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Article

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Cash holdings and corporate governance: The effects of premium listing in Brazil[☆]

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Abstract

Although some studies have analysed the effects of corporate governance practices on cash holdings, this study is the first, to the best of our knowledge, to analyse the effects of a non-mandatory premium listing that was designed to establish a higher standard of governance set by Brazilian public companies. The creation of a domestic and non-mandatory premium listing in 2000 offers a unique opportunity to analyse the relation of its adoption on cash holdings. For this purpose, we used a sample of Brazilian companies between 2001 and 2014. The results indicate, after controlling for endogeneity through the Generalized Method of Moments (GMM) by dynamic panel data, that only firms listed in the New Market (NM), where companies can only issue shares with voting rights, obtained positive significance. Therefore, the issuance of only voting shares reduces agency costs and managerial entrenchment, and consequently reduces the expropriation of the cash holdings, given its vulnerability. In this way, the results obtained in this study contribute to the literature, especially for emerging markets where the use of non-voting shares is common, by pointing out that investors can have greater confidence on cash holdings management in companies where only voting shares are allowed.

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1. Introduction

Assuming the efficient market hypothesis, where organizations have unrestricted access to external funds at a risk-free rate to finance their debts when necessary, there would be no need for firms to worry about managing their cash (Almeida et al., 2004). However, the assumptions of this market, can be considered as platonic abstractions, given that companies would have access to external financing in a timely manner at an affordable cost. In this way, Keynes (1936) mentions that the decision about

the percentage of assets to be allocated in cash is an essential investment decision.

Moreover, the Brazilian market, as an emerging economy, is known by the difficulty of access to sources of financing and by real interest rates among the highest in the world (Crisóstomo et al., 2014; Lozano and Caltabiano, 2014), which, in turn, makes the discussion about the percentage of assets held in cash a relevant topic of discussion. Thus, in considering that funding sources cannot be an ideal substitute for internally generated resources (Myers, 1977; Myers and Majluf, 1984) and Brazilian companies face great difficulties in obtaining timely financing to their investment opportunities, the internally generated cash flows and the cash holdings play a key role.

A policy of higher cash balance represents a competitive advantage and a way to mitigate the adverse effects of financial constraints, since firms may lose valuable investment opportunities when financial resources are not available in a timely

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manner (Denis and Sibilkov, 2009). However, Harford et al. (2008) mention that the principal will limit the access to larger cash reserves if there are no robust mechanisms to control agent's opportunistic actions.

This happens because maintaining higher percentage of cash makes it easier and provides more flexibility to agent expropriate part of these resources (Pinkowitz et al., 2006). In addition, Oler and Picconi (2013) provide evidence that the market penalizes firms with weak governance mechanisms when they have higher cash levels.

The use of governance practices, however, can mitigate part of the agency conflicts related to the misalignment of interests between agent and principal (Frésard and Salva, 2010; Harford et al., 2008). Harford et al. (2008) still argue that when governance mechanisms are weak, excess cash leads to inefficient investment, and reduces the value of a company.

Although there are relevant studies relating the effects of corporate governance on cash holdings, such as Dittmar et al. (2003), Dittmar and Mahrt-Smith (2007), Harford et al. (2008), Frésard and Salva (2010), Huang et al. (2013), Iskandar-Datta and Jia (2013), among others, the inclusion of the premium listing (Levels 1, 2 and New Market) in the Brazilian market offers a unique opportunity to analyze the effects of different governance practices on the cash holdings.

The special listing was created to increase credibility and attract international investors as an initiative of the São Paulo Stock Exchange, former BM&FBovespa, now called “Brasil, Bolsa, Balcão” or B3, after merger of commodities and equity markets from BM&FBovespa and OTC market from Cetip. Levels 1 and 2 of Governance were included, and the New Market, all levels with voluntary adoption but with increment of corporate governance requirements.

Prior to its creation, the Brazilian market suffered from the lack of legal frameworks that protected minority shareholders and lack of transparency in market institutions. These deficiencies stemmed in part by the difficulty of approval of legislative reforms in the Brazilian stock market by some major shareholders (Chavez and Silva, 2009).

Therefore, one of the alternatives found to overcome this whole process of bureaucratic dysfunction and attract the attention of international investors was the creation of a premium list of voluntary adoption to signal the commitment of the Brazilian market to a stronger corporate governance. This listing proposes several governance requirements, as shown in Section 2, then those required by Brazilian law, but they do not have a mandatory adoption (Chavez and Silva, 2009).

Carvalho and Pennacchi (2012) mention that BM&FBovespa (B3) was not the first stock exchange to establish premium listings, however it was the first to allow previously-listed firms to commit themselves voluntarily to higher standards of corporate governance with a premium exchange listing. The authors' findings suggest that the premium list is a credible mechanism that Brazilian companies can use to reduce their costs of funding growth opportunities.

The Brazilian market, besides being marked by ownership concentration, lack of transparency and confidence in market institutions (Campello, 2012), can also be considered as an

emerging market with limited access of firms to funding sources (Crisóstomo et al., 2014; Lozano and Caltabiano, 2014). In a context of financial constraints and crisis, policies to maintain larger cash balances can bring valuable benefits to organizations (Denis and Sibilkov, 2009), but only if the principal has mechanisms to control the opportunistic actions of the agent (Harford, 1999).

This fact occurs because the cash reserves is accessible with little scrutiny and much of their use is discretionary which, in turn, facilitates its expropriation. Consequently, in the absence of robust corporate governance mechanisms that can align interests between agent and principal, a possible advantage associated with higher cash levels can be eroded (Myers and Rajan, 1995; Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010).

So, the objective of this paper is to study the relation of adopting corporate governance practices on the cash holdings of Brazilian public companies.

In spite of these major changes in the Brazilian stock market, little is known about how the creation of the special listing affected the cash levels of Brazilian companies. Aiming to fill this gap, we provide valuable insights by studying the relation between the adoption of corporate governance practices, through the creation of a domestic and non-mandatory premium listing, on the cash holdings of Brazilian public companies.

The results of this study, after endogeneity control through the Generalized Method of Moment (GMM) estimate for dynamic panel data, point out that the existence of dual class of shares facilitates the value destruction associated with the misuse of the cash holdings. Hence, Brazilian companies, when issuing only shares with voting rights, in addition to meeting all the other requirements set out in Table 1 for Levels 1 and 2 and migrating to the New Market, are able to reduce part of the misalignment of interests between agent and principal and, consequently, maintain higher levels of its assets in cash and cash equivalents.

The evidence obtained in this article may be useful for domestic and international investors, suggesting that they can have greater confidence on cash holdings management in companies where only voting shares are allowed. Furthermore, the results found may also be useful for other markets, especially for emerging countries where the use of non-voting shares is common (Bortolon and Leal, 2014), by indicating that part of the agency problems related to the misuse of the cash reserves could be mitigated by issuing only voting shares. In this way, emerging markets may consider creating new voluntary listing mechanisms, but with greater demands, such as issuing only shares based on the one-share-one-vote principle. This, in turn, could increase the protection and transparency of investors and, consequently, attract more domestic and international investment.

The rest of the paper is organized as follows: In the second section, we develop the research hypothesis. In the third part, we discuss the research methodology, presenting the sample used, the descriptive statistics, as well as the theoretical justification of each variable and the econometric model used. Finally, in the last two sections we present, respectively, the empirical results and the conclusions of the research.

2. Hypothesis development

If there is no alignment of interests between agent and principal, as well as mechanism to control the possible opportunistic actions of the agent, there is strong evidence that the agent tries to expropriate the principal (Jensen and Meckling, 1976; Jensen, 1986). Cash is a relatively vulnerable item to opportunistic behaviour of managers given its access with little scrutiny and much of their use is discretionary (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010). Furthermore, the excess of cash promotes even more the opportunistic actions of the agent (Iskandar-Datta and Jia, 2013).

For Dittmar and Mahrt-Smith (2007), robust governance mechanisms significantly improves the value of a company by optimizing the use of its cash balance. Besides that, the value of one dollar in cash of a company with good governance practices is substantially higher than in those with poor corporate governance. This fact occurs because in organizations with better levels of governance, surplus cash resources are better controlled, and in the others, the cash reserves are dissipated more quickly.

Under these circumstances, when the mechanisms of governance are poor, the agent can act opportunistically and makes use of the assets, especially cash, to bring personal benefits at the expense of minority shareholders (Myers and Rajan, 1995). The way to expropriate these resources, according to Myers and Rajan (1995), can be, for example, by excessive salaries, rewards or even by theft.

With the lack of robust mechanisms to control the opportunistic actions of managers, shareholders do not have incentives nor reliability to maintain higher cash reserves (Harford et al., 2008). Jain et al. (2013) provide evidence that stronger governance structures have the potential to increase the marginal value of cash by reducing agency conflicts, allowing the use of higher cash balance, according to the needs of each firm.

In the early 2000s, Brazil was seen as a country with weak corporate governance. Thus, Black et al. (2014) mention that in response to a loss of trading volume to other markets, as well as due to the belief that the loss of trading volume was related to the weak protection for minority shareholders, the Brazilian stock market created three high-governance listings: New Market, noted by the higher level of requirement, Level 2, or intermediate and Level 1, considered as the lowest level. In a manner of, based on information from January 2017, we found that 28 companies are in Level 1, 19 in Level 2 and 129 in the New Market.

These levels aimed to signal to investors that premium listed companies have better governance practices. Therefore, at the time of purchase a stock, investors would have more confidence in these companies which would reduce the premium for the risk required in the investment (Carvalho and Pennacchi, 2012). Chavez and Silva (2009, p. 36) provide an illustrative comparative of each level requirements, according to Table 1.

Carvalho and Pennacchi (2012) indicate that the New Market is very strict for many Brazilian firms, so that the BM&FBovespa also created two other premium lists, Level 1, in which gover-

Table 1

Requirements for Corporate Governance Levels 1, 2 and New Market.

Requirements for Corporate Governance Level 1

- Minimum free float of 25% of capital.
- Public offering for the placing of shares maximize “capital dispersion to a broader spectrum of shareholders”.
- Improved disclosure of quarterly information, consolidated statements and audits.
- Disclosure of insider and controlling shareholders’ trading.
- Disclosure of shareholder agreements and stock option programs.
- Facilitate annual calendar of corporate events.

Additional Requirements for Corporate Governance Level 2

- Two-year mandate for Board of Directors.
- Annual Balance sheet in accordance with US GAAP or IAS.
- Tag-along rights for minority shareholders.
- Voting rights to preferred shareholders in the event of a merger or acquisition, spin-off, or the signing of contracts with firms belonging to the same group.
- De-listing from Level 2 through tender offer using the economic value criteria.
- Adherence to the Market Arbitration Panel for conflict resolution.

Additional Requirement for New Market

- Firms can issue only shares with voting rights.

Notes: Chavez and Silva (2009, p. 36).

nance practices are less demanding than Level 2, focusing on improving disclosure. Level 2, on the other hand, is more similar to the New Market, but allows listed companies to issue preferred shares, since before the creation of the premium listing, 89% of the listed companies issued non-voting shares.

This progression from Level 1 to the New Market, according to Chavez and Silva (2009), can be seen as a way of encouraging firms to gradually and voluntarily progress to more robust governance mechanisms. In addition, if a company is accused by its minority shareholders of violating governance standards, it may face mandatory arbitration. These disputes are resolved in the Market Arbitration Panel, which in turn, has the same authority as a decision of the Brazilian Supreme Court and may also require that the controlling shareholders and/or managers are held accountable for their opportunistic behaviour.

The evidences of Carvalho and Pennacchi (2012) suggest that the lists cited above represent a credible mechanism that can reduce agency costs and the level of informational asymmetry. Therefore, the research hypothesis of this study is:

H_1 : Firms with a better level of corporate governance maintain higher cash holdings.

Furthermore, Coffee (2002) points out that the US market offers better protection to investors than the respective markets where each company is located. In this sense, Huang et al. (2013) indicate that the improvement of corporate governance associated with cross-listing enables firms to maintain higher cash levels, thus allowing them to take advantage of the benefits associated with larger cash balances with a lower risk of managers making improper use of this resource.

The improvement in corporate governance is even more pronounced in emerging markets, given the lower protection of investors in these countries (Lel and Miller, 2008). The cross-listing firms are financially less restricted, have greater access to external financial markets (Lins et al., 2005), show an improve-

ment in disclosure and corporate transparency (Khanna et al., 2004), and are exposed to market analysts who can more accurately predict the future prospects of each firm (Lang et al., 2003).

Moreover, evidence from Huang et al. (2013) points out that although cross-listed firms on a US Stock Exchange are subject to expropriation of the cash balances, the requirements for a firm to be listed suggest greater protection for shareholders, thereby mitigating part of the agency conflicts. Finally, the findings of Frésard and Salva (2010) reveal that investors do associate a US listing with a reduction in ineffective actions related to the use of cash and cash equivalents.

At the end of the 1990s, the Brazilian market suffered from low IPO activity and increased fragmentation of the negotiations in favour of the US stock market, when several companies began issuing ADR with much more demanding requirements than the Brazilian premium listing (Bortolon and Leal, 2014).

Once firms undertake more robust governance mechanisms and provide a greater degree of protection for shareholders and transparency by cross-listing in the US, it is expected, therefore, a positive association of the variable ADR with the companies' cash levels, especially in emerging markets (Huang et al., 2013). In this way, a binary variable was also included if the organization is issuer of American Depositary Receipts (ADR) program, at any level, since the results could be affected if any Brazilian company were already issuing American Depositary Receipts (ADR) and then became part of one of the three levels of the Brazilian non-mandatory premium listing.

In order to study the relation of adopting good practices of corporate governance on cash holdings, we use four proxies related to the topic: BM&FBovespa (B3) Special Listing, through the subdivision in Level 1, Level 2 and New Market; and, if company is issuer of American Depositary Receipts (ADR) program, at any level.

For each proxy of corporate governance used, a positive association with cash holdings is expected, since, better governance practices can reduce agency conflicts and, consequently, allows organizations to maintain higher percentages of their assets in cash without the agent expropriating this resource.

3. Research methodology

3.1. Sample

The sample used in this study includes 141 Brazilian companies, excluding financial institutions, all listed on the “Brasil, Bolsa, Balcão” (B3). The option to exclude financial sector is because of their own characteristics, especially regarding to the cash policies, which could impair the analysis of this research.

The São Paulo Stock Exchange (BM&FBovespa – B3) created the three special levels in December 2000. To analyse the effects of the inclusion of these levels, it was decided to start the sample period from 2001, extending to the year 2014. We obtain the data through Economática[®] database, the main database for Latin American companies. Economática[®] database systematizes the capture of the financial statements from the Brazilian

Table 2
Research sample.

2001–2014	Sample	Observations
Total	141	1974
(–) Firms/Observations with missing values for the variables used	4	(105)
(=) Final sample used to GMM model	137	1869
(–) Time lag (GMM)		(277)
(=) Observations in the fitted model		1592

securities exchange commission, thus, they are high reliable data.

The consolidated financial statements were collected and updated for inflation. The choice of the sample organizations occurred as the availability of data for all variables during the period of analysis. The variables were winsorized at their 1st and 99th percentiles to avoid possible influence of the outliers on the results. We mentioned, however, that the results are not influenced by the outliers.

We used 141 companies over 14 years and obtained an initial number of 1974 observations. However, 105 observations and 4 firms were withdrawn, which did not present all the necessary data. Finally, the Generalized Method of Moments (GMM) model makes use of the time lag fitted model for the instrument variable, which resulted in the exclusion of a further 277 observations, according to Table 2.

3.2. Description of the variables

3.2.1. Cash holdings

The dependent variable of the present study is the cash level, calculated by the natural logarithm of the sum of the cash and cash equivalents scaled by the net assets (total assets minus cash and cash equivalents), following the suggestions of Opler (1999), Dittmar et al. (2003) and Manoel et al. (2018).

3.2.2. Corporate governance

We used four dummies to analyse the effects of corporate governance practices on cash management: first, we opted for the subdivision into three dummies, if the organization belong to Level 1 (L1), Level 2 (L2) and New Market (NM); and finally, if the company is issuer of American Depositary Receipts (ADR) program, at any level. Thus, if the company belongs to Level 1 (L1) the value 1 was assigned, and 0 otherwise. We used the same criterion if the company is listed in Level 2 (L2) and New Market (NM). Finally, the same criterion for American Depositary Receipts (ADR) issuers.

3.2.3. Control variables

- Large companies have better access to capital markets. They face lower transaction cost and are less susceptible to the effects of information asymmetry (Kadapakkam et al., 1998). Miller and Orr (1966) also suggests a possible economies of

scale in cash management. Thus, we expect a negative association between size, obtained through the natural logarithm of net assets, according to the use of Almeida et al. (2004), Han and Qiu (2007) and among others.

- The results from Porta et al. (2000) suggest that organizations in weak governance structures retain higher percentages of their earnings. Therefore, we expect a negative association between the percentage of dividends paid by organizations and their cash holdings. However, the relationship between these two variables is a controversial topic, since for Lozano and Caltabiano (2014) the results found so far are inconclusive. Opler (1999), Ozkan and Ozkan (2004) and Bates et al. (2009) suggests to use payout as a dummy variable with the value 1 to the sample/year that paid dividends and, otherwise, 0. However, this may not be the best option for the Brazilian case, since in Brazil if a company has a negative net income during its fiscal year the firm is not required to distribute dividends. In this way, we decided to use ratio between the Total Dividends paid each year as a function of Net Income, which would denote the percentage of dividends paid each year in relation to the company's profit.
- Measured by Long-Term Debt divided by total assets. According to Han and Qiu (2007), organizations with a high degree of leverage may need to save more cash to pay its debts. This suggests that cash holdings decrease as organizations' debts increase. Thereby, Opler (1999), Ozkan and Ozkan (2004), Han and Qiu (2007) and Al-Najjar (2013) indicate that there is a negative association between leverage and cash holdings.
- We also decided to include the variable debt, since organizations with lower debt levels have incentives to reduce information asymmetry and agency costs. Thus, the calculation of the variable "debt" is the ratio of total banking debt by total debt, as suggested by Ozkan and Ozkan (2004).
- According to Ferreira and Vilela (2004), firms with greater investment opportunities have a greater demand for cash, given that in case of cash insufficiency they can lose valuable investment projects. Therefore, we expect a positive association between an organization's cash holdings and its investment opportunities.

For that, we decided to use a measure based on the annual growth rate of sales, as suggested by Bigelli and Sánchez-Vidal (2012) and Oler and Picconi (2013), in which the Total Revenue of the year is subtracted from the Total Revenue of the previous year, the resulting value is still divided by the Total Revenue of the previous year.

- According to the Pecking Order Theory, organizations have a hierarchical order in choosing their sources of funding. Therefore, we expect that the most profitable organizations are better able to pay dividends to its shareholders, as well as to pay their debts and store cash (Al-Najjar, 2013). We expect a positive association between profitability and cash holdings. For this purpose, we used the Return on Equity (ROE), obtained respectively by Net Income scaled by Equity.
- According to Al-Najjar (2013) and Ozkan and Ozkan (2004), it is expected that the costs of converting liquid assets into cash are lower than other assets. In this way, organizations with a greater number of liquid assets can convert such assets in

cash and, in turn, are less likely to accumulate cash. Thus, the liquidity ratio used in this work is the Current Liquidity (CL), as suggested by Al-Najjar (2013), by dividing the Current Assets by Current Liabilities.

- In the same way, we control the changes in Net Working Capital (NWC), since it can be a substitute for money, or even compete for the cash resources according to Opler (1999) and Almeida et al. (2004). As used by Opler (1999), we calculate the NWC subtracting non-Cash Current Assets by Current Liabilities scaled by Net Assets.
- We also control the changes in the ratio of Short-Term Debt to Total Assets, because as net working capital, changes in Short-Term Debt represent an alternative to cash, and organizations can make use of it to build cash reserves (Almeida et al., 2004). The variable used was obtained by dividing the Loans and Short-Term Financing by the sum of liabilities with Equity.
- The access to credit during economic crises is lower and firms, in this context, tends to increase their cash level. Therefore, we use a dummy variable that assumes the value 1 for the years 2008 and 2009 and 0 for the other periods.

3.3. Econometric model

We used in this work the Generalized Method of Moment (GMM) for dynamic panel data to address the issue of endogeneity that is likely to occur in studies of cash holdings (Ozkan and Ozkan, 2004). The issue of endogeneity, according to Ozkan and Ozkan (2004), is a relevant factor to be considered in studies on the management of the cash balance, since that the shocks that affect the cash levels are also likely to influence some of the regressors. Thus, we use the following econometric model:

$$\begin{aligned} \text{CASH}_{i,t} = & \beta_0 + \beta_1 \text{CASH}_{i,t-1} + \beta_2 \text{L1}_{i,t} + \beta_3 \text{L2}_{i,t} + \beta_4 \text{NM}_{i,t} \\ & + \beta_5 \text{ADR}_{i,t} + \beta_6 \text{Size}_{i,t} + \beta_7 \text{Payout}_{i,t} + \\ & \beta_8 \text{Lev}_{i,t} + \beta_9 \text{Debt}_{i,t} + \beta_{10} \text{IO}_{i,t} + \beta_{11} \text{ROE}_{i,t} \\ & + \beta_{12} \text{CL}_{i,t} + \beta_{13} \text{NWC}_{i,t} + \beta_{14} \text{STD}_{i,t} + \beta_{15} + \\ & \text{Crisis}_{i,t} + \mu_{i,t} \end{aligned} \quad (1)$$

where,

- Cash and Equivalents, obtained by the natural logarithm of the sum of Cash and Cash Equivalents, scaled by Net Assets (Non-Cash and Cash Equivalents Assets);
- Level 1, dummy variable that assumes 1 if the company is listed in Level 1, and 0 otherwise;
- Level 2, dummy variable that assumes 1 if the company is listed in Level 2, and 0 otherwise;
- New Market, dummy variable that assumes 1 if the company is listed in New Market, and 0 otherwise;
- American Depositary Receipts, dummy variable that assumes 1 if the company is issuer of American Depositary Receipts (ADR) program, at any level, and 0 otherwise;

Table 3
Descriptive statistics.

Panel A											
Proxy	N	Cash/total assets	Size	Payout	Leverage	Debt	IO	ROE	CL	NWC	STD
N1	238	0.110	16.212	0.401	0.780	0.560	0.068	0.099	1.801	0.039	0.104
N2	40	0.103	15.324	0.551	5.554	0.476	0.033	0.069	1.583	0.107	0.130
NM	154	0.106	15.878	0.505	1.769	0.553	0.104	0.149	1.666	0.066	0.105
Non-listing premium	1439	0.071	13.823	0.187	1.919	0.383	0.050	0.099	1.540	−0.018	0.117
ADR	204	0.089	17.629	0.426	1.157	0.555	0.089	0.103	1.405	−0.017	0.073
Non-ADR	1666	0.079	13.924	0.226	1.923	0.405	0.053	0.102	1.605	0.001	0.120
Panel B											
Variables	Mean	Median	Std. Dev.	Minimum	Maximum						
Cash/total assets	0.080	0.043	0.099	0.000	0.769						
Size	14.327	14.202	2.067	8.943	20.629						
Payout	0.248	0.000	0.703	−0.647	5.207						
Leverage	1.840	1.609	16.311	−75.742	100.303						
Debt	0.421	0.456	0.245	0.000	0.888						
IO	0.102	0.036	1.310	−5.936	45.077						
ROE	0.102	0.108	0.543	−2.554	2.427						
CL	1.584	1.309	1.217	0.075	7.533						
NWC	−0.001	0.003	0.284	−1.264	0.496						
STD	0.115	0.080	0.113	0.000	0.598						

Notes: IO: Investment Opportunities; CL: Current Liquidity; NWC: Net Working Capital; STD: Short-Term Debt.

