EFFECTS OF CORPORATE GOVERNANCE ATTRIBUTES ON CASH HOLDINGS FOR NEW AND OLD ECONOMY FIRMS: THE BRAZILIAN CASE

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ABSTRACT
This study investigates possible effects of Corporate Governance attributes on cash holdings policies. These effects are investigated in firms listed as new economy and old economy, due to their different investment opportunities. The classification into old or new economy was done according to that used by Ittner et al. (2003) and Murphy (2003). Corporate cash holding policies can be explained by economic theory, including trade-off and financial hierarchy theory. Trