (CVM) and available through INFOinvest, and data on firm characteristics and stock prices is obtained from Economatica.¹¹

The frequency distribution by year for our sample, shown in Table 1, Panel A, indicates no clustering in any specific year. Panel B shows the frequency distribution by industry. We use Bovespa's classification system, which divides industries into 9 non-financial categories according to the contribution of each industry to the firm's net sales. We observe a large number of firms in our sample classified as Basic Materials and Utilities and a relatively small number of firms in the Oil and Gas and Information Technology sectors. This high (low) representation of industries with assets that are very easily (difficult to be) monitored is to be expected in markets where expropriation by insiders is very common. And the low representation of companies in the Oil and Gas industry is explained by the government monopoly on exploration and distribution.

Table 2 provides summary statistics for Tobin's q, Return on Assets (ROA), the NM6 index, binary variables that identify the components of NM6, and binary variables that identify firms owned by foreign companies, families, and financial institutions. It also provides summary statistics for the following firm characteristics: book value of assets, two-year average of annual sales growth, inventory plus net PPE to assets ratio, capital expenditures to assets ratio, and the number of years the company is listed on Bovespa. Except for the NM6 and the binary variables, all variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. The mean (median) Tobin's q in our sample is 1.1446 (0.9946), that is, the market value of the average (median) firm is slightly greater than (almost equal to) the book value of its assets. The mean (median) score for NM6 is 2.52 (2.00), indicating a low level of shareholder rights especially for a period of a voluntary governance reform. Only 17.00 percent of our sample have a cash-flow to voting rights ratio greater than or equal to 1, confirming the widespread notion in

¹¹ CVM is the Brazilian equivalent of the Securities and Exchange Commission.

the Brazilian academic literature and specialized press that most controlling shareholders in that country concentrate voting power without a matching share of cash-flow rights.

We also find that 72.33 percent of the observations meet the minimum free-float rule. Tag-along rights are granted beyond the legal requirement in 12.55 percent of our sample. Boards of directors have 5 or more members in 84.75 percent and these members are elected for concurrent one- or two-year terms in 46.42 percent of the observations. Financial statements are reconciled according to IAS or US GAAP in 18.89 percent of the firm-years. A foreign investor is the controlling shareholder in 28.48 percent of our sample. The corresponding figures for families or individual investors and financial institutions or pension funds are 40.22 and 5.40 percent respectively.

As we see in Table 3, Panel A, there was no firm with NM6 equal to six in the first two years of our sample period and less than three percent of the firms in our sample had achieved this highest possible score for NM6 after five years of the voluntary reform. This is explained by the fact that the first listing on Novo Mercado happened only in 2002, by the fact that Bovespa grants additional time for compliance with more onerous governance practices, and by the fact that we consider that a firm reconciles its financial statements according to IAS or US GAAP only after the firm makes these statements available to all shareholders.¹² Panel B shows the percentage (number) of companies in our sample that adopted each of the practices used to construct our index through time. There was a large increase in the percentage (number) of

¹² Coffee (2002) suggests that the initially weak response to listing on Bovespa's "good governance" segments implied that a new listing segment would face tough competition with the stronger "reputation brand" of the NYSE. At the end of 2005, 18 companies were listed on Novo Mercado: two of these firms were not included in our sample because they are financial firms, five firms were IPOs that are not included in our sample because they did not have trading volume greater than 0.01 percent of the total volume traded in that year or because they had missing data for the variables used in our study, seven firms made financial statements according to IAS or US GAAP only in 2006 or later, and four firms had NM6 equal to six. By the end of 2006, the 40 companies listed on Novo Mercado represented 14 percent of the stock market capitalization and 17 percent of the trading volume. Other 50 companies were listed on Nível 1 and Nível 2.

companies that grant superior tag-along rights to minority shareholders, whereas there was noticeable improvement in four other governance practices: Cash-Flow to Voting Rights Ratio, Minimum Board Size, Term of Directors, and Superior Disclosure. There is no evidence that the voluntary reform led to any increase in the percentage (number) of firms that met the minimum free-float requirement.

Table 4 presents the correlation coefficients between pairs of variables of main interest. Both Tobin's q and ROA are positively correlated with NM6 and these correlations are significant at the 0.00 level. Tobin's q is significantly correlated with four of the governance practices in NM6, with the exceptions being the Minimum Free-Float and the Minimum Board Size variable. ROA is also positively and significantly correlated with four of the governance practices in NM6. ROA is not significantly correlated with Cash-Flow to Voting Rights and Minimum Free-Float. It is interesting to observe that Cash-Flow to Voting Rights and Minimum Free-Float are negatively correlated, what shows that controlling shareholders who issue non-voting stocks are more likely to meet the minimum free-float requirement.

The square of the correlation coefficient gives us the proportion of the variation in one variable that is accounted for by a linear fit of another. While we observe that 6.82 percent of the variation in Tobin's q can be explained by the variation in NM6, only 3.59 percent of the variation of ROA can be explained by our governance index. Between 1.16 and 4.71 (0.39 and 2.83) percent of the variation of Tobin's q (ROA) can be explained by the individual governance practices that constitute our index. In the next section, we combine our NM6 and the individual governance practices with a set of control variables in multiple regression analyses for a more accurate assessment of the impact of these variables on firm value and performance.

1.5 Methodology and empirical results

We start our analysis using panel data models to test the association of our NM6 index with firm valuation and operating performance. Similar to previous work in the emerging markets literature (e.g. Klapper and Love, 2004 and Chong and Lopez-de-Silanes, 2006), we use Tobin's q as our measure of firm valuation and ROA as our measure of operating performance. Tobin's q is defined as $((\text{book value of assets} + \text{market value of equity} - \text{total shareholders' equity} - \text{deferred taxes}) / \text{book value of assets})$. We define ROA as earnings before interest and taxes divided by assets. Our explanatory variables of main interest are NM6 and the six governance practices used to construct NM6. The natural logarithm of book value of assets and the natural logarithm of the number of years that the firm is listed on Bovespa are initially included as control variables but later are used only as instrumental variables in the 2sls estimation of valuation and performance respectively..

In Table 5, Models (1) and (2) present the results for pooled OLS regressions in which the dependent variable is Tobin's q. The main explanatory variables are NM6 and the binary variables that identify each of our proxies for Novo Mercado provisions. We include industry and year dummies and estimate clustered (Rogers) standard errors, which are White standard errors that account for within firm correlation. According to Petersen (2007), clustered standard errors are unbiased whether the firm effect is permanent or temporary, while fixed effects and random effects produce unbiased standard errors only when the firm effect is permanent. In Model (1), the coefficient on NM6 is positive and significant at the 0.03 level and indicates that a worst-to-best change in our governance index predicts a 0.3462 increase in Tobin's q, which corresponds to a 30.25 (34.81) percent increase for a company with Tobin's q equal to the sample mean (median).

In Model (2), which has the binary variables that identify the six Novo Mercado proxies as the main regressors, we observe positive and significant coefficients only for Superior Tag-Along Rights and for Superior Disclosure. The binary variables for Minimum Free-Float and Term of Directors have negative coefficients that are not significant. According to Model (2), a company that grants tag-along rights to minority shareholders beyond what is required by law has Tobin's q that is 0.1568 higher. This represents a 13.70 (15.77) percent increase for a company with Tobin's q equal to the sample mean (median). And a company that prepares financial statements according to IAS or US GAAP has Tobin's q that is 0.2187 higher than a company that doesn't. This represents a 19.11 (21.99) percent increase for a company with Tobin's q equal to the sample mean (median).

Models (3) and (4) present the results for pooled OLS regressions in which the dependent variable is ROA and the main explanatory variables are NM6 and the binary variables that proxy for Novo Mercado rules. We include industry and year dummies in all regressions and estimate clustered (Rogers) standard errors. In Model (4), the coefficient on NM6 is positive, significant at the 0.02 level and indicates that a worst-to-best change in our governance index predicts a 0.0576 increase in ROA, which corresponds to a 55.60 (58.60) percent increase for the average (median) ROA in our sample. In model (4), which has binary variables that identify the Novo Mercado governance practices as the main regressors, only the coefficient on the binary variable for Term of Directors is positive and significant. A company with ROA equal to the sample mean (median) would have an 18.73 (19.74) percent increase in ROA if directors are elected for concurrent one- or two-year terms.

Table 6 presents the pooled OLS estimates with clustered standard errors for regressions in which we include one individual governance practice in each model. All models include the

control variables reported in Table 5 but we suppress the coefficients in Table 6 for the sake of brevity. In Panel A, in which the dependent variable is Tobin's q, the coefficients on the binary variables are positive and significant for Cash-Flow to Voting Rights ratio, Superior Tag-Along Rights, and Superior Disclosure. The estimated coefficients represent, respectively, an 11.81, 15.35, and 18.42 (13.59, 17.67, and 21.19) percent increase for a company that has Tobin's q equal to the sample mean (median) and meets these requirements. In Panel B, which has ROA as the dependent variable, the only binary variable that has a significant coefficient is the one that identifies companies with concurrent one or two-year terms for directors. A company with ROA equal to the sample mean (median) would have a 0.1757 (0.1851) percent increase in ROA if it had directors elected for concurrent one- or two-year terms.

1.5.1 Taking endogeneity in consideration

Corporate governance studies are always very cautious in claiming a causal relation between corporate governance and valuation or corporate governance and performance because these relations may be endogenous and, therefore, OLS estimators may be biased and suggest a casual relation that does not exist. In this section, we make use of estimation techniques that consider the possibility that governance and our dependent variables are simultaneously determined or affected by omitted firm characteristics.

For example, at the same time that stronger governance practices may lower expropriation by insiders and increase firm value, poor valuation perspectives may lead companies to adopt governance practices that weaken shareholders rights and insulate controlling shareholders from internal and external disciplinary forces. Also, we may observe a spurious correlation between NM6 and valuation if some firm specific characteristic that affect both governance and firm value are not present in the specification. In the pooled OLS

regressions discussed above, we addressed this omitted variable issue by including relevant control variables to prevent them from driving the relation between NM6 and our dependent variables. We also control for potential endogeneity problems arising from differences across industries by including dummy variables for industry classification.

We first conduct a two-stage least squares (2SLS) analysis in which the structural model has Tobin's q as the dependent variable and the first-stage model has our governance index (NM6) as the regressand. The 2SLS estimation requires that we identify an exogenous instrument that is highly correlated with corporate governance but uncorrelated with firm value (or performance).¹³ In their study of the link between ownership and valuation, Himmelberg et al. (1999) suggest that the inclusion of proxies for future growth opportunities eliminates a priori the need for including the size variable as a determinant of firm value. Since we include the two-year average of annual sales growth and the capital expenditures to assets ratio in our regressions, we exclude the natural logarithm of assets from the valuation model and use it as an instrument to predict the NM6 index used in the Tobin's q regression. In first-stage model, we also include the binary variables that identify the controlling shareholder, the two-year average of annual sales growth, the ratio of tangible assets to total assets, the ratio of capital expenditures to assets, the lag of ROA, the natural logarithm of listing years, and industry and year dummies as controls. Table 7 presents the 2SLS coefficient estimate on the predicted NM6, which indicates a positive and significant relation between our governance index and firm value.¹⁴

¹³ A good instrumental variable is highly correlated with the endogenous variable but it is not correlated with the error in the structural model. If this is not the case, 2SLS estimates may be more biased and more likely to provide the wrong inferences than OLS estimates, as suggested by Larcker and Rusticus (2007). Identifying a good instrumental variable is a difficult task and, therefore, the results presented in Table 7 must be interpreted with caution.

¹⁴ The coefficient estimates for NM6 in the second stage regressions represent the relation between the predicted NM6 and the dependent variable. They do not represent the relation between our Novo Mercado index and Tobin's q or ROA.

When the structural model has ROA as the dependent variable, we exclude the natural logarithm of the number of years that the company is listed on Bovespa from the performance model and use it as an instrument to predict the NM6 index used in the ROA regression. In first-stage model, we also include the binary variables that identify the controlling shareholder, the natural logarithm of total assets, the two-year average of annual sales growth, the ratio of tangible assets to total assets, the ratio of capital expenditures to assets, and industry and year dummies as controls. In Table 7, we see that the coefficient estimate on the predicted NM6 is not significantly related to ROA, indicating that the relation between these variables is endogenous. Therefore, we cannot conclude that the governance practices analyzed in this paper have a significant impact in improving operating performance.

We also estimate the relation between the governance practices targeted by Bovespa and valuation (and performance) using fixed effects estimation. If the source of endogeneity is a firm-specific time-invariant characteristic that is omitted from our model specification, fixed effects help us to control for this unobserved heterogeneity. Table 8 shows that the coefficient on NM6 is still significantly related to valuation in fixed effects regressions with robust standard errors. This coefficient indicates that Tobin's q is 0.5010 higher for a firm that commits to all six governance provisions than for a firm that does not. That is, a worst-to-best change in the NM6 score would represent a 43.77 (50.37) percent increase for a company with Tobin's q equal to the sample mean (median) after controlling for omitted time-invariant characteristics. The coefficient estimate on NM6 is not significant in the performance (ROA) fixed effects regression, indicating that relation between NM6 and operating performance is spurious and not significant if we control for omitted variables.

1.5.2 Corporate governance and stock returns

In Figure 1, we observe that a stock index that mimics a theoretical portfolio with stocks listed on Bovespa's "good governance" segments (Novo Mercado, Nível 2 and Nível 1) persistently outperforms the two most important Brazilian market indices. As argued by Gompers et al. (2003), we should not observe any effect of corporate governance on stock returns beyond the announcement date of the commitment to higher standards of investor protection unless this relation is not fully incorporated by the market. In this section, we follow those authors and examine the relation between our corporate governance index and returns by estimating Carhart's (1997) four-factor model, which combines Fama and French's (1993) three-factor model and Jegadeesh and Titman's (1993) momentum factor. The model is:

$$R_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 Momentum_t + \varepsilon_t \quad (1.1)$$

where R_t is the monthly risk premium to a portfolio associated with a particular trading strategy and $RMRF_t$ is the monthly market risk premium in month ' t '.¹⁵ SMB_t , HML_t , and $Momentum_t$ are monthly returns on value-weighted, zero-investment factor-mimicking portfolios created based on market capitalization, book-to-market ratio, and 11-month momentum in stock returns. The intercept or alpha represents the return of the trading strategy in excess of passive investment in the four factors. We consider companies with more than one class of stocks as a single portfolio weighted by the proportion that each class represents in the total number of outstanding shares. Stock returns are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers.

¹⁵ We follow Leal and Rodrigues (2003) and use CDI as a proxy for the risk-free rate and Ibovespa as a proxy for the market portfolio. CDI (Interbank Deposit Certificate) is a Brazilian interest reference rate published on a daily basis by the Brazilian Securities Custody and Settlement Center. Ibovespa is the main indicator for the São Paulo stock market and reflects the performance of the most liquid stocks.

The construction of the SMB (small minus big) and HML (high minus low) factors follows Fama and French (1993). At the end of June, we allocate stocks to two size (small or big) portfolios according to whether their market capitalization is below or above the median. We then allocate the stocks to three portfolios based on their book-to-market ratio at the end of the previous fiscal-year using the 30 and 70 percentiles as breakpoints. The final portfolios are the intersections of the two portfolios formed on size and the three portfolios formed on the ratio of book to market value of equity. Value-weighted monthly returns on these portfolios are calculated from July to the following June. SMB is the difference between the average returns on the three small-cap portfolios and the average returns on the three big-cap portfolios. HML is the difference between the average returns on the two high book-to-market portfolios and the average returns on the two low book-to-market portfolios. The construction of the Momentum factor follows Carhart (1997) and represents the difference between the value-weighted average returns on companies with the highest 30 percent eleven-month returns and the value-weighted average returns on companies with the lowest 30 percent eleven-month returns.

In the first row of Table 9, Panel A, the dependent variable is the monthly risk-premium for a value-weighted portfolio of firms with NM6 greater than the median. In the second row, the dependent variable is the monthly risk-premium for a value-weighted portfolio of firms with NM6 lower than or equal to the median. The third row presents the results when we estimate the model with the dependent variable equal to the difference between the monthly return on the high NM6 portfolio and the monthly return on the low NM6 portfolio. The alpha in this case is 0.87 percent per month (10.44 percent per year) and is significant at the 0.05 level. The low NM6 portfolio earned a negative and significant alpha of 0.62 percent (7.44 percent per year), whereas the high NM6 portfolio earned a positive but not statistically significant alpha of 0.25

percent (3.00 percent per year). In summary, the significant difference between the performances is driven by the underperformance of stocks with NM6 lower than or equal to the sample median.

These results are consistent with Gompers et al. (2003), who show that an investment strategy that purchased shares of firms with less entrenched managers and sold shares in firms with more entrenched managers earned an 8.5 percent abnormal return per year in the US. But in the case of the American firms the result is driven by overperformance of better governed firms and underperformance of poorly governed firms. Our result is also consistent with the Credit Lyonnais Securities Asia's (CLSA) report of lower returns for poorly governed companies in emerging markets.¹⁶ Since additional compensation for higher risk in poorly governed firms should result in higher, not lower, returns, Klapper and Love (2004) rely on market inefficiency arguments to interpret the CLSA report finding. The authors suggest that, for example, investors may underestimate the costs related to the conflict of interest between insiders and minority shareholders, resulting in a positive relation between governance and returns (i.e. weaker shareholder rights leading to lower returns).

Since Amihud and Mendelson (1986), the finance literature has discussed whether liquidity significantly affects expected rate of returns. According to those in favor of the hypothesis that there is a significant relation between portfolio returns and liquidity, illiquid stocks demand higher required rates of return than liquid stocks do. Therefore, we examine the possibility that the expected excess return found in this section is in fact a premium for illiquidity by adding an illiquidity factor to the model. This fifth factor represents the difference between the value-weighted average returns on the 30 percent less liquid stocks and the value-weighted

¹⁶*Saints & sinners: Who's got religion?* Credit Lyonnais Securities Asia (CLSA), April 2001.

average returns on the 30 percent more liquid stocks. Illiquidity is calculated as in Amihud (2002) but using an eleven-month instead of a daily period, that is, we use the ratio of absolute return to financial trading volume for an eleven-month period as proxy for illiquidity. The results on Panel B show that we still find a positive and significant excess return for our investment strategy (alpha equals 0.85 percent per month, that is, 10.20 percent per year) and this result is still driven by underperformance of poorly governed company (alpha equals negative 0.61 percent per month, that is, negative 7.32 percent per year).

1.6 Summary and conclusions

In December 2000, the São Paulo Stock Exchange (Bovespa) launched a new premium segment, Novo Mercado, for companies that voluntarily subscribe to what the exchange calls “good practices of corporate governance”. We combine six governance practices common to all firms listed on Novo Mercado into a new index, NM6, and test whether these practices targeted by Bovespa are significantly related to firm value and operating performance. The six practices proxy for the following Novo Mercado rules: “one-share, one vote”, ownership dispersion, mandatory bid rule, boards with at least 5 directors, concurrent one- or two-year terms for directors, and financial statements reconciled in accordance with IAS or US GAAP.

We find that a worst-to-best improvement in our NM6 index results in an increase of 30.2 (34.8) percent for the mean (median) Tobin’s q in our sample. The positive relation between NM6 and Tobin’s q is robust when we take in consideration simultaneously determined regressor and omitted characteristics. When we replace our composite index with binary variables that identify the individual governance practices, the following three practices have positive and significant coefficients: cash-flow to voting rights ratio greater than or equal to 1, tag-along

rights beyond the legal requirement, and financial statements reconciled to IAS and US GAAP. The estimated coefficients for minimum free-float, boards with five or more directors and concurrent one- or two-year terms for directors are not statistically significant. NM6 is not significantly related to operating performance in 2SLS or fixed effects estimations. Finally, we find that a zero-investment strategy that bought stocks of firms with high NM6 and sold stocks of firms with low NM6 would have resulted in a 10.4 percent abnormal return per year over our sample period, a result that is driven by the underperformance of stocks with low NM6. As suggested by Klapper and Love (2004), this finding is consistent with investors underestimating the agency costs associated with weaker shareholder rights, but other interpretations that rely on market inefficiency are also possible.

This paper adds to the existing literature by providing empirical evidence of the success of a voluntary corporate governance reform in an emerging market often characterized as having weak legal environment and poor shareholder rights. Our findings have important policy implications with respect to the development of stock markets in countries with high ownership concentration and large private benefits of control, where instituting mandatory reforms is likely to be a difficult and lengthy process. Our work should provide valuable information to market participants, institutions and policy-makers who are engaged in the current debate regarding the role and design of corporate governance in less developed stock markets.

Chapter Two - Entrenched large shareholders and capital structure

2.1 Introduction

In the 1990s, two important studies found a significant relation between monitoring effectiveness and capital structure in the US. Mehran (1992) and Berger et al. (1997) present evidence that, for example, firms with weak monitoring by the board of directors have lower leverage ratios, a result that is consistent with the hypothesis that entrenched managers prefer less debt. Both papers also find that CEOs with higher ownership prefer more debt. Since ownership has been associated to incentive and entrenchment effects, this result does not allow a clear interpretation. On the one hand, Jensen and Meckling (1976) argues that the costs of self-interested, non-value-maximizing decisions by managers increase as their holdings of cash-flow rights rise, therefore, a positive relation between ownership and leverage would be consistent with a positive relation between incentive mechanisms and financial leverage. On the other hand, Morck et al. (1988) claim that voting power concentration insulates managers from disciplinary forces, therefore a positive relation between ownership and leverage would be consistent with a positive relation between entrenchment and more levered capital structures.

In this paper, we use a sample of firms listed on the São Paulo Stock Exchange (Bovespa) to extend the study of the relation between entrenchment and capital structure in a country where firms are predominantly controlled by large shareholders who can extract large benefits from control¹⁷. La Porta et al. (1999) have found that concentrated ownership structures are pervasive

¹⁷ Nenova (2003) estimates that controlling shareholders appropriate on average 23 percent of shareholders value in Brazil. Dick and Zingales (2004) estimate the average private benefits of control in Brazil as 65 percent of the equity value.

outside the US, with the exception of a handful of other very developed stock markets. La Porta et al. (2000) argue that, in countries with weak investor protection and concentrated ownership, controlling shareholders effectively determine corporate decisions. They can, for example, implement financing policies that benefit themselves at the expense of minority shareholders. Therefore, the relation between entrenchment of large shareholdings and capital structure in that important emerging market deserves a close examination.¹⁸

Another important characteristic of our sample that makes this study of significant relevance to the finance literature is the relatively unique ownership structure of Brazilian firms. Prior to 2001, corporate law allowed companies to issue up to two-thirds of their equity capital as non-voting shares. Companies that went public after 2001 are allowed to issue up to 50 percent of their capital as non-voting shares. This legal framework allows controlling shareholders to own a high percentage of voting rights without a matching share of cash-flow rights, making our sample especially appropriate for studying the relation between the incentive and entrenchment aspects of large ownership and capital structure.¹⁹

We also investigate the relation between leadership structures and financial leverage since Jensen (1993) argues that entrenchment may also be a consequence of CEO status as chairman of the board, irrespective of the ownership level. The CEO controls the flow of information to board meetings and is responsible for the execution of board decisions. Therefore, the consolidation of the CEO and chairman positions makes it easier for managers to implement self-serving decisions that do not maximize shareholders value. In addition, Lipton and Lorsch

¹⁸ A Goldman Sachs study by Wilson and Purushothaman (2003) cites Brazil, Russia, India, and China as important emerging markets that may be among the largest economies by 2050.

¹⁹ We observe that 86 percent of all companies listed on the Bovespa in 2005 had voting and non-voting stocks traded on that exchange. Non-voting shares represented more than 40 percent of the shares traded on that exchange in that year. In Table 1, we can see that the average controlling shareholder in our sample holds 77 percent of voting power but only 54 percent of the cash-flow rights.

(1992) and Jensen (1993) support the idea that a smaller and more independent board of directors is more successful in advising and monitoring corporate decisions. In large boards, directors have more difficulties communicating and might be more susceptible to manipulation by CEOs. Moreover, inside directors are more vulnerable to CEO authority and less likely to exercise good judgment in monitoring management activities. Consequently, we also test whether board size and its independence are related to financial leverage.

Another interesting aspect of the Brazilian stock market is that, in December 2000, Bovespa introduced special market segments to firms that voluntarily subscribe to what the exchange calls “good practices of corporate governance”. Since firms listed on these segments are required to adopt stronger monitoring mechanisms, they allow us to further examine the relation between entrenchment and capital structure.²⁰ Finally, recent empirical evidence has contradicted anecdotal accounts that minority shareholders are more expropriated in companies controlled by families. Specifically, Anderson and Reeb (2003) have documented a positive association between family firms and firm value in the US and Barontini and Caprio (2005) find that family control positively affects firm value and performance in continental Europe. If families expropriate minority shareholders more than other controlling shareholders, we should observe a lower, not higher, value for family-controlled firms.

²⁰ In response to increasing capital markets competition and demand for superior shareholder rights, Bovespa launched in December 2000 three special segments for firms that voluntarily subscribe to what the exchange calls “good practices of corporate governance”. Companies listed on these special segments have, for example, to maintain a minimum free-float equivalent to 25 percent of its capital, report securities trades by managers and controlling shareholders, and improve disclosure of quarterly information. Carvalho and Pennacchi (2005) examine the market reaction to the voluntary migration to Bovespa’s special governance segments and find a decrease in the price differential between voting and non-voting stocks around the listing date. This price differential represents the premium shareholders are willing to pay for voting rights and is considered the lower bound for private benefits of control in many academic studies (e.g. Nenova, 2003). Therefore, a lower price differential is consistent with lower expropriation by controlling shareholders in companies that list on Bovespa’s “good governance” segments.

But in developing stock markets, where higher benefits of control lead to more severe agency conflicts, the benefits of family control for minority shareholders are not so evident. Faccio et al. (2001), for example, suggest that family ownership leads to greater expropriation by insiders in stock markets with poor shareholder rights and limited disclosure. Therefore, we find in Brazil a natural experiment that allow us to examine capital structure in family-controlled firms listed on Bovespa's "good governance" markets, which has stronger shareholder rights and higher disclosure standards.

Our results support the prevalent view in the academic literature that insider entrenchment is negatively related to financial leverage. We find that firms with higher concentration of voting rights have lower leverage ratio while firms with higher concentration of cash-flow rights higher leverage ratio. These results are consistent with the hypothesis that controlling shareholders whose interests are closely aligned to those of minority investors prefer more levered capital structures. The excess of voting power, measured as the difference between the concentration of voting and cash-flow rights, is negatively related to financial leverage. That is, firms with controlling shareholders who hold a large share of voting power without a matching share of cash flow rights have lower levels of debt.

Other results also support the hypothesis of a negative relation between entrenchment and debt. The market leverage ratio, defined as the ratio of book value of debt to market value of assets, is higher for firms with a more independent board while the book leverage ratio, defined as the ratio of book value of debt to book value of assets, is lower for firms in which the CEO is also the chairman of the board. For the firms in our sample, both leverage ratios fall as board size increases from 0 to 4 directors, rise as board size increases from 5 to 9 directors, and fall again, although more slowly, as board size increases beyond 9 directors. Since the Brazilian Corporate

Governance Institute recommends firms to have more than 4 but less than 10 directors, we interpret this nonmonotonic relation between capital structure and board size as consistent with the hypothesis that firms with strong monitoring by the board of directors have more levered capital structures. Family-owned companies listed on Bovespa's "good governance" segments have higher financial leverage, a result that is also consistent with the hypothesis of a negative relation between entrenchment and financial leverage (i.e. firms with more entrenched managers have less levered capital structures).

Although our study supports the view that financing decisions in markets characterized by concentrated ownership and weak investor protection are associated with agency costs, simultaneity issues do not allow us to conclude that there is a causal relation between insider entrenchment and capital structure. That is, we cannot rule out the possibility that controlling shareholders of more levered companies adopt stronger monitoring mechanisms.

The rest of this study is organized as follows: Section 2 briefly presents the relevant literature and hypotheses. Section 3 describes our data and explains the methodology employed. Section 4 discusses the empirical findings. Finally, Section 5 summarizes and concludes.

2.2 Literature review

Two main alternative hypotheses concerning the relation between insider entrenchment and capital structure decisions have been discussed in the finance literature. The first hypothesis predicts that entrenched insiders prefer lower financial leverage because leverage increases the probability of bankruptcy and/or because leverage decreases discretion over the use of free cash-flow and increases external monitoring. Lang (1987) presents a simple theory demonstrating that

managers may choose lower than optimal leverage to reduce the risk of losing their equity investment in the case of bankruptcy. Friend and Lang (1988) provide empirical evidence that the level of debt decreases as managerial ownership increases. The authors also show that this relation is more significant for closely-held firms, a result that is consistent with the argument that undiversified, risk-averse managers use less debt. Agrawal and Nagarajan (1990) provide evidence that all-equity firms have higher ownership concentration by insiders and suggest that all-equity capital structures are aimed at reducing the risk associated with large undiversified investments of personal wealth.

In a seminal paper, Jensen (1986) argues that financial leverage has a monitoring role because the commitment of regular interest payments decreases discretion over the use of free cash-flow. Therefore, firms may be less likely to issue debt in order to avoid external monitoring by debtholders. This argument has been supported by an increasing number of studies that have provided empirical evidence consistent with debt forcing managers towards a more profitable use of corporate resources. Denis and Denis (1993), for example, find that levered recapitalizations are associated with a reduction in investment and significantly increase shareholder wealth. Safieddine and Titman (1999) document significant improvement in operating and stock performance following an increase in financial leverage.

A second hypothesis regarding the relation between entrenchment and capital structure predicts that the threat of a control contest lead entrenched insiders to choose higher financial leverage. According to this alternative hypothesis, debt reduces the likelihood of control changes because it preserves insider voting power. Harris and Raviv (1988) and Stulz (1988) support this hypothesis when argue that managers may influence the outcome of a takeover attempt through capital structure decisions. They suggest that more leveraged structures reduce the probability of

voting out the incumbent since debt does not carry voting rights. Consequently, managers who extract private benefits may use higher than optimal levels of debt to block hostile takeovers even if management replacement provide net benefits to shareholders. Garvey and Hanka (1999) provide empirical evidence that higher likelihood of a control contest motivates insiders to take on debt. They find that firms protected by the “second generation” state anti-takeover laws substantially reduce their use of debt while unprotected firms used debt more aggressively.²¹

More recently, an increasing number of studies have argued that entrenched managers may also favor higher levered capital structures when private benefits of control are high and minority shareholders rights are weak. Shleifer and Wolfenzon (2002), for example, present an equilibrium model in which the amount of equity issued is negatively related to the opportunity to divert profits. The authors argue that, in countries with poor investor protection, entrepreneurs issue less equity as a consequence of higher agency costs. Litov (2005) use the entrenchment index created by Gompers et al. (2003) to test how governance mechanisms affect financing decisions in the US.²² His empirical results are consistent with entrenched managers relying more on debt to meet their financing needs. Using a less restrictive selection procedure than Garvey and Hanka, Litov finds an increase in financial leverage after the enactment of the “second generation” anti-takeover laws and concludes that there is a positive, not negative, relation between insider entrenchment and financial leverage.

²¹ In 1982, the US Supreme Court ruled that the Williams Act of 1968 preempted the “first generation” state anti-takeover laws. Following that ruling, states passed the “second generation” anti-takeover laws, which were ruled enforceable as long as they did not prevent compliance with the Williams Act. The “second generation” laws generally took the form of business combination, fair price, or control share laws.

²² Gompers et al. (2003) created an entrenchment index based on 24 charter provisions that reduce shareholders protection and make the replacement of managers more difficult. The authors found that firms with less entrenched managers have higher valuation but do not make a conclusive claim about a causal relation between their index and market valuation.

2.3 Data and methodology

Our sample consists of 188 non-financial firms listed on São Paulo Stock Exchange (Bovespa) with a trading volume greater than 0.01 percent of the total volume traded in any of the years between 1999 and 2005. The final sample of 1,061 firm-year observations is large enough to represent the firms listed in that exchange since it accounts for more than 80 percent of that stock market capitalization in that period. Data on ownership, leadership structure, and board of directors was obtained from annual reports filed at the Comissão de Valores Mobiliários (CVM) and available through INFOinvest (www.infoinvest.com.br).²³ Data on financial characteristics was obtained from Economática (www.economatica.com.br).

In order to account for changes in financial leverage that might have occurred gradually through time, we use pooled OLS regressions to examine the statistical relation between entrenchment of large shareholders and capital structure. We estimate robust standard errors to account for potential heteroskedasticity. Except for the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. In our regression model, the dependent variable is the book value of debt (defined as long term debt plus debt in current liabilities) divided by the market value of assets (defined as the book value of assets, minus the book value of stockholder's equity and deferred taxes, plus market value of equity) at the end of the fiscal year. Alternatively, we also define the dependent variable as the book value of debt divided by the book value of assets. The independent variables are entrenchment related variables: voting and cash-flow rights concentration, excess voting power, leadership structure, and board characteristics. We also include binary variables to identify firms listed on Bovespa's

²³ CVM is the Brazilian equivalent of the Securities Exchange Commission (SEC) in the US.

“good governance” segments and firms in which the controlling shareholder is a family or an individual investor. A set of control variables is described below.

2.3.1 Voting and cash-flow rights concentration

Morck et al. (1988) argue that insiders with significant voting power can make self-interested decisions to the detriment of minority shareholders with a reduced threat of being disciplined by corporate governance mechanisms. On the other hand, Jensen and Meckling (1976) argue that agency conflicts between insiders and shareholders decrease as insider ownership of cash-flow rights rises. The reasoning here is that higher concentration of cash-flow rights reduces the likelihood of value-destroying decisions by insiders because they pay a larger share of the costs for these decisions. Claessens et al. (2002) and Lins (2003) find that firm value decreases when insiders’ voting rights exceeds their cash-flow rights for samples of East Asian and emerging markets firms respectively. These results are consistent with the hypothesis that superior voting rights give rise to agency problems when they exceed cash flow rights. Claessens et al. (2002) and Volpin (2002) find that firm value increases with cash-flow ownership by insiders in eight East Asian countries and Italy respectively. These results are consistent with the hypothesis that cash flow rights incentives align insiders’ interests with those of outside shareholders.

In our study, voting rights concentration is defined as the number of voting shares owned by the controlling shareholders divided by the total number of outstanding voting shares. Cash-flow rights concentration is defined as the market value of voting plus the market value of non-voting shares owned by a controlling shareholder divided by the market value of the firm²⁴. A

²⁴ We ran all the tests with the alternative definition of cash-flow rights concentration as the number of voting plus non-voting shares owned by the controlling shareholder divided by the total number of outstanding shares. There were no significant changes in the relations presented in the empirical findings section.

controlling shareholder is defined as an individual investor or group of investors who owns the largest percentage of voting shares. We also test the relation between the excess of voting rights, defined in La Porta et al. (2002) and Claessens et al. (2002) as the difference between the concentration of voting and cash-flow rights, and financial leverage. Consistent with the entrenchment hypothesis that self-interested controlling shareholders choose lower levels of leverage, we expect higher concentration of voting rights and excess of voting rights to be associated with lower levels of leverage. On the other hand, consistent with the alignment-of-interest hypothesis that value-maximizing controlling shareholders prefer more levered capital structures, we expect higher concentration of cash-flow rights to be associated with higher levels of leverage.

2.3.2 Leadership structure

Fama and Jensen (1983) argue that concentration of the management and control decisions under the same person reduces the effectiveness of supervision by the board of directors. Jensen (1993) suggests that separation between the CEO and the chairman roles is important to board effectiveness. Consistent with this argument, Goyal and Park (2002) present evidence that CEOs are more likely to be replaced due to poor performance if the CEO is not the chairman of the board. And Silveira et al. (2003) find evidence that the CEO-chairman leadership structure is negatively correlated with firm value in Brazil. If one person holding the CEO and chairman positions results in a less effective monitoring by the board of directors, then this leadership structure is positively related to entrenchment and, consequently, it is expected to be associated with lower levels of debt.

2.3.3 Board size and independence

Boards are “the shareholders’ first line of defense against incompetent managers”, as argued by Weisbach (1988, p. 431). In order to examine Berger et al.’s (1997) evidence of a negative relation between level of monitoring by the board of directors and capital structure, we regress financial leverage on the two board characteristics that have been commonly examined in the finance literature: board size and board independence. Lipton and Lorsch (1992) and Jensen (1993) argue that smaller and more independent boards are more efficient at reducing agency costs and that large boards have more difficulties communicating and are more susceptible to manipulation by insiders. Yermack (1996) and Conyon and Peck (1998) provide empirical evidence that small boards are more effective in monitoring managers when they find that board size are negatively related to shareholders value in the US and five European countries respectively. We define board size as the natural logarithm of the number of directors on the board. Consistent with the hypothesis that board size and entrenchment are positively related, we expect to find that firms with larger boards have less levered capital structures.

Other studies assert that independent directors have a valuable monitoring role in the US. Rosenstein and Wyatt (1990) find that the addition of an outside director increases firm value. Dahya et al. (2006) analyze a sample of companies from 22 different countries and find evidence of a significantly positive relation between board independence and firm value. We define board independence as the percentage of non-executive directors on the board of directors and expect a positive relation between stronger monitoring by a more independent board and leverage.

2.3.4 “Good governance” market segments

In December 2000, the São Paulo Stock Exchange (Bovespa) launched a new premium segment, Novo Mercado (NM), for companies that voluntarily subscribe to higher standards of

corporate governance and disclosure. Companies listed on this premium segment commit to a set of rules created to answer an increasing demand for superior shareholders rights. NM firms are not allowed to issue non-voting shares. They are also required to keep a minimum free-float of 25 percent of the outstanding shares; grant minority shareholders the same rights given to controlling shareholders in the event of control transfer; and have a board of directors with at least 5 directors. Additionally, NM companies commit to higher standards of information disclosure, including the preparation of financial statements according to the International Accounting Standards (IAS) or the US Generally Accepted Accounting Principles (US GAAP).

In order to delist from Novo Mercado, the controlling shareholder need to make a tender offer for all outstanding shares at a price determined by a renowned appraiser chosen by the minority shareholders. Additionally to NM, Bovespa has also created two other segments for companies with little incentive to abdicate from issuing non-voting shares. Nível 2 firms commit to all NM rules but are allowed to issue non-voting stocks. Nível 1 requires only compliance with the minimum free-float requirement and with more stringent disclosure rules, which are common to the three special governance levels. We use a binary variable that equals one if the firm is listed in these “good governance” segments and zero otherwise to test the relation between lower agency costs and financing decisions.

2.3.5 Family owned firms

Anderson and Reeb (2003) and Barontini and Caprio (2005) and other studies provide evidence consistent with lower expropriation of minority shareholders in family-controlled firms. Sraer and Thesmar (2006) find that family-controlled firms outperform widely held firms in the French stock market. Ben-Amar and André (2006) find that returns are higher for acquiring firms controlled by families in Canada. Some possible explanations have been presented for the

empirical findings that family owners minimize agency conflicts and in fact create shareholders value. For example, James (1999) argues that family owners have longer investment horizons because they are concerned with wealth transfer to next generations. And McConaughy et al. (1998) suggest that family owners may have value-maximization interests because of the relative importance of their wealth invested in the firm. .

We use a binary variable that equals one if the firm is controlled by a family or individual and zero otherwise. We also take in account the evidence provided by Faccio et al. (2001) that family control may increase agency costs in less transparent markets. We interact the binary that identifies family-owned firms with the one that identifies firms that list on the “good governance” segments and, therefore, offer lower opportunities for the expropriation of minority shareholders. We expect that the coefficients on the family-owned binary and on the interaction variable support the conclusion that firms with value-maximizing controlling shareholders and lower agency costs are more levered.

2.3.6 Control variables

Since capital structure is also likely to be related to factors other than insider entrenchment, we include a set of independent variables to control for financial characteristics. As a proxy for firm size, we include the natural logarithm of sales at the end of the fiscal year. We control for firm profitability by using the ratio of earnings before interest, taxes, depreciation and amortization (EBITDA) to total book value of assets. The collateral value of assets is measured as the ratio of inventory and net property, plant, and equipment (Inventory + PPE) to assets. As a proxy for investment rate, we use the ratio of capital expenditure (Capex) to assets. We control for non-debt tax effects by using the ratio of depreciation to total assets. We also use the interest coverage ratio, defined as earnings before interest and taxes divided by interest

expense, as a control variable. To control for firm age, we use the natural logarithm of the numbers of years the firm was listed on Bovespa. Finally, we control for industry and year fixed-effects in all regressions.

2.4 Empirical findings

The frequency distribution by year for our sample, shown in Table 1, Panel A, indicates no clustering in any specific year. Panel B shows the frequency distribution by industry. We use Bovespa's classification system, which divides industries into 9 non-financial categories according to the contribution of each industry to the firm's net sales. We observe a large number of firms in our sample classified as Basic Materials and Utilities and a relatively small number of firms in the Oil and Gas and Information Technology sectors. This high (low) representation of industries with assets that are very easily (difficult to be) monitored is to be expected in markets where expropriation by insiders is very common. And the low representation of companies in the Oil and Gas industry is explained by the government monopoly on exploration and distribution.

Table 2 shows summary statistics for entrenchment related and control variables in our sample. Except for the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. Controlling shareholders hold on average 77.32 percent of voting rights, with a median of 83.16 percent. The mean and median for holdings of cash-flow rights are 54.20 and 52.75 percent, respectively, which are much lower than the values found for voting rights concentration. As a clear evidence of the separation between ownership and control that is predominant in the Brazilian stock market, the average difference between voting and cash-flow rights owned by controlling shareholders is 23.12 percent on average (the median is 22.66 percent). The CEO is the chairman of the board in 33.27 percent of the firms in

our sample. Mean and median of board size are 7.21 and 7.00 directors, respectively. The mean (median) percentage of non-executive directors on the board is 84.65 (85.71). In our sample, 12.72 percent of firm-year observations are listed on one of Bovespa's special governance levels and 42.60 percent are family-controlled firms.

The correlation coefficients for dependent and independent variables are presented in Table 3. As we expected, financial leverage is positively correlated with cash-flow rights concentration. Also consistent with what we expected, leverage is negatively correlated with the excess of voting power. Leverage is also negatively correlated with the CEO-chairman status and the market leverage ratio is positively correlated with board independence. It is interesting to notice that the market leverage ratio is positively correlated with board size while book leverage ratio is negatively correlated to the number of directors on the board. We may also see that there is a positive correlation between variables that proxy for strong monitoring and negative correlation between these variables and variables that proxy for entrenchment. For instance, the percentage of non-executive directors in the board is positively correlated with cash-flow rights concentration and negatively correlated with excess of voting rights. And the CEO-chairman status is negatively correlated with cash-flow rights concentration. There is also a positive correlation between entrenchment indicators. For instance, the CEO-chairman status is positively correlated with excess of voting rights. For a more accurate assessment of the impact of strong monitoring and entrenchment variables on capital structure decisions, we use multiple regression analyses.

Table 4 presents the results for the pooled OLS regressions in which the dependent variable is the market leverage ratio. Binary variables to control for year and industry fixed-effects are included in all models. And we estimate robust standard errors to account for potential

heteroskedasticity. The results support the hypothesis that entrenched controlling shareholders are associated with less levered capital structures. Voting power is negatively and significantly related to financial leverage. The relation between insider cash-flow ownership and leverage is always positive and significant. The coefficients for excess of voting rights are significant and negative. The coefficients on the binary variable that identifies a CEO who also act as chairman are negative but not significant. The relation between board size and leverage is never significant while the relation between board independence and leverage is significant and positive. The positive and significant coefficients on the binary variables that identify firms listed on Bovespa's "good governance" market segments and family-controlled firms suggest that leverage is higher in firms where the conflict of interest between insiders and minority shareholders is less of a problem.

We use the book leverage ratio in Table 5 as an alternative definition for the financial leverage variable. Again, binary variables to control for year and industry fixed-effects are included in all models and robust standard errors are estimated to account for heteroskedasticity. The results are very similar to those presented in table 4 and are also consistent with entrenched controlling shareholders choosing less levered capital structures. The coefficients on cash-flow rights show a significant and positive relation between insider ownership and financial leverage. Estimates also point to a negative and significant association between the excess of voting rights and leverage. Different from the regressions in Table 4, the negative coefficients for the CEO-chairman binary variable are significant. We don't find significant coefficient estimates to board size and independence. Finally, firms listed on Bovespa's "good governance" markets and family-controlled firms have significantly higher book leverage ratio.

In Table 6, we can see that the coefficients on the variable defined as the interaction between the family-control and the “good governance” dummies. Family firms that commit to more stringent governance and disclosure rules have higher market and book leverage ratios. When we include the interaction variable, the coefficients on the binary variable that identifies firms listed on the “good governance” segments become not significant while the coefficients on the binary variable that identifies family-owned firms remains positive and significant only when the dependent variable is the market leverage ratio.

The fact that the coefficients on the natural logarithm of board size are never significant leads us to further investigate the relation between this variable and financing decisions. Board size has been constantly associated to management entrenchment in the US. In their survey of the literature on board of directors, Hermalin and Weisbach (2003) conclude that, although there is no concluding evidence that board independence is related to firm performance, empirical findings show that board size is. The rationale behind this relation is that when board size increases, managers become more entrenched because a greater number of directors result in a more symbolic and less participative board. Therefore, our results regarding the relation between entrenchment and capital structure would be considerably strengthened if we find a significant relation between board size and leverage. The Brazilian Corporate Governance Institute (IBCG) recommends in its Code of Best Corporate Governance practices (p. 23) that boards of directors have between 5 and 9 members.²⁵ Bovespa’s “good governance” market segments require firms to have at least 5 directors on their board. Based on the IBCG recommendation and inspired by

²⁵ We tried to contact the Brazilian Corporate Governance Institute to ask the reasons to recommend this range of board size, but there was no answer for our emails. We believe that this choice may be based on Lipton and Lorsch (1992) and Jensen (1993), who argue that boards with more than 7 or 8 directors are less likely to function effectively at the same time that are more vulnerable to CEO manipulation.

Morck et al. (1988) study of insider ownership, we use the following variables to estimate a piecewise linear regression between our leverage ratios and board size:

Board < 5: natural logarithm of board size+1 if board size < 5 directors;
natural logarithm of 5 if board size \geq 5 directors.

Board 5 to 9: 0 if board size < 5 directors;
natural logarithm of (board size – 3) if $5 \leq$ board size \leq 9;
natural logarithm of 6 if board size > 9 directors.

Board > 9: 0 if board size \leq 9 directors;
natural logarithm of (board size – 8) if board size > 9 directors.

We present the results of pooled OLS regressions using the piecewise specifications in Table 7. Once more, all the models include year and industry binary variables and estimate robust standard errors. The control variables are the same presented in Table 6 but for sake of space we do not report their coefficients. For boards with less than 5 directors, the relation between board size and leverage is negative. For boards with 5 or more but fewer than 10 directors, board size is positively related to financial leverage. Finally, for boards with 10 or more directors, board size and leverage are negatively related. In summary, firms with board sizes that favor a more effective monitoring by directors (according to IBCG recommendations) have more levered capital structures. The coefficients on the other variables are always similar to those in the previous tables and are consistent with higher entrenchment being related to less levered capital structures.

2.5 Summary and conclusions

In this paper, we examine the relation between insider entrenchment and capital structure in Brazil, which is the largest stock market in Latin America. High voting power concentration and previous evidence of significant private benefits of control in Brazilian firms make it relevant to study the relation between insider entrenchment and financial leverage in this important developing stock market. Another interesting characteristic that makes this study of significant relevance is the prevalence of Brazilian firms with voting and non-voting stocks, which make it possible to separate the relation of voting power and cash-flow ownership to leverage. Mehran (1992) and Berger et al. (1997) find that CEO ownership is positively related to leverage but argue that this result does not allow us to make a clear prediction about the relation between entrenchment and financial leverage since concentration of voting power insulates insiders against market disciplinary forces (Morck et al., 1988) while concentration of cash-flow ownership encourages value-maximizing decisions (Jensen and Meckling, 1976). When we disentangle the effects of voting power and cash-flow ownership, we find that holdings of voting rights are negatively related while holdings of cash-flow rights are positively related to financial leverage. The excess of voting rights concentration is also negatively related to leverage, that is, the greater the discrepancy between voting power and cash-flow ownership, the lower the debt to asset ratio is.

The market leverage ratio is higher for firms with more independent boards. We also find that the book leverage ratio is lower for companies in which the CEO is also the chairman of the board. Our findings also reveal a nonmonotonic relation between board size and capital structure. The relation between board size and leverage is negative when boards have less than 5 or more than 9 directors and positive when boards have between 5 and 9 directors, which is the range of

board size recommended by the Brazilian Corporate Governance Institute. These results are consistent with the hypothesis that entrenched insiders prefer lower financial leverage in order to reduce the bankruptcy risk associated with financial leverage (Friend and Lang, 1988) and/or to increase their discretion over the use of free cash-flow (Jensen, 1986). Family-controlled firms that commit to higher governance and transparency standards by listing on Bovespa's "good governance" segments are associated with a more levered capital structure.

Our study documents the existence of significant explanatory power of agency factors on capital structure models. Although it supports the view that financing decisions in stock markets with concentrated ownership and weak investor protection are associated with agency costs, we cannot conclude that there is a causal relation between entrenchment and capital structure decisions since, as argued by Jensen and Meckling (1976), ownership structure, control mechanisms, and capital structure are jointly determined.

Chapter Three - The choice of payout on equity

3.1 Introduction

Since Black (1976) first proposed the “dividend puzzle”, there has been a long-standing debate on how taxes affect firms’ payout choices. Black suggests that tax paying investors should generally prefer to own stock in companies that pay no dividends when the tax rate on capital gains is lower than the tax rate on dividend income. In this case, investors have a tax advantage if a firm retains earnings or pay out cash in the form of share repurchases rather than dividends. Even when tax rates on capital gains and dividend income are comparable, there is still a tax disadvantage to dividends because capital gains are only taxed when realized. Despite this, US companies have paid out a significant share of their earnings as dividends for decades. In this paper, we use the Brazilian stock market as a natural experiment in search of further evidence on how taxes affect the choice of payout on equity.

Starting in 1996, Brazilian firms are allowed to make notional interest on equity payments to shareholders as an alternative to dividend distributions. Interest on equity payments are tax deductible but subject to a withholding tax while dividends are not subject to personal income tax. Since the net effect of taxes on interest is lower than that on dividends, there is an obvious incentive for firms to choose the first as the form of earnings distribution.²⁶ Considering that managers have the fiduciary duty to maximize shareholder value and that investors are concerned with after-tax returns, it is surprising that one-third of the companies in our sample had not made cash distributions in the form of interest on equity within the first five years

²⁶ As Frühwirth and Schwaiger (2006) explain, the Brazilian tax regime resembles a dual income tax system in which part of corporate earnings is taxed at a reduced rate. Similar tax systems were adopted by European countries (e.g. Croatia, Austria and Italy), whereas proposals to allow interest on equity deductions have been presented in the UK and Germany.

following the new tax legislation. In fact, over a ten-year period, 23 percent of the companies in our sample never chose interest as the form of payout on equity. This is especially surprising given frequent complaints by the Brazilian business community regarding high and distortionary taxes.²⁷

We first examine the relation between changes in firm characteristics and the choice of payout on equity. We analyze the effects that profitability, non-equity tax shields and payout ratio have on the probability that firms pay out interest on equity (or a combination of interest and dividends) rather than dividends. Consistent with the hypothesis that managers maximize after-tax returns, we expect that the probability of interest rather than dividend payments increases with retained and current earnings because interest payments are tax deductible and corporate tax savings increase with earnings. We also expect that the probability of interest payments decreases with non-equity tax shields such as financial expenses and depreciation because these are also tax deductible and, therefore, make other tax shields less likely. We find evidence that retained and current earnings are positively related while non-equity tax shields are negatively related to the probability of interest payments. These results are consistent with the use of interest on equity to take advantage of the corporate tax shelter provided by its deductibility despite the personal tax advantage of dividend payments.

We also investigate the relation between firm characteristics and the ex-post decision to adopt a new payout form. Changes in non-equity tax-shields are negatively and significantly related to the probability of interest on equity payments after a year when the company made only dividend distributions. That is, the decision to replace the payout policy with a more tax

²⁷ A recent article by Marcello Estevão (2007) in the IMF Survey Magazine praises Brazil's efforts to build robust economics fundamentals that will help that country to reach the conditions for higher sustainable growth. But the author also suggests that fiscal consolidation policies need to rely more on tighter expenditure growth since the tax burden already represents 40 percent of the Brazilian GDP.

advantageous distribution form follows a decrease in interest deductions from non-equity tax shields. But surprisingly, an increase in depreciation expenses is associated with an increase, not decrease, in the probability of interest payments when the last distribution was in the form of dividends. A possible explanation for this result may be that depreciation is directly related to the level of current investments, and higher investment levels compel managers to make a more efficient use of the companies' cash-flow.

Changes in current earnings are negatively related to the probability of dividends distributions after a year when the company made interest on equity payments. This indicates that firms with a decrease in profitability are more likely to change from interest to dividend payouts, that is, from a tax-advantageous to a tax-disadvantageous form of earnings distribution. An increase in payout ratio is related to an increase in the probability of dividend distributions after interest payments. This suggests that, although firms take advantage of the corporate tax shelter provided by interest deductibility, they are likely to change to the payout form with lower taxes at the personal level when there is a higher demand for earnings distribution.

Finally, we measure the market reaction for the announcement of payouts with the lower net tax effect and for the announcement of payouts with the lower personal tax effect. In Brazil, decisions regarding earnings distributions can be made by the board of directors or proposed by the board and voted on by shareholders. While the proposed distribution amount and form are announced in advance of the shareholders meeting, the decision by the board of directors is publicly disclosed only after the end of the board meeting. Consequently, these two different events need to be examined separately since they have different information consequences. We find positive and significant abnormal returns for announcements of interest payments to be voted on by shareholders. We also find positive abnormal returns for the announcement of both

forms of payout voted on by the board of directors. But after we control for payout yield and market value of equity, the choice of payout on equity is significantly related to abnormal returns only in the case of payouts to be voted on by shareholders.

To the best of our knowledge, this is the first systematic study of the factors that influence the payout choice between these two payout forms, which differ only with respect to tax implications.²⁸ The results presented in this paper contribute to a growing literature on corporate payout policies by shedding additional light on a topic that has challenged researchers and practitioners for many years: how do taxes affect payout decisions? Our results support the hypothesis that a company's payout choices are influenced by their tax effects on firm value, but we also find evidence that there is a demand for dividend payouts despite a lower net tax effect of interest on equity payments.

Although this topic has been extensively investigated, the results of previous research are far from allowing us to make any definite conclusions. For example, Long (1978) examines the differences in prices of Citizens Utilities' cash dividend and stock dividend share classes. The author provides evidence that the market had a preference for cash dividends despite the tax advantage of capital gains relative to dividend income. Hubbard and Michaely (1997) reexamine the Citizens Utilities case after the 1986 Tax Reform Act, which reduced the tax advantage of capital gains relative to dividend income. They find that the relative price of the cash dividend shares increased, as predicted, but the change was only temporary. But, more recently, Grullon and Michaely (2002) provided evidence that American firms had been gradually substituting share repurchase for dividends.

²⁸ Klemm (2006) provides a theoretical and empirical assessment of the Brazilian tax reform. He finds evidence of an increase in payout ratios and an increase, not a decrease, in debt-equity ratios. Investment also increased, but the author argues that it is not possible to conclude whether this was a result of the tax cut. He does not examine, however, the determinants of the payout on equity form.

This paper is organized as follows: Section 2 introduces the relevant theory and empirical implications; Section 3 presents our sampling procedure and summary statistics; Section 4 explains the methodology employed and discusses empirical findings; and Section 5 summarizes and concludes.

3.2 Theory and empirical implications

In what is considered to be one of the most important contributions to the theory of corporate finance, Modigliani and Miller (1963) demonstrated that, in general, the value of a company increases with the corporate tax shield provided by debt thanks to the deductibility of interest payments. This result suggests that companies with low financial leverage may be making unnecessary corporate income tax payments that could be higher than the bankruptcy and agency costs associated with debt financing. But the distinction that most tax systems make between personal income from interest-bearing corporate debt and personal income from common shares makes it necessary to consider the tax effects of these two sources of income taxes on shareholders' wealth. Miller (1977) introduces personal taxes to Modigliani and Miller's model, adding a more realistic perspective of the interest payment effect on firm value and computes the gains from interest payments as:

$$V_U + \left[1 - \frac{(1 - \tau_C)(1 - \tau_{PS})}{(1 - \tau_{PB})} \right] B_L, \quad (3.1)$$

where V_U is the value of the firm with no interest payments, τ_C is the corporate tax rate, τ_{PS} is the personal income tax rate on income from holding common shares, τ_{PB} is the personal income tax rate on income from holding debt, and B_L is the value of the levered firm's interest-deductible debt.

Since 1996, the Brazilian tax law has allowed firms to make distributions to shareholders in the form of notional interest on equity payments, which are tax deductible for corporate tax purposes. In order to be tax deductible, the rate of interest on shareholders' equity may not be higher than the Long-Term Interest Rate (TJLP), which is determined by the National Monetary Council as the sum of an inflation target rate plus a risk premium. Additionally, the total amount distributed as interest on equity may not exceed 50 percent of the previous year's retained earnings (RE) or 50 percent of current earnings before taxes (EBT). Within this framework, Lee-Ness and Zani (2001) show that the value of a company with outstanding debt and equity may be expressed as:

$$V_U + \left[1 - \frac{(1 - \tau_C)(1 - \tau_{PS})}{(1 - \tau_{PB})} \right] B_L + \frac{(TJLP)(S)}{k_e} (\tau_C - \tau_{PS*}), \quad (3.2)$$

where τ_{PS*} is the withholding tax rate on income from interest on equity, S is the book value of equity, and $(TJLP)(S)$ is not greater than $(0.50)(EBT)$ or $(0.50)(RE)$.

The term $\frac{(TJLP)(S)}{k_e} (\tau_C - \tau_{PS*})$ from equation (3.2) represents the benefit of a firm paying out interest on equity rather than dividends and shows that the value of the company increases with interest on equity payments deductibility whenever the tax rates satisfy the condition $\tau_C > \tau_{PS*}$. More specifically, dividend payments in Brazil are not subject to personal income taxes while distributions of interest on equity are tax deductible but subject to a withholding tax at the rate of 15 percent. Therefore, if \$1 in stockholders' capital were to be returned as dividends in 2005, for example, it would be subject to taxation at the corporate level (the lowest corporate tax rate in that year was 24 percent, that is, $\tau_C = 24$ percent) but not at the personal level ($\tau_{PS} = 0$ percent) and stockholders would receive the after-tax amount of \$0.76 in dividend

distributions. If instead the payout was in the form of interest on equity payments, the distribution would be subject only to the withholding tax ($\tau_{PS^*} = 15$ percent) and stockholders would receive \$0.85 in interest per dollar paid by the company. This result represents a clear advantage for interest on equity payments and leads us to expect that the previous year's retained earnings and current earnings are positively related to the probability of interest on equity (or a combination of interest and dividend) rather than dividend payments as corporate tax savings increase with earnings.²⁹

In one of the most important extensions of Miller's tax-based model, DeAngelo and Masulis (1980) argue that corporate taxes decrease with non-debt tax shields since these tax shields crowd out the deductibility benefit of interest. That is, the tax advantage from interest payments decreases with non-debt tax shields such as accounting depreciation deductions and investment tax credits. MacKie-Mason (1990) provides empirical evidence that support this argument finding that firms with high tax loss carryforwards are less likely to use interest-bearing debt, a result that is expected since these firms are less likely to use interest deductions. The author also finds that investment tax credits reduce the probability of issuing debt when companies are nearly tax-exhausted and concludes that non-debt tax shields influence corporate financing decisions when they affect marginal tax rates on interest deductions.

Graham et al. (2004) also present evidence consistent with the argument that the incremental tax advantage of interest on debt declines with non-debt tax shields. The authors

²⁹ Corporate income tax in Brazil comprises two components: a federal income tax and a social contribution tax. As of December 31, 2005, the federal income tax and the social contribution were assessed at a tax rate of 25 (a 15 percent basic rate plus 10 percent on taxable income over R\$240,000) and at a contribution rate of 9 percent, both calculated over the adjusted net income. The social contribution rate was 12 percent from May 1, 1999 to January 31, 2000 and 8 percent before that. Interest on equity has been treated as an expense for income tax purposes since 1996 and for income tax and social contribution tax purposes since 1997. Since the lowest income tax rate in 1996 was 15 percent, investors should be indifferent with respect to the choice between interest on equity and dividend payouts for companies with taxable income lower than R\$240,000 in that year. For amounts greater than that and for any positive taxable income between 1997 and 2005, there would be a tax disadvantage for dividend payments.

examine the impact of the tax benefits of employee stock options on capital structure and find that the non-debt tax shields from these benefits affect financing decisions. Kahle and Shastri (2005) further investigate this relation and show that the number of options exercised is negatively related to leverage. In addition, they show that the net amount of equity issued increases while the net amount of debt issued decreases with the tax benefits of employee stock options. In a similar way, the incremental tax advantage of interest on equity declines as expenses are deducted from earnings and, consequently, tax shields become less likely. Therefore, we expect that non-equity tax shields such as depreciation and financial expenses are negatively related to the probability of interest on equity rather than dividend payments.

In addition to factors related to profitability and tax shields, payout ratio is also expected to play an important role in decisions regarding the form of payout. As mentioned above, the interest rate on equity in Brazil is defined by the National Monetary Council and limited to 50 percent of the greater of retained earnings or current earnings. But up to this limit, interest on equity represents a higher after-tax total return to investors who hold claims on the company stocks. Therefore, conventional wisdom leads us to expect that interest payments (or a combination of interest and dividend) are more likely when the payout ratio is higher.

On the other hand, a number of studies have demonstrated that investors and managers may not necessarily prefer the payout form that offers the highest after-tax return. Among these, we find studies that use the two classes of Citizens Utilities Company, which between 1956 and 1989 differed only in the form of their dividend payments, to test the effect of taxes on market valuation. During that period, stockholders of Citizens Utilities received stock dividends if they held Series A stocks and cash dividends if they held Series B stocks. In the first study of this peculiar case, Long (1978) found that investors paid higher prices for the stocks with cash

dividends than for those with stock dividends despite the clear tax advantage of capital gains in relation to dividend income. Hubbard and Michaely (1997) examined the relative valuation of these two series of stocks around the 1986 Tax Reform Act, which reduced the tax advantage of capital gains over dividend income. They find that share prices changed consistently with a tax effect due to the change in legislation, but this effect was only temporary. The authors conclude that the two series of shares did not seem to be consistently priced on an after-tax basis.

More recently, Baker and Wurgler (2004) argue that managers may also choose a payout form that is not necessarily the most tax-advantageous when they cater to investor demand. They find that managers of US firms pay dividends when there is a premium for stocks of dividend payers and do not pay them when the premium is for non-payers. Considering that managers of Brazilian firms may also cater to investor demand and that the catering behavior should be stronger for firms with higher payout ratios, we anticipate a possible negative relation between the payout ratio and the likelihood of interest on equity payment.

3.3 Sampling procedure and summary statistics

3.3.1 Sampling procedure

Our sample consists of non-financial firms listed on the São Paulo Stock Exchange (Bovespa) with a trading volume greater than 0.01 percent of the total volume traded in any of the years between 1996 and 2005. Since the goal of this study is to examine factors that are related to the form of payout on equity, we disregard firm-year observations with no cash distributions. Our final sample consists of 153 firms and 963 firm-year observations. Information regarding payout policies was obtained from annual reports filed at the Comissão de Valores

Mobiliários (CVM) and available through INFOinvest.³⁰ Data on firm characteristics was obtained from Economatica. The variables of main interest in this study are defined as follow:

- a) Current year earnings before interest, taxes, depreciation and amortization (*EBTDA*) divided by sales;
- b) Previous year retained earnings (*RE*) divided by book value of assets;
- c) Non-equity tax shield divided by sales;
- d) Depreciation and amortization divided by sales;
- e) Financial expenses divided by sales;
- f) Cash distributions paid to shareholders divided by earnings (Payout ratio);
- g) Natural logarithm of the book value of total assets;
- h) Market-to-book ratio defined as (total assets + market value of equity – total shareholders' equity)/ total assets.

We include EBITDA and non-equity tax shield as independent variables in our logit regressions in order to assess separately how current profitability and tax shields not related to the tax deductibility of interest on equity payments affect the probability of this form of payout on equity. Inspired by Titman and Wessels (1988), we estimate the non-equity tax shield from operating income (OI), interest on equity payments (IE), observed federal income tax payments and the corporate tax rate using the following equation:

$$OI - IE - \frac{\text{Tax payment}}{\text{Tax rate}}, \quad (3.3)$$

Alternatively, we use the ratios of depreciation and amortization to sales and financial expenses to sales as regressors to examine the relation between different sources of tax deduction and the probability of interest on equity payments. The payout ratio is included to test whether shareholders who demand higher earnings distributions prefer the payout form that gives them a higher total after-tax return or the form that results in a lower personal tax rate. Finally, the

³⁰ CVM is the Brazilian equivalent of the Securities Exchange Commission (SEC) in the US.

natural logarithm of the book value of total assets and the ratio of the market value of assets to book value of assets, used as a proxy for Tobin's q , are used to control for size and growth opportunities respectively.

3.3.2 Summary Statistics

Before we discuss the methodology and results from our logit regressions, we examine the historical trend of interest on equity payments among those companies that made cash distributions to shareholders between 1996, the first year of the new tax system, and 2005. Table 1 shows the frequency distribution of forms of payout on equity during this period. We notice that, although only a very small proportion of firms made interest payments in 1996, this form of earnings distribution has rapidly become more popular among Brazilian firms. The proportion of payers jumped from 11.6 to 37.2 percent in the first two years after the enactment of the new tax law. However, despite the clear tax disadvantage of dividend payments, more than forty percent and almost thirty percent of firms still made dividend distributions in 2000 and 2005 respectively. The high percentage of firms that still preferred this form of payout ten years after the enactment of the law that regulates the notional interest on equity payments may be interpreted as a failure on the part of the companies to reap full tax advantages. This is really surprising in a country where the business community frequently complains about extremely excessive and complex taxes.

We can observe the summary statistics for characteristics of interest and dividend payers in Table 2. On average, firms that pay interest and those that pay dividends differ in terms of current and past profitability, non-equity tax shield, tax shield from financial expenses, payout ratio, size, and growth opportunities. As predicted, interest payers are more profitable and have lower non-equity tax shield and financial expenses to sales ratios. These results suggest that

firms make use of interest on equity to reduce their tax liability although we still find a large number of firms that seem not to take advantage of its tax deductibility. Interest payers also have a higher payout ratio, which is consistent with a higher demand for earnings distribution in the payout form that yield a higher after-tax return to investors holding claims in the company common stocks.

One of the possible interpretations for the larger size of interest payers is that, as argued by Linck et al. (2005), the cost of compliance with higher standards of corporate governance is much smaller for larger firms. Additionally, O'Brien and Bhushan (1990) claim that analysts have greater incentives to follow larger firms because these are the firms in which investors are more interested. The combination of stronger shareholder rights and lower asymmetric information makes expropriation by insiders more difficult. In a recent study, Desai et al. (2005) argue that shareholder expropriation by insiders reduces tax liability because it reduces the amount of taxable earnings. Consequently, companies with less severe conflicts between agent and principals may be more likely to benefit from the tax deductibility of interest on equity payouts because of their lower expropriation and higher tax liability.

Greater growth opportunities for interest on equity payers can also be explained using an agency related argument. Klapper and Love (2004) suggest that investment opportunities create a larger need for outside financing, and growing firms have greater incentives to lower agency costs in order to reduce their cost of capital. Therefore, a higher market-to-book ratio for interest payers is also consistent with the prediction that firms with lower agency costs are more likely to choose the payout form with lower net tax effect. In addition, growing firms might prefer interest payments because pretax returns paid on dividend distributions would have to be higher in order to offset their tax handicap.

The nonparametric Wilcoxon rank-sum test confirms that there are significant differences in the distributions of current and past earnings, non-equity tax shield, financial expenses, payout ratio, size, and investment opportunities between the two groups. In the next session, we use logit regressions to investigate the marginal effects of these independent variables on the likelihood of interest on equity payments rather than dividends distributions.

3.4 Methodology and empirical results

3.4.1 Probability of interest on equity payments

We estimate the probability of interest on equity payments employing a logit regression model, with the dependent variable equal to “1” if the company made interest on equity (or a combination of interest and dividend) payments in fiscal year t and “0” if the company made only dividend payments. Assuming that payout choices follow a first-order autoregressive AR(1) process, we use the generalized estimating equations (GEE) method with robust standard errors to account for clustering at the firm level.³¹ Although the Fama-MacBeth (1973) procedure takes into account the correlation of the residuals across firms and is more frequently used in the finance literature, Petersen (2007) shows that its standard errors are biased if the residuals of a given firm are correlated across years. Recently, Pan (2007) used the GEE method of parameters estimation to examine the relation between insider entrenchment and dividend policy, and Sokolyk (2006) used this same method to investigate the relation between entrenchment and takeover activity in the US.

³¹ GEE was introduced by Liang and Zeger (1986) as an extension of generalized linear models to accommodate the modeling of correlated data. We use the quaslikelihood under the independence model information criterion (QIC) proposed by Pan (2001) to choose between different correlation structures. The results suggest that AR(1) is the best structure since it has the smallest QIC value.

Table 3 presents the estimated logit equations conditional on firm characteristics as measured using the variables described in the previous section. As predicted, the coefficients on current profitability are positive, but they are significant only when we use depreciation and finance expenses instead of non-equity tax shield in the model. Past profitability is always positively and significantly related to the probability of interest on equity payments. All three proxies for tax shields have a negative effect on the likelihood of interest payments, but the coefficients on depreciation to sales ratio are not significant. Firm size is significantly related to the probability of interest payouts, whereas investment opportunities are only significant when we use non-equity tax shield as the proxy for other sources of tax deductions.

In summary, the estimated coefficients support the hypothesis that higher profitability increases the likelihood of interest payments because the tax benefits of interest deductibility increase with earnings. This tax deductibility results in a lower net tax effect for interest relative to dividend distributions. The coefficients also support the hypothesis that higher non-equity tax shields decrease the likelihood of interest payments since other forms of tax shields crowd out the deductibility benefit of interest on equity. The positive and significant coefficients on size may be interpreted as evidence that better governed firms that are more intensively scrutinized by financial analysts choose the most tax-advantageous payout form. Finally, the positive relation between market-to-book ratio and the probability of interest payments is evidence that greater investment opportunities compel firms to choose this payout form because of the higher before-tax returns that they would have pay otherwise.

Next we focus on the relation between changes in firm characteristics and changes in the choice of payout form. In Table 4, we can observe the effect of changes in profitability, non-equity tax shields and payout ratios on the probability of interest payments after a year when

only dividend distributions were made. We control for firm size and growth opportunities in all models. The coefficients on changes in non-equity tax shields are negative and significant, indicating that other sources of tax deductions are substitutes for the tax benefits of interest on equity. Unexpectedly, changes on depreciation are positively, not negatively, related to changes from dividend to interest payments. A possible explanation for this may be that changes in depreciation expenses are directly related to level of current investments, and a company that is investing more needs to make a more efficient use of its cash-flow. Consequently, an increase in depreciation would increase the likelihood of the payout form that results in higher after-tax returns. None of the coefficients on the other change variables are significant.

Table 5 shows that changes from interest to dividend payments are more likely when there is a decrease in current profitability. This result is consistent with the use of interest on equity to take advantage of its tax deductibility despite the personal tax advantage of dividend payments. When current earnings decrease, the tax advantage of interest payments also decreases and dividend payment become more likely. Changes in the payout ratio are positively related to the probability of dividend distributions after a year when interest on equity payments were made. This result contrasts with the results in the univariate tests that interest payers have higher payout ratios. It may be interpreted as evidence that Brazilian companies cater to investor demand for distributions with lower personal taxes and that this catering behavior is stronger for firms with higher payout ratios. None of the coefficients on the other change variables are significant at the conventional significance levels.³²

³² For Tables 4 and 5, we also use the quasilielihood under the independence model information criterion (QIC) to choose between different correlation structures. This time, the results suggest that we model the correlations as independent. But there is no change in signs and significance levels if we fit the model using AR(1) as the correlation structure.

3.4.2 Abnormal returns for interest and dividend payouts

In this section, we use the event study methodology to assess whether the market reaction for interest announcements differs from the one for dividend announcements. In Brazil, earnings distributions are decided either in shareholder meetings or in board meetings. Following Procianoy and Verdi (2004), we divide our analysis of market reaction into announcements of payout to be voted on by shareholders and announcements of payout decisions made by the board of directors. Shareholder meetings and the payout proposals to be voted on by shareholders are announced at least 8 days in advance, whereas board meetings and their decisions should not be anticipated by the market. Therefore, these two events have different information content and need to be examined separately.

For this event study, we use a database called Proventos, which provides information regarding the payout decision dates, ex-right dates, payout amount per share, and payout yield. Proventos is available at Bovespa Stock Exchange's web site, where we also find announcement dates for shareholder meetings beginning in 2003 (fiscal year of 2002). For comparison reasons, we also limit our study of decisions by the board for the fiscal years between 2002 and 2005.

Event study methodologies are extensively used for frequently traded stocks in the US. However, these same methodologies may be misspecified when dealing with data from exchanges where stocks do not trade every day. To deal with problems that typically result from the presence of thin trading, we follow Maynes and Rumsey's (1993) trade-to-trade approach, which expresses the market model for n_t unobserved one-day returns as:

$$R_{j,n_t} = \alpha_j n_t + \beta_j R_{m,n_t} + \sum_{s=0}^{n_t-1} \varepsilon_{j,t-s} \quad (3.4)$$

where R_{j,n_t} is the trade-to-trade return on security j for day t . The parameters estimates $\hat{\alpha}_j$ and $\hat{\beta}_j$ are taken from Ordinary Least Square (OLS) estimation using returns between days -250 and -11. And R_{m,n_t} is the trade-to-trade return on the market index calculated to match the return period of stock j on day t . We use Ibovespa, which is the most traditional index of stocks traded on Bovespa, as our market index and include only events for which stock j is traded on the three days in the event window. The abnormal return is given by:

$$A_{j,n_t} = R_{j,n_t} - \hat{\alpha}_j n_t - \hat{\beta}_j R_{m,n_t} \quad (3.5)$$

Since the error terms in equation (3.4) are heteroskedastic with variance equal to $n_t \sigma_j^2$, we divide the data by the square root of n_t for estimating purposes. Taking into account cross-sectional dependence present in the data, we follow Brown and Warner (1980, 1985) and test for the significance of the abnormal return over the three-day interval, for example, using the time series of portfolio returns as follows:

$$\frac{\sum_{t=-1}^1 \overline{A'_t}}{\sqrt{3 \sum_{t=-250}^{-11} (\overline{A'_t})^2 / 239}} \quad (3.6)$$

where

$$\overline{A'_t} = \frac{1}{J_t} \sum_{j=1}^{J_t} \frac{A_{jt}}{\sqrt{n_t}} \quad (3.7)$$

The abnormal returns for one, two, and three-day event windows are presented in Table 6. In Panel A, event date 0 is the announcement date of a distribution to be voted on by shareholders. Since the net effect of taxes on interest on equity is lower than that on dividends and investors maximize after-tax returns, we expect to observe higher abnormal returns for

interest on equity payouts. Announcements of interest on equity payments are related to positive and significant abnormal returns, as we expected, for the event windows [0] and [0, +1]. In Panel B, event date 0 is the announcement of payouts voted on by the board of directors. Abnormal returns are positive and significant for both interest and dividend distributions. But contrary to what we expected and to the results presented in Panel A, abnormal returns for interest payments are lower than that for dividend distributions in all event periods.

The explanation for the counter-intuitive results that we find for distributions voted on by directors can be associated with the fact that stocks are usually traded ex-right after few days following the board meeting. Several papers have used taxes, transactions costs, and market microstructure or the interaction of these factors to explain higher than expected returns around the ex-right date (e.g. Elton and Gruber, 1970; Kalay, 1982; and Frank and Jagannathan, 1998). To test whether the results presented in Panel B can be explained by the ex-right day premium, we calculate abnormal returns around payout decisions that define the last cum-day at least five trading days after the board meeting. The results are presented in Panel C and suggest that higher abnormal returns for dividend payments cannot be attributed to the ex-right day effect.

Any comparisons between returns for interest and dividend payers should also take into consideration other factors such as payout yield and market value of equity. Therefore, in Table 7 we proceed with a multivariate analysis to estimate the relation between abnormal returns and the choice of payout on equity after controlling for these variables. For these estimations, we calculate cumulative abnormal returns individually for each firm-event and use OLS estimations with clustered standard errors. Panel A presents evidence that the form of payout has a significant impact on the two- and three-day cumulative abnormal returns for payout announcements to be voted on by shareholders. In this case, the market receives news of interest

on equity payments with higher than expected returns. Panels B shows that the form of payout does not significantly affect abnormal returns for decisions made by the board of directors. And, finally, Panel C confirms that the payout form is not significantly related to cumulative abnormal returns even when we consider the effect of the ex-right day premium by including in our regression only payout decisions that define the last cum-day at least five trading days after the board meeting.

3.5 Summary and conclusion

Since 1996, Brazilian companies have been allowed to deduct notional interest on equity from taxable earnings. The equity interest rate is based on the Long-Term Interest Rate (TJLP) determined by the National Monetary Council and, in order to be tax deductible, interest payments may not be higher than 50 percent of the greater of retained or current earnings. Since the net effect of taxes on interest on equity is lower than that on dividends, the Brazilian taxation regime provides a natural experiment that allows us to further examine the effect of taxes on the choice of payout on equity.

We find evidence that past and current profitability are positively related to the probability of interest on equity (or a combination of interest and dividend) rather than dividend payments while non-equity tax shields and financial expenses are negatively related. Changes in non-equity tax shields are negatively related to the probability that an interest payment will follow a year when only dividend distributions were made. Also, changes in current profitability are negatively related to the probability of dividend distributions after a year when interest payments were made. These results are consistent with the hypothesis that Brazilian firms make

interest on equity payments to take advantage of the corporate tax shelter provided by its deductibility despite the personal tax advantage of dividend payments.

Although we expected that higher payout ratios would be positively related to interest payments because of their lower net tax effect, we find that changes in the payout ratio are positively related to the probability of a dividend distribution by firms that made interest payments in the previous year. This result is consistent with evidence presented by Baker and Wurgler (2004) that firms may choose the payout form with lower after-tax total return when there is a demand for it.

We find positive abnormal returns for the announcement of interest on equity payments to be voted on by shareholders and this relation is robust after we control for payout yield and company size. On the other hand, we find that payout decisions made by the board of directors result in positive abnormal returns for both interest payments and dividend distributions, but this relation is not significant in the multivariate analysis.

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Table 1.1
Frequency Distribution

Our sample consists of 178 firms and 741 firm-year observations with the most liquid stocks traded on BOVESPA between 2001 and 2005. This represents 81 percent of the stock market capitalization in that sample period. Panel A shows the distribution of firms by year. Panel B shows the distribution of firms by industry as defined by Bovespa, which classifies firms according to the contribution of each industry to net sales.

Panel A: Firms by year		
Year	No.	(%)
2001	157	21.19
2002	151	20.38
2003	148	19.97
2004	145	19.57
2005	140	18.89
TOTAL	741	100.00

Panel B: Firms by industry		
Industry	No.	(%)
Oil and Gas	5	2.81
Basic Materials	46	25.84
Capital Goods	21	11.80
Construction and Transportation	14	7.87
Consumer Non Cyclical	17	9.55
Consumer Cyclical	20	11.24
Information Technology	3	1.69
Telecommunications	21	11.80
Utilities	31	17.42
TOTAL	178	100.00

Table 1.2
Descriptive Statistics

Tobin's q is defined as ((book value of assets + market value of equity – total shareholders' equity – deferred taxes)/ book value of assets). ROA is the ratio of earnings before interest and taxes to book value of assets. NM6 is a composite index calculated by adding the following binary variables: (A) *Cash-Flow to Voting Rights*: a binary variable that equals one if the ratio of cash-flow rights to voting rights owned by the controlling shareholder is greater than or equal to 1 and zero otherwise. (B) *Minimum Free-Float*: a binary variable that equals one if the percentage of outstanding shares owned by the controlling shareholder and related entities is less than 75 percent and zero otherwise. (C) *Superior Tag-Along Rights*: a binary variable that equals one if the company's bylaws grant minority shareholders tag-along rights beyond the legal requirement and zero otherwise. (D) *Minimum Board Size*: a binary variable that equals one if the board has 5 or more directors and zero otherwise (E) *Term of Directors*: a binary variable that equals one if directors are elected for concurrent, 1- or 2-year terms and zero otherwise. (F) *Superior Disclosure*: a binary variable that equals one if the company prepares financial statements according to IAS or US GAAP (and makes the statement available to all shareholders) and zero otherwise. Except for NM6 and the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers.

Variable	Mean	Median	Std Dev	1 Pct	99 Pct	N
Tobin's q	1.1446	0.9946	0.6014	0.3997	6.1863	741
EBIT to assets	0.1036	0.0983	0.0832	-0.1891	0.3427	741
NM6 index	2.52	2.00	1.09	0.00	6.00	741
Cash-Flow to Voting Rights	0.1700	0.00	0.3759	0.00	1.00	741
Minimum Free-Float	0.7233	1.00	0.4476	0.00	1.00	741
Superior Tag-Along Rights	0.1255	0.00	0.3315	0.00	1.00	741
Minimum Board Size	0.8475	1.00	0.3597	0.00	1.00	741
Term of Directors	0.4642	0.00	0.4991	0.00	1.00	741
Superior Disclosure	0.1889	0.00	0.3917	0.00	1.00	741
Foreign controlling shareholder	0.2848	0.00	0.4516	0.00	1.00	741
Family controlling shareholder	0.4022	0.00	0.4907	0.00	1.00	741
Institutional controlling shareholder	0.0540	0.00	0.2261	0.00	1.00	741
Assets ('000)	4,913,463	1,647,885	8,820,592	19,431	56,652,644	741
Sales growth	0.1958	0.1655	0.2433	-0.4265	1.4585	741
(Inventory + PPE) to assets	0.4062	0.4070	0.2035	0.0004	0.8986	741
Capex to assets	0.1924	0.1714	0.1156	0.0007	0.7658	741
Listing years	13.52	11.00	10.08	1.00	56.00	741

Table 1.3
Firms meeting Novo Mercado rules

Panel A provides the percentage (number) of firms in our sample that met Novo Mercado regulations over the years in our sample period. For example, 2.86 percent of the sample (4 firms) met 6 governance rules in 2005. Panel B presents the percentage (number) of firms in our sample that adopted each of the six individual corporate governance practices between 2001 and 2005. For example, 23.57 percent of the sample (33 firms) reconciled its statements according to IAS or GAAP in 2005 and made the statements available to all shareholders.

Panel A: NM6 index						
0	1	2	3	4	5	6
2001						
1.91 (3)	17.83 (28)	43.31 (68)	31.85 (50)	4.46 (7)	0.64 (1)	0.00 (0)
2002						
1.99 (3)	15.23 (23)	37.75 (57)	33.77 (51)	7.95 (12)	3.31 (5)	0.00 (0)
2003						
1.35 (2)	14.19 (21)	37.84 (56)	33.78 (50)	8.78 (13)	2.70 (4)	1.35 (2)
2004						
2.07 (3)	7.59 (11)	38.62 (56)	35.17 (51)	12.41 (18)	2.76 (4)	1.38 (2)
2005						
2.14 (3)	6.43 (9)	34.29 (48)	29.29 (41)	12.14 (17)	12.86 (18)	2.86 (4)

Panel B: Index components					
	2001	2002	2003	2004	2005
Cash-Flow to Voting Rights	10.83 (17)	13.25 (20)	14.86 (22)	21.38 (31)	25.71 (36)
Minimum Free-Float	73.89 (116)	71.52 (108)	70.95 (105)	70.34 (102)	75.00 (105)
Superior Tag-Along Rights	0.00 (0)	10.60 (16)	11.49 (17)	15.86 (23)	26.43 (37)
Minimum Board Size	80.89 (127)	82.12 (124)	86.49 (128)	86.90 (126)	87.86 (123)
Term of Directors	41.40 (65)	45.03 (68)	44.59 (66)	47.59 (69)	54.29 (76)
Superior Disclosure	14.01 (22)	17.88 (27)	19.59 (29)	20.00 (29)	23.57 (33)

Table 1.4
Correlation coefficient matrix

This table shows the pair-wise correlation matrix for the following variables used in our study: (1) Tobin's q ratio, (2) EBIT to assets, (3) NM6 index, (4) Cash-Flow to Voting Rights, (5) Minimum Free Float, (6) Superior Tag-Along Rights, (7) Minimum Board Size, (8) Term of Directors, and (9) Superior Disclosure.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	1								
(2)	0.4413 (0.00)	1							
(3)	0.2612 (0.00)	0.1895 (0.00)	1						
(4)	0.1825 (0.00)	0.0078 (0.83)	0.2795 (0.00)	1					
(5)	-0.0078 (0.83)	0.0531 (0.15)	0.4539 (0.00)	-0.3224 (0.00)	1				
(6)	0.2170 (0.00)	0.0628 (0.09)	0.5236 (0.00)	0.1105 (0.00)	0.0886 (0.02)	1			
(7)	0.0520 (0.16)	0.1153 (0.00)	0.4377 (0.00)	0.0321 (0.38)	0.0901 (0.01)	0.1380 (0.00)	1		
(8)	0.1075 (0.00)	0.1682 (0.00)	0.5186 (0.00)	0.0685 (0.06)	0.0373 (0.31)	0.1619 (0.00)	-0.0492 (0.18)	1	
(9)	0.1906 (0.00)	0.0846 (0.02)	0.4831 (0.00)	-0.0258 (0.48)	0.2214 (0.00)	0.0669 (0.07)	0.1088 (0.00)	-0.0345 (0.35)	1

Table 1.5
Pooled OLS Regressions

In models (1) and (2) the dependent variable is Tobin's q. In models (3) and (4) the dependent variable is ROA. All regressions include industry and year dummies and estimate clustered (Rogers) standard errors. Except for NM6 and the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. P-values are shown in parentheses.

	Tobin's q		ROA	
	(1)	(2)	(3)	(4)
intercept	0.3796 (0.23)	0.9116 (0.01)	0.0075 (0.89)	-0.0162 (0.78)
NM6 index	0.0577 (0.03)		0.0096 (0.02)	
Cash-Flow to Voting Rights		0.1276 (0.14)		-0.0013 (0.90)
Minimum Free-Float		-0.0230 (0.69)		0.0071 (0.45)
Superior Tag-Along Rights		0.1568 (0.06)		0.0064 (0.58)
Minimum Board Size		0.0096 (0.87)		0.0187 (0.16)
Term of Directors		-0.0512 (0.31)		0.0194 (0.06)
Superior Disclosure		0.2187 (0.03)		0.0021 (0.86)
Foreign controlling shareholder	0.0958 (0.18)	0.0721 (0.32)	0.0389 (0.00)	0.0409 (0.00)
Family controlling shareholder	-0.0337 (0.62)	-0.0383 (0.56)	-0.0045 (0.69)	-0.0051 (0.67)
Institutional controlling shareholder	-0.0598 (0.69)	-0.1080 (0.44)	0.0111 (0.61)	0.0144 (0.51)
Natural log (assets)	0.0272 (0.16)	0.0009 (0.97)	0.0030 (0.41)	0.0041 (0.28)
Sales growth	0.3095 (0.00)	0.3175 (0.00)	0.0579 (0.00)	0.0575 (0.00)
(Inventory + PPE) to assets	-0.4507 (0.00)	-0.4398 (0.00)	0.0269 (0.29)	0.0248 (0.33)
Capex to assets ratio	0.9635 (0.00)	0.9784 (0.00)	0.1474 (0.00)	0.1407 (0.00)
Lag(EBIT to assets ratio)	2.3024 (0.00)	2.3595 (0.00)		
Natural log (listing years)	-0.1407 (0.03)	-0.1353 (0.03)	0.0016 (0.84)	0.0014 (0.86)
total sample	741	741	741	741
Adjusted R-square	0.3692	0.3824	0.2731	0.2740

Table 1.6

Pooled OLS Regressions with Individual Governance Practices

In Panel A, the dependent variable is Tobin's q, whereas in Panel B the dependent variable is ROA. All models contain the control variables reported in Table 5, including industry and year dummies, but we suppress the coefficients for sake of brevity. P-values are shown in parentheses.

Panel A: The dependent variable is Tobin's q						
	(1)	(2)	(3)	(4)	(5)	(6)
Cash-Flow to Voting Rights	0.1352 (0.10)					
Minimum Free-Float		0.0028 (0.96)				
Superior Tag-Along Rights			0.1757 (0.04)			
Minimum Board Size				0.0250 (0.70)		
Term of Directors					-0.0213 (0.69)	
Superior Disclosure						0.2108 (0.03)
total sample	741	741	741	741	741	741
Adjusted R-square	0.3670	0.3608	0.3686	0.3610	0.3610	0.3727

Panel B: The dependent variable is ROA						
	(1)	(2)	(3)	(4)	(5)	(6)
Cash-Flow to Voting Rights	-0.0013 (0.90)					
Minimum Free-Float		0.0093 (0.32)				
Superior Tag-Along Rights			0.0120 (0.31)			
Minimum Board Size				0.0177 (0.19)		
Term of Directors					0.0182 (0.07)	
Superior Disclosure						0.0071 (0.54)
total sample	741	741	741	741	741	741
Adjusted R-square	0.2610	0.2632	0.2628	0.2658	0.2703	0.2616

Table 1.7
Two-Stage Least Squares Regressions

In the first stage, we use an exogenous instrument and control variables to predict NM6. In the second stage, we regress our dependent variable on the predicted NM6 and control variables. All models include industry and year dummies and estimate clustered (Rogers) standard errors. Except for NM6, all the variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. P-values are shown in parentheses.