- Size, obtained by the natural logarithm of non-Cash Total Assets;
- Payout, obtained by Total Dividends distributed scaled by Net Income;
- Leverage, obtained by the sum of Total Short-Term Debts with Total Long-Term Debt, scaled by Net Assets;
- Debt, obtained by the sum of Loans and Financing of Short and Long Term, scaled by the sum of Current Liabilities and Non-Current Liabilities;
- Investment Opportunities, by subtracting the Total Revenue of the year from the Total Revenue of the previous year, scaled by the Total Revenue of the previous year;
- Return on Equity, obtained by Net Income scaled by Equity;
- Current Liquidity, obtained of Current Assets scaled by Current Liabilities;
- Net Working Capital, obtained by subtracting Current Assets by Current Liabilities, scaled by Net Assets;
- Short-Term Debt, obtained Total Short-Term Debts, scaled by the sum of Equity and Liabilities;
- Financial Crisis, dummy variable that assumes the value 1 for the years 2008 and 2009 and 0 for the remainder sample period;
- Error term.

3.4. Descriptive statistics

The annual average of the cash holdings as a function of Total Assets can be observed in Fig. 1. We found an increase in the cash holdings from 2001 to 2008 and 2009, which demonstrates the impact of the US subprime crisis in the dependent variable. The overall average of the cash balances was 7.98%, according to Panel B of Table 3, which is considered low when compared,

for example, to that obtained by Bates et al. (2009), which represented around 23% of the total assets of US companies, such as lower than that found by Opler (1999) of 18% of total assets.

Panel B of Table 3, in turn, presents the average, median, standard deviation, minimum and maximum for the variables used. The average (median) of cash and cash equivalents is 7.98% (4.34%) with a standard deviation of 0.10.

4. Results and analysis

To answer the research question of this work, we conducted the assumptions tests and specification of the linear regression models. Table 4 shows the results by the Generalized Method of Moments (GMM) with standard asymptotic errors, to control endogeneity of the independent variables with the cash management decision policy.

The variables are non-normal (Shapiro–Wilk test) and we used the robust standard errors regression for the heteroskedasticity (White test for heteroskedasticity with p -value = 0.000). We also verify multicollinearity through the Variance Inflation Factor (VIF) test, with the highest VIF of 2.19. Hence, no value from the VIF test was high enough to have collinearity problems.

The results of the Sargan test indicate that the instrument variable used in the estimation model ($Cash_{t-1}$) are not correlated with the error term. Although the descriptive statistics indicate that the firms in the special listing maintain similar levels of cash, and it is even greater for firms in Level 1 (10.96%), we can see, among the three Corporate Governance proxies used, that only those companies listed in the New Market obtained statistical significance with a positive sign.

The results were similar in all three models tested. In the first model, we used the three binary variables representing the levels

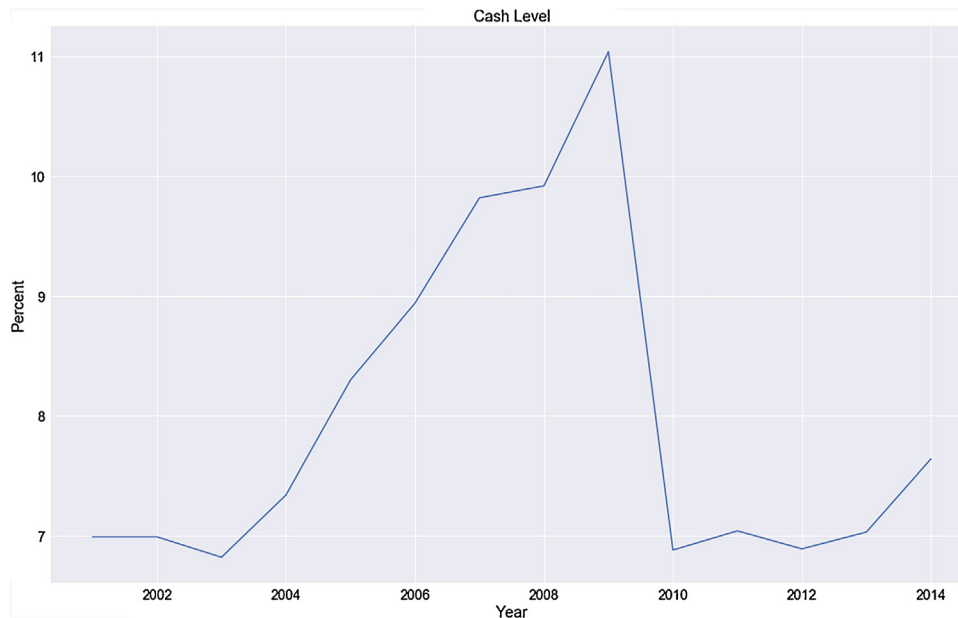


Fig. 1. Variation of cash holdings.

of the Brazilian special listing in addition to the control variables. In the second, we used the ADR variable separately along with the other control variables. Finally, in the latter model, the four corporate governance proxies are used.

The results indicate that only the New Market listing is statistically significant. In this way, the requirements to qualify for Level 1, such as improvement in accounting disclosure, disclosure of quarterly information, obligation to report consolidated numbers and special audit review does not seem to have affected, at least in this set, the way firms manage their cash. Similarly to Level 1, Level 2 firms did not achieve statistical significance, even they still need fulfill Level 1 requirements and some additional need, for example, change the entire Board of Directors within a maximum of two years without staggered elections, provide tag-along rights to minority shareholders and adhere to the Market Arbitration Panel in resolving conflicts.

However, Levels 1 and 2 have a small number of firms when compared with New Market which makes impossible to develop specific models for each level separately. Therefore, despite the positive association for Level 1 and Level 2, only the companies from the New Market, marked by the highest degree of corporate governance requirements, is statistically significant. The set of factors for listing at the lower levels, added by the firm, can only issue voting shares guarantees, *ceteris paribus*, that the principal may provide higher levels of cash to the agent.

We can highlight the voting shares as a decisive factor justifying the positive significant result of the New Market. Therefore, the central point of discussion is the decision to issue shares with voting rights or not, which in turn refers to the property arrangements.

The Brazilian market is demarcated by the high concentration of shareholdings and, not infrequently, the control of certain firms is centralized in a family or in a small group of shareholders. Thus, only a small portion of voting shares remain in the

market, and they did not influence the most relevant and central decisions of a firm.

According to [Carvalho and Pennacchi \(2012\)](#), the shareholding concentration of non-voting firms tends to be more dispersed and with a larger volume of negotiations than firms with voting shares. So, when considering these factors, in line with the lower access to information, the shareholders of non-voting have less bargaining power over the controlling owner. Moreover, voting shareholders are generally more informed.

This type of property arrangement, where there is a separation of voting rights from cash flow rights, aggravates agency conflicts ([Masulis et al., 2009](#)). Nevertheless, [Carvalho and Pennacchi \(2012\)](#) also mention that they are more likely to expropriation especially during changes of control and going-private transactions.

Prior the premium listing, most Brazilian companies were issuing dual class of shares: Voting Shares (Ordinary – ON) and Non-Voting Shares (Preferred – PN). This allows many companies to be controlled by majority shareholders who hold a small portion of the overall equity shareholding, but with the majority voting shares. And since members with a higher percentage of voting rights control capital out of proportion to those entitled to cash flows, they are more likely to make decisions that would not be taken if they had a higher percentage of the capital invested [Masulis et al. \(2009\)](#).

Therefore, in meeting the last Level 2 upward requirement until the New Market to issue only voting shares, the companies have their control more dispersed, limiting the control of the minority shareholder and, consequently, affecting the decision-making process related to the cash holdings.

Consequently, the results obtained agree with the findings of [Masulis et al. \(2009\)](#), in which, in comparison with firms that only issues voting shares with those of dual class shares, the cash holdings of the first group are more valued by its shareholders.

Table 4
GMM cash holdings regression.

Variables	Premium listing Coefficients (p-value)	ADR Coefficients (p-value)	All Coefficients (p-value)
Cash_{t-1} (instrument)	0.350*** (0.000)	0.345*** (0.000)	0.350*** (0.000)
Constant	−0.035*** (0.000)	−0.029*** (0.000)	−0.036*** (0.000)
Level 1	0.090 (0.716)	–	0.089 (0.721)
Level 2	0.421 (0.438)	–	0.423 (0.437)
New Market	0.812** (0.016)	–	0.809** (0.013)
ADR	–	0.309 (0.610)	0.168 (0.785)
Size	0.162 (0.220)	0.204 (0.118)	0.161 (0.222)
Payout	−0.048 (0.244)	−0.048 (0.245)	−0.048 (0.243)
Leverage	0.000 (0.174)	0.002 (0.186)	0.002 (0.175)
Debt	1.016*** (0.001)	1.139*** (0.001)	1.167*** (0.014)
Investment Opportunities	0.076 (0.465)	0.068 (0.511)	0.076 (0.464)
ROE	0.034 (0.509)	0.038 (0.457)	0.034 (0.507)
Current Liquidity	0.554*** (0.000)	0.562*** (0.000)	0.554*** (0.000)
Net Working Capital	−1.910*** (0.000)	−1.950*** (0.000)	−1.907*** (0.000)
Short-Term Debt	−1.571** (0.011)	−1.583** (0.010)	−1.567** (0.016)
Financial Crisis	0.374*** (0.000)	0.384*** (0.000)	0.374*** (0.000)
Observations (n)	1592	1592	1592
Corr(y, ŷ)	0.796 206.47 (77)	0.796 212.11 (77)	0.796 205.566 (77)
Sargan Test (df)	(0.000)	(0.000)	(0.000)

* Statistically significant at 10%.