	Tobin's q		ROA	
	1 st Stage	2 nd Stage	1 st Stage	2 nd Stage
Dependent Variable	NM6	Tobin's q	NM6	Tobin's q
intercept	0.1062 (0.91)	0.3620 (0.33)	0.1010 (0.91)	0.0082 (0.88)
Predicted value for NM6 index		0.2242 (0.10)		0.0035 (0.90)
Foreign controlling shareholder	-0.4918 (0.01)	0.1777 (0.06)	-0.4478 (0.02)	0.0362 (0.03)
Family controlling shareholder	0.1065 (0.59)	-0.0515 (0.51)	0.1107 (0.58)	-0.0038 (0.75)
Institutional controlling shareholder	0.0019 (1.00)	-0.0601 (0.74)	0.0429 (0.89)	0.0114 (0.62)
Natural log (assets)	0.1636 (0.01)		0.1724 (0.00)	0.0041 (0.47)
Sales growth	-0.0598 (0.82)	0.3195 (0.00)	-0.0478 (0.87)	0.0576 (0.00)
(Inventory + PPE) to assets	0.1224 (0.80)	-0.4711 (0.01)	0.1587 (0.75)	0.0279 (0.29)
Capex to assets ratio	0.9148 (0.04)	0.8112 (0.01)	1.1350 (0.02)	0.1542 (0.00)
Lag(EBIT to assets ratio)	1.5340 (0.06)	2.0470 (0.00)		
Natural log (listing years)	-0.2670 (0.01)	-0.0962 (0.22)	-0.2690 (0.01)	
total sample	741	741	741	741

Table 1.8
Fixed Effects Regressions

This table shows the estimates for panel data fixed effects regressions with robust standard errors. Except for NM6, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. P-values are shown in parentheses.

	Tobin's q	ROA
NM6 index	0.0835 (0.05)	0.0020 (0.62)
Foreign controlling shareholder	-0.0514 (0.62)	0.0341 (0.04)
Family controlling shareholder	0.0416 (0.73)	0.1036 (0.00)
Institutional controlling shareholder	-0.0231 (0.90)	0.0509 (0.03)
Natural log (assets)		-0.0530 (0.00)
Sales growth	0.1825 (0.03)	0.0734 (0.00)
(Inventory + PPE) to assets	0.6433 (0.05)	-0.0976 (0.03)
Capex to assets ratio	0.5263 (0.00)	0.0497 (0.06)
Lag(EBIT to assets ratio)	0.6506 (0.10)	
Natural log (listing years)	0.0739 (0.66)	

Total sample	741	741
P > F (test for joint significance)	(0.00)	(0.00)
P > F (test that all firm fixed effects are jointly '0')	(0.00)	(0.00)
Adjusted R-square	0.7741	0.7077

Table 1.9**Stock performance and Novo Mercado**

Panel A presents the results of estimating the four-factor model of Carhart (1997). Panel B also includes an illiquidity factor (ILLIQ) mimicking portfolios created based on Amihud's (2002) illiquidity measure. The first row (high NM6) presents the results when we estimate the model with the dependent variable equal to the monthly risk-premium for a value-weighted portfolio of firms with NM6 greater than the median. The second row (low NM6) presents the results when we estimate the model with the dependent variable equal to the monthly risk-premium for a value-weighted portfolio of firms with NM6 lower than or equal to the median. The third row (high minus low) presents the results when we estimate the model with the dependent variable equal to the difference between the monthly value-weighted return on the high NM6 portfolio and the monthly value-weighted return on the low NM6 portfolio. P-values are shown in parentheses.

Panel A: Four-factor model of Carhart (1997)								
	Intercept	RMRF	SMB	HML	MOM	R-square	Adjusted R-square	
High NM6	0.0025 (0.36)	0.7795 (0.00)	-0.1820 (0.02)	-0.1589 (0.01)	0.1188 (0.00)	0.9146	0.9084	
Low NM6	-0.0062 (0.10)	0.8118 (0.00)	0.1550 (0.13)	0.3867 (0.00)	0.0096 (0.86)	0.8634	0.8535	
High - Low	0.0087 (0.05)	-0.0322 (0.67)	-0.3370 (0.01)	-0.5456 (0.00)	0.1091 (0.09)	0.4240	0.3821	
Panel B: Model including an illiquidity factor								
	Intercept	RMRF	SMB	HML	MOM	ILLIQ	R-square	Adjusted R-square
High NM6	0.0024 (0.39)	0.7808 (0.00)	-0.1334 (0.22)	-0.1333 (0.08)	0.1233 (0.00)	-0.0442 (0.54)	0.9152	0.9074
Low NM6	-0.0061 (0.11)	0.8115 (0.00)	0.1457 (0.32)	0.3818 (0.00)	0.0087 (0.88)	0.0085 (0.93)	0.8635	0.8508
High - Low	0.0085 (0.06)	-0.0307 (0.69)	-0.2791 (0.11)	-0.5152 (0.00)	0.1146 (0.08)	-0.0527 (0.65)	0.4263	0.3732

Table 2.1
Frequency Distribution

The sample consists of 188 firms (1,061 firm-year observations) with a trading volume greater than 0.01 percent of the total volume traded in any of the years between 1999 and 2005. Industry refers to one of 9 non-financial categories defined by the São Paulo Stock Exchange (Bovespa).

Panel A: Distribution by year		
Year	No. of firms	% of sample
1999	141	13.29
2000	143	13.48
2001	155	14.61
2002	154	14.51
2003	156	14.70
2004	160	15.08
2005	152	14.33
N	1,061	100.00

Panel B: Distribution by industry		
Industry	No. of firms	% of sample
Oil and Gas	5	2.66
Basic Materials	46	24.47
Capital Goods	22	11.70
Construction and Transportation	16	8.51
Consumer Non Cyclical	18	9.57
Consumer Cyclical	26	13.83
Information Technology	3	1.60
Telecommunications	21	11.17
Utilities	31	16.49
Total	188	100.00

Table 2.2
Descriptive Statistics

Market leverage ratio is defined as book value of debt divided by market value of assets. Book leverage ratio is defined as book value of debt divided by book value of assets. Voting rights mean the percentage of voting shares owned by the controlling shareholder. Cash-flow rights mean the percentage value of shares owned by the controlling shareholder. Excess of voting rights is the difference between voting and cash-flow rights. Chairman-CEO refers to a binary variable equal to “1” if the CEO is also the chairman of the board and “0” otherwise. Size of the board is the natural log of the number of directors on the board. Board independence refers to the percentage of non-executive directors on the board. BOVESPA governance levels refer to a binary variable equal to “1” if the firm is listed on one of BOVESPA’s special governance levels and “0” otherwise. Family-controlled firms refer to a binary variable equal to “1” if the controlling shareholder is a family group or an individual investor and “0” otherwise. Except for the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers.

Variable	Mean	Median	Std Dev	Pct 1	Pct 99	N
Market leverage ratio	0.2851	0.2750	0.1829	0.0116	0.7565	1,061
Book leverage ratio	0.3096	0.2879	0.2486	0.0086	1.8559	1,061
Voting rights	0.7732	0.8316	0.2056	0.1200	1.0000	1,061
Cash-flow rights	0.5420	0.5275	0.2460	0.1044	1.0000	1,061
Excess of voting rights	0.2312	0.2266	0.1876	-0.0341	0.6455	1,061
Chairman-CEO	0.3327	0.0000	0.4714	0.0000	1.0000	1,061
Board Size	7.21	7.00	2.95	3.00	16.00	1,061
Board Independence	0.8465	0.8571	0.1342	0.5000	1.0000	1,061
BOVESPA Gov. Levels	0.1272	0.0000	0.3334	0.0000	1.0000	1,061
Family-controlled	0.4260	0.0000	0.4947	0.0000	1.0000	1,061
Sales ('000)	2,481,086	983,860	3,922,459	30,220	19,912,647	1,061
EBITDA /assets	0.1423	0.1399	0.0858	-0.0092	0.3928	1,061
Inventory & PPE /assets	0.5145	0.5232	0.1794	0.1286	0.9054	1,061
CAPEX /assets	0.1913	0.1651	0.1214	0.0379	0.7526	1,061
Depreciation /assets	0.0477	0.0368	0.0333	0.0046	0.1588	1,061
Interest Coverage	2.0003	1.0915	3.4616	-7.0676	18.8665	1,061
Years of listing	12.90	11.00	9.99	1.00	55.00	1,061

Table 2.3
Correlation Coefficient Matrix

This table presents the correlation coefficients for (1) Market leverage ratio, (2) Book leverage ratio, (3) Voting rights, (4) Cash-flow rights, (5) Excess of voting rights, (6) Chairman-CEO, (7) Natural log of board size, and (8) Board independence. P-value is shown between parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	1							
(2)	0.6959 (0.00)	1						
(3)	0.0289 (0.35)	0.0365 (0.23)	1					
(4)	0.0674 (0.03)	0.0683 (0.03)	0.6638 (0.00)	1				
(5)	-0.0585 (0.06)	-0.0505 (0.10)	0.2228 (0.00)	-0.5809 (0.00)	1			
(6)	-0.0618 (0.04)	-0.0757 (0.01)	0.0217 (0.48)	-0.1196 (0.00)	0.1795 (0.00)	1		
(7)	0.0552 (0.07)	-0.0585 (0.06)	-0.0433 (0.16)	-0.0125 (0.68)	-0.0307 (0.32)	-0.3019 (0.00)	1	
(8)	0.1021 (0.00)	0.0458 (0.14)	0.0058 (0.85)	0.0823 (0.01)	-0.1008 (0.00)	-0.5368 (0.00)	0.3695 (0.00)	1

Table 2.4**Market leverage ratio and entrenchment**

The dependent variable in these pooled OLS regressions is the book value of debt divided by the market value of assets. The sample period is between 1999 and 2005. Binary variables to control for year and industry fixed-effects are included in all models. Except for the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. We estimate robust standard errors to account for potential heteroskedasticity. P-values are shown in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
intercept	0.2277 (0.03)	0.2559 (0.02)	0.1475 (0.18)	0.2280 (0.02)	0.2593 (0.01)	0.1486 (0.17)
Voting Rights	-0.0722 (0.04)	-0.0784 (0.03)	-0.1147 (0.00)			
Cash-flow Rights	0.0721 (0.02)	0.0862 (0.01)	0.1180 (0.00)			
Excess of Voting Rights				-0.0738 (0.01)	-0.0855 (0.00)	-0.1193 (0.00)
Chairman-CEO	-0.0066 (0.62)	-0.0077 (0.57)	-0.0166 (0.21)	-0.0066 (0.62)	-0.0076 (0.57)	-0.0165 (0.21)
Ln (board size)	0.0186 (0.20)	0.0183 (0.20)	0.0167 (0.24)	0.0187 (0.19)	0.0179 (0.21)	0.0166 (0.24)
Board Independence	0.1122 (0.02)	0.1064 (0.03)	0.1471 (0.00)	0.1122 (0.02)	0.1066 (0.03)	0.1474 (0.00)
BOVESPA Governance Level		0.0334 (0.03)	0.0160 (0.31)		0.0328 (0.04)	0.0158 (0.31)
Family firms			0.0614 (0.00)			0.0617 (0.00)
Ln (sales)	-0.0024 (0.62)	-0.0045 (0.37)	-0.0007 (0.88)	-0.0024 (0.62)	-0.0044 (0.38)	-0.0007 (0.89)
EBITDA /TA	-0.3864 (0.00)	-0.3874 (0.00)	-0.3755 (0.00)	-0.3867 (0.00)	-0.3897 (0.00)	-0.3767 (0.00)
Inventory + PPE / TA	0.1085 (0.01)	0.1109 (0.00)	0.0981 (0.01)	0.1085 (0.01)	0.1103 (0.00)	0.0978 (0.01)
Capex /TA	0.0441 (0.39)	0.0379 (0.46)	0.0412 (0.41)	0.0438 (0.39)	0.0388 (0.45)	0.0414 (0.40)
Depreciation /TA	-0.0029 (0.99)	-0.0422 (0.88)	-0.0454 (0.88)	-0.0015 (1.00)	-0.0283 (0.92)	-0.0380 (0.89)
Interest Coverage	-0.0135 (0.00)	-0.0137 (0.00)	-0.0137 (0.00)	-0.0135 (0.00)	-0.0136 (0.00)	-0.0136 (0.00)
Ln (years of listing)	-0.0084 (0.24)	-0.0061 (0.41)	-0.0076 (0.30)	-0.0083 (0.25)	-0.0061 (0.41)	-0.0076 (0.30)
total sample	1,061	1,061	1,061	1,061	1,061	1,061
R-squared	0.2510	0.2537	0.2687	0.2512	0.2538	0.2690
Adjusted R-square	0.2322	0.2342	0.2488	0.2331	0.2351	0.2499

Table 2.5**Book leverage ratio and entrenchment**

The dependent variable in these pooled OLS regressions is the book value of debt divided by the book value of assets. The sample period is between 1999 and 2005. Binary variables to control for year and industry fixed-effects are included in all models. Except for the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. We estimate robust standard errors to account for potential heteroskedasticity. P-values are shown in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
intercept	0.5207 (0.01)	0.5634 (0.00)	0.4891 (0.02)	0.5283 (0.01)	0.5739 (0.00)	0.4974 (0.02)
Voting Rights	-0.0457 (0.32)	-0.0552 (0.25)	-0.0801 (0.08)			
Cash-flow Rights	0.0618 (0.14)	0.0832 (0.07)	0.1050 (0.02)			
Excess of Voting Rights				-0.0581 (0.14)	-0.0751 (0.08)	-0.0985 (0.02)
Chairman-CEO	-0.0467 (0.03)	-0.0483 (0.02)	-0.0544 (0.01)	-0.0466 (0.03)	-0.0481 (0.02)	-0.0543 (0.01)
Ln (board size)	-0.0043 (0.80)	-0.0048 (0.78)	-0.0059 (0.73)	-0.0052 (0.76)	-0.0063 (0.71)	-0.0072 (0.67)
Board Independence	0.0017 (0.98)	-0.0071 (0.92)	0.0208 (0.79)	0.0019 (0.98)	-0.0064 (0.93)	0.0218 (0.78)
BOVESPA Governance Level		0.0505 (0.01)	0.0385 (0.08)		0.0478 (0.02)	0.0360 (0.10)
Family firms			0.0421 (0.06)			0.0427 (0.06)
Ln (sales)	-0.0088 (0.33)	-0.0119 (0.21)	-0.0094 (0.35)	-0.0087 (0.34)	-0.0116 (0.22)	-0.0090 (0.36)
EBITDA /TA	-0.1467 (0.35)	-0.1482 (0.34)	-0.1400 (0.37)	-0.1511 (0.33)	-0.1554 (0.32)	-0.1464 (0.35)
Inventory + PPE / TA	-0.1140 (0.03)	-0.1103 (0.04)	-0.1191 (0.02)	-0.1153 (0.03)	-0.1127 (0.04)	-0.1213 (0.03)
Capex /TA	0.2548 (0.01)	0.2455 (0.02)	0.2477 (0.01)	0.2568 (0.01)	0.2495 (0.01)	0.2512 (0.01)
Depreciation /TA	1.4440 (0.01)	1.3847 (0.01)	1.3825 (0.01)	1.4691 (0.01)	1.4300 (0.01)	1.4234 (0.01)
Interest Coverage	-0.0163 (0.00)	-0.0166 (0.00)	-0.0166 (0.00)	-0.0163 (0.00)	-0.0166 (0.00)	-0.0165 (0.00)
Ln (years of listing)	-0.0133 (0.13)	-0.0099 (0.27)	-0.0109 (0.22)	-0.0133 (0.13)	-0.0100 (0.26)	-0.0111 (0.21)
total sample	1,061	1,061	1,061	1,061	1,061	1,061
R-squared	0.1822	0.1855	0.1894	0.1821	0.1852	0.1891
Adjusted R-square	0.1616	0.1643	0.1674	0.1623	0.1647	0.1679

Table 2.6

Family firms listed on Bovespa's "good" governance segments

In this table, we present the coefficients on the interaction of the binary variable that identify family-owned firms with the binary variable that identify firms listed on the "good governance" segments. Binary variables to control for year and industry fixed-effects are included in all models. Except for the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. We estimate robust standard errors to account for potential heteroskedasticity. P-values are shown in parentheses.