** Statistically significant at 5%.

*** Statistically significant at 1%.

The authors attribute this result to the major agency problems in firms with dual class shares.

The concentration of voting rights in a small group of minority shareholders allows them to retain control of the organization, even with most of the company's capital coming from other non-voting shareholders. As a result, they can make decisions that

are not always consistent with the interests of the other shareholders. Consequently, they take advantage of their privileged situation to make decisions that somehow maximize their utility function at the expense of the minority shareholders.

Nevertheless, shareholders who hold most of voting rights can still reduce their shares without voting rights. This may still increase the risk-bias by making use of cash holdings for riskier investments, that would not be taken if the controlling shareholder had a higher percentage of the capital invested in the company in shares without voting rights.

This result is consistent with the evidence of Grossman and Hart (1988), Harris and Raviv (1988) and Masulis et al. (2009) that dual class of shares allows controlling shareholders to obtain benefits from their privileged position, confirming this findings to cash management policies.

Thus, the evidence obtained in this study indicate that the existence of dual class of shares facilitates the destruction value associated with the use of the cash holdings, to facilitate its expropriation and misuse at the expense of the other shareholders. Hence, investors of the Brazilian market may feel more confident investing in Brazilian companies belonging to the New Market, where evidence obtained here, after controlling for the endogeneity, indicates that the existence of only shares with voting rights reduces the misapplication of cash.

Regarding the binary variable ADR, we verified that it did not obtain statistical significance, despite the positive coefficient obtained. On this, Huang et al. (2013) point out that by dividing firms by ADR levels, their results indicate that cross-listed level III ADR firms hold more cash than the others. The authors attribute this to the fact that level III ADRs require the strictest compliance with the North American laws and regulations and this, in turn, represent the highest level of protection and disclosure of information to shareholders. So, the results could be different if we chose to use not only a dummy variable if the firm were issuing ADR at any level, but rather subdividing the sample according to ADR levels.

About the control variables, the proxy of Debt in turn, presented statistical significance at 1%. The result of this variable comes against literature, since a negative association was expected. The same happens to Current Liquidity, with a negative association expected. The results obtained, on the other hand, showed a positive and significant association at the 1% level.

The result for the variable Short-Term Debts was different from that suggested by the literature. We expected a positive association, given that the variable can be substitute of the cash balance, but the result suggests a negative association, which implies that other factors are contributing to this result. The negative result obtained for Net Working Capital, in turn, was in line with the assumptions presented by Opler (1999).

These results differ from expectations that are associated with measures of indebtedness and liquidity, which may suggest a preference for the debt market rather than the equity market for financial funding, which is in line with the ownership concentration and the low development of the capital market in Brazil.

The dummy crisis variable, as expected, obtained a positive association with the cash holdings at a significance level of 1%, which suggests that companies maintained higher cash reserves during the years 2008 and 2009 due to the subprime crisis, which can also be observed in Fig. 1. This result suggests that the maintenance of higher cash holdings may occur due to a possible reduction in the credit availability. The other control variables (Size, Payout, Leverage, Investment Opportunities and ROE), on the other hand, were not statistically significant. Finally, we mention that our results are robust regardless of whether the extreme observations are winsorized.

5. Conclusions

This research expands the literature on cash management by studying the effects of corporate governance practices with listing requirements on cash holdings. The Brazilian case was not the first in the world to create a premium listing. However, it was the first that allowed companies already listed in the market to voluntarily commit themselves to comply with the highest standards, according to the requirements of each Level.

The evidence obtained, after controlling for the endogeneity problem that can arise in cash holding, suggest that there is a reduction of agency conflicts when firms migrate to the New Market, where the last requirement is to issue only voting shares. In firms that issue dual-class shares, in which a small group of controlling shareholders centralizes the decision-making process in their hands, in detriment of other minority shareholders, but without the right to vote, there is great evidence that they make decisions that are not always in line with the interests of other shareholders. The cash holdings is the asset most vulnerable to opportunistic actions. Therefore, the results obtained are consistent with the findings on share classes, where higher cash levels are less valued in firms where there is not only the issuance of voting shares.

The results of this study may be useful for other countries, especially emerging markets, where issuing only voting shares could mitigate the problems related to the misuse of the cash holdings. Thus, firms from these countries could adopt a policy of greater retention of their assets in cash and cash equivalents, when necessary, from the issuance of only shares with voting rights with less concern regarding the misalignment of interest between agent and principal.

Despite the contributions made, this work also has its limitations. These limitations can succeed, for example, due to the non-random sample and composed only by Brazilian firms, as well as by the econometric methods used and by the proxies of the construct corporate governance. Hence, new studies with larger samples should analyze whether the results found here, where the issuance of only voting shares reduce the expropriation of the cash holdings, can also be generalized in new contexts, especially in emerging markets. In addition, researchers can explore the effects of issuing only voting shares and their possible relationship on the reduction of agency conflicts in relation to firms that issue dual-class shares.

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