	Market leverage ratio		Book leverage ratio	
	(1)	(2)	(3)	(4)
intercept	0.1565 (0.16)	0.1557 (0.15)	0.4993 (0.02)	0.5057 (0.02)
Voting Rights	-0.1170 (0.00)		-0.0826 (0.07)	
Cash-flow Rights	0.1146 (0.00)		0.1011 (0.03)	
Excess of Voting Rights		-0.1176 (0.00)		-0.0966 (0.02)
Chairman-CEO	-0.0164 (0.21)	-0.0163 (0.21)	-0.0541 (0.01)	-0.0541 (0.01)
Ln (board size)	0.0175 (0.22)	0.0177 (0.21)	-0.0049 (0.77)	-0.0059 (0.73)
Board Independence	0.1458 (0.00)	0.1459 (0.00)	0.0193 (0.81)	0.0201 (0.80)
BOVESPA Governance Level	-0.0206 (0.36)	-0.0201 (0.36)	-0.0027 (0.93)	-0.0060 (0.83)
Family firms	0.0524 (0.00)	0.0526 (0.00)	0.0319 (0.18)	0.0320 (0.18)
Family firms x Governance Level	0.0624 (0.02)	0.0621 (0.02)	0.0703 (0.04)	0.0727 (0.03)
Ln (sales)	-0.0011 (0.83)	-0.0011 (0.83)	-0.0097 (0.33)	-0.0095 (0.34)
EBITDA /TA	-0.3867 (0.00)	-0.3865 (0.00)	-0.1527 (0.33)	-0.1579 (0.31)
Inventory + PPE / TA	0.1016 (0.01)	0.1017 (0.01)	-0.1152 (0.03)	-0.1167 (0.03)
Capex /TA	0.0415 (0.40)	0.0409 (0.41)	0.2481 (0.01)	0.2507 (0.01)
Depreciation /TA	-0.0113 (0.97)	-0.0128 (0.96)	1.4210 (0.01)	1.4528 (0.01)
Interest Coverage	-0.0135 (0.00)	-0.0135 (0.00)	-0.0164 (0.00)	-0.0164 (0.00)
Ln (years of listing)	-0.0067 (0.36)	-0.0067 (0.37)	-0.0099 (0.26)	-0.0099 (0.26)
total sample	1,061	1,061	1,061	1,061
R-squared	0.2715	0.2718	0.1913	0.1912
Adjusted R-square	0.2510	0.2520	0.1685	0.1692

Table 2.7**Piecewise linear regression**

Board 0 to 4: natural logarithm of board size if board size+1<5; natural logarithm of 5 if board size ≥ 5. Board 5 to 9: 0 if board size < 5; natural logarithm of (board size – 3) if 5 ≤ board size ≤ 9; natural logarithm of 6 if board size > 9. Board over 9: 0 if board size ≤ 9; natural logarithm of (board size – 8) if board size > 9. Binary variables control for year and industry fixed-effects. Other control variables are the same as in Table 6 but for sake of space we do not report their coefficients. Except for the binary variables, all the other variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. Robust standard errors account for potential heteroskedasticity. P-values are shown in parentheses.

	Market leverage		Book leverage	
	(1)	(2)	(3)	(4)
intercept	0.5033 (0.01)	0.5041 (0.01)	1.4000 (0.00)	1.3973 (0.00)
Voting Rights	-0.1007 (0.01)		-0.0651 (0.17)	
Cash-flow Rights	0.1012 (0.00)		0.0973 (0.04)	
Excess of Voting Rights		-0.1033 (0.00)		-0.0886 (0.04)
Chairman-CEO	-0.0096 (0.46)	-0.0095 (0.46)	-0.0512 (0.01)	-0.0510 (0.01)
Board < 5	-0.2360 (0.03)	-0.2363 (0.03)	-0.6116 (0.00)	-0.6037 (0.00)
Board 5 to 9	0.0545 (0.00)	0.0545 (0.00)	0.0543 (0.00)	0.0530 (0.00)
Board > 9	-0.0411 (0.00)	-0.0410 (0.00)	-0.0241 (0.06)	-0.0247 (0.05)
Board Independence	0.1626 (0.00)	0.1627 (0.00)	0.0443 (0.56)	0.0452 (0.55)
BOVESPA Governance Level	-0.0099 (0.65)	-0.0100 (0.65)	0.0010 (0.97)	-0.0045 (0.87)
Family firms	0.0507 (0.00)	0.0509 (0.00)	0.0376 (0.11)	0.0376 (0.11)
Family firms x Governance Level	0.0488 (0.07)	0.0489 (0.07)	0.0605 (0.08)	0.0645 (0.06)
total sample	1,061	1,061	1,061	1,061
R-squared	0.2884	0.2887	0.2076	0.2072
Adjusted R-square	0.2670	0.2680	0.1838	0.1841

Table 3.1
Frequency Distribution

Columns (1) and (2) present the percentage (number) of interest on equity and dividend payers by year of our sample period between 1996 and 2005. The sample includes only the firms that made cash distributions in the correspondent years.

Fiscal-year	(1)	(2)
	Interest payers	Dividend payers
1996	11.59 (8)	88.41 (61)
1997	37.21 (32)	62.79 (54)
1998	54.76 (46)	45.24 (38)
1999	55.43 (51)	44.57 (41)
2000	58.88 (63)	41.12 (44)
2001	63.46 (66)	36.54 (38)
2002	62.64 (57)	37.36 (34)
2003	64.81 (70)	35.19 (38)
2004	69.91 (79)	30.09 (34)
2005	70.64 (77)	29.36 (32)
No.	549	414

Table 3.2
Summary Statistics

This table presents the summary statistics for interest and dividend payers. P-values for t-statistics compare differences between mean values, whereas z-statistics for Wilcoxon rank-sum tests compare the central tendency of the two samples. P-values are for two-tailed tests.

Variable	Mean			Median		
	Interest payers	Dividend payers	p-value	Interest payers	Dividend payers	p-value
EBITDA to sales ratio	0.2584	0.2293	0.01	0.2376	0.1943	0.00
Retained earnings to assets ratio	0.1117	0.0832	0.00	0.1024	0.0699	0.00
Non-equity tax shield	0.0190	0.0348	0.00	0.0090	0.0192	0.00
Depreciation to sales ratio	0.0803	0.0838	0.46	0.0578	0.0598	0.26
Financial expenses to sales ratio	0.0937	0.1348	0.00	0.0729	0.0790	0.01
Payout ratio	0.5335	0.4653	0.09	0.3862	0.2946	0.00
Assets ('000)	5,757,414	3,818,159	0.00	2,079,419	1,038,072	0.00
Market-to-book ratio	1.1558	0.9670	0.00	1.0235	0.8857	0.00

Table 3.3
Logit regression

The dependent variable equals '1' if a firm makes an interest on equity payment (or a combination between interest and dividends) in fiscal year t and '0' if it makes only a dividend payment. We use Liang and Zeger's (1986) generalized estimating equations (GEE) technique with robust standard errors to account for clustering at the firm level and assume that payout choices follow an first-order autoregressive AR(1) process.

	1	2	3	4
intercept	-2.7198 (0.06)	-2.6825 (0.07)	-3.0373 (0.04)	-2.9801 (0.04)
EBITDA to sales ratio	0.8082 (0.30)	0.7729 (0.32)	1.8227 (0.07)	1.8358 (0.07)
Retained earnings to assets ratio	2.3278 (0.02)	2.2364 (0.03)	2.9405 (0.00)	2.8623 (0.01)
Non-equity tax shield	-3.3166 (0.01)	-3.2739 (0.01)		
Depreciation to sales ratio			-2.6472 (0.14)	-2.7241 (0.12)
Financial expenses to sales ratio			-2.6008 (0.00)	-2.6378 (0.00)
Payout ratio	-0.1390 (0.15)		-0.1228 (0.17)	
Ln (Assets)	0.1884 (0.06)	0.1840 (0.06)	0.2204 (0.03)	0.2145 (0.03)
Market-to-book ratio	0.3511 (0.06)	0.3419 (0.07)	0.2515 (0.19)	0.2441 (0.20)
YEAR	Yes	Yes	Yes	Yes
N. events	549	549	549	549
N. obs.	963	963	963	963

Table 3.4**Changes from dividends to interest on equity**

The dependent variable equals '1' for dividend payers that make interest payments in the current year and '0' for dividend payers that continue making dividend distributions. We use generalized estimating equations (GEE) technique with robust standard errors to account for clustering at the firm level and model the correlation structure as independent.

	1	2	3	4
intercept	-4.5926 (0.01)	-4.5904 (0.01)	-4.7103 (0.01)	-4.7105 (0.01)
Δ EBITDA to sales ratio	1.6971 (0.42)	1.6854 (0.42)	1.3371 (0.49)	1.3385 (0.49)
Δ Retained earnings to assets ratio	-1.0106 (0.31)	-0.9703 (0.32)	-0.7692 (0.33)	-0.7702 (0.33)
Δ Non-equity tax shield	-4.4048 (0.07)	-4.5255 (0.07)		
Δ Depreciation to sales ratio			7.2305 (0.09)	7.2371 (0.10)
Δ Financial expenses to sales ratio			-1.2184 (0.16)	-1.2195 (0.15)
Δ Payout ratio		-0.0703 (0.59)		0.0023 (0.99)
Ln (Assets)	0.2109 (0.07)	0.2094 (0.08)	0.2124 (0.08)	0.2125 (0.08)
Market-to-book ratio	0.2025 (0.55)	0.2126 (0.53)	0.2900 (0.43)	0.2896 (0.42)
YEAR	Yes	Yes	Yes	Yes
N. events	87	87	87	87
N. obs.	302	302	302	302

Table 3.5**Changes from interest on equity to dividends**

The dependent variable equals '1' for interest payers that make dividend distributions in the current year and '0' for interest payers that continue making interest payments. We use generalized estimating equations (GEE) technique with robust standard errors to account for clustering at the firm level and model the correlation structure as independent.

	1	2	3	4
intercept	-4.7699 (0.02)	-4.5716 (0.02)	-4.5027 (0.02)	-4.3644 (0.03)
Δ EBITDA to sales ratio	-5.3625 (0.08)	-5.4423 (0.10)	-6.1299 (0.05)	-6.0749 (0.07)
Δ Retained earnings to assets ratio	0.7389 (0.85)	-0.1744 (0.97)	0.3965 (0.91)	-0.3971 (0.91)
Δ Non-equity tax shield	0.4639 (0.90)	0.5166 (0.88)		
Δ Depreciation to sales ratio			6.2491 (0.32)	4.7505 (0.44)
Δ Financial expenses to sales ratio			3.4001 (0.14)	3.1657 (0.16)
Δ Payout ratio		0.4426 (0.01)		0.4193 (0.01)
Ln (Assets)	0.1832 (0.13)	0.1692 (0.18)	0.1652 (0.17)	0.1546 (0.23)
Market-to-book ratio	-0.3998 (0.43)	-0.3570 (0.48)	-0.3928 (0.44)	-0.3435 (0.50)
YEAR	Yes	Yes	Yes	Yes
N. events	44	44	44	44
N. obs.	431	431	431	431

Table 3.6**Abnormal returns for interest and dividend announcements**

The market model and the Maynes and Rumsey's (1993) trade-to-trade approach are used to assess whether the announcement effect of a cash distribution differs for interest and dividend payments. Panel A refers to announcements to be voted on by shareholders. Panels B and C refer to announcements of payout decisions voted on by directors. P-values are presented between parentheses.

Days relative to the announcement	Interest on equity	Dividends
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Panel A: Shareholder meetings

[-1, 0]	0.0066 (0.20)	0.0008 (0.79)
[0]	0.0070 (0.06)	0.0019 (0.38)
[0, +1]	0.0094 (0.07)	0.0025 (0.43)
[-1, +1]	0.0090 (0.16)	0.0014 (0.72)

Panel B: Boards meetings

[-1, 0]	0.0031 (0.10)	0.0067 (0.03)
[0]	0.0023 (0.09)	0.0072 (0.00)
[0, +1]	0.0110 (0.00)	0.0155 (0.00)
[-1, +1]	0.0118 (0.00)	0.0150 (0.00)

Panel C: Board meetings and ex-rights after at least 5 trading days

[-1, 0]	0.0052 (0.06)	0.0097 (0.03)
[0]	0.0016 (0.40)	0.0085 (0.01)
[0, +1]	0.0081 (0.00)	0.0115 (0.01)
[-1, +1]	0.0117 (0.00)	0.0127 (0.02)

Table 3.7**Multivariate analysis for abnormal returns**

The dependent variable is the 2- or 3-day cumulative abnormal return from payout announcements. Payout is a binary variable equal to '1' if the payout is in the interest form (or a combination of interest and dividends) and '0' if it is only in the form of dividends. Yield is the dividend yield. Size is the natural logarithm of the market value of equity. Panel A refers to announcements to be voted on by shareholders. Panels B and C refer to announcements of payout decisions voted on by directors. We use OLS and clustered standard errors in the estimations. P-values are presented between parentheses.

Event Window	Intercept	Payout	Yield	Size	Observations	R-squared
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Panel A: Shareholder meeting

(0, 1)	0.0383 (0.14)	0.0121 (0.01)	0.1203 (0.22)	-0.0032 (0.06)	201	0.06
(-1, 1)	0.0555 (0.07)	0.0171 (0.00)	0.1204 (0.21)	-0.0047 (0.02)	201	0.09

Panel B: Boards meeting

(0, 1)	0.0141 (0.38)	-0.0040 (0.32)	0.5150 (0.00)	-0.0008 (0.40)	475	0.14
(-1, 1)	0.0079 (0.72)	-0.0016 (0.79)	0.4589 (0.00)	-0.0005 (0.74)	475	0.09

Panel C: Board meeting and ex-rights after at least 5 trading days

(0, 1)	-0.0057 (0.84)	-0.0052 (0.34)	0.4486 (0.00)	0.0005 (0.76)	222	0.05
(-1, 1)	-0.0357 (0.35)	-0.0032 (0.67)	0.4694 (0.03)	0.0025 (0.29)	222	0.04

Figure 1.1

Performance of Bovespa main indices between Jun 01 and Dec 05

The IGC measures the return of a theoretical portfolio constituted by all shares traded on the three “good governance” markets. IBovespa is the main index for the Brazilian stock market and measures the returns of stocks representing more than 80 percent of that exchange trading volume. IBRX-50 measures the total return of a theoretical portfolio constituted by the 50 most traded stocks. Source: Novo Mercado (Bovespa) informative report n. 76, January 2006.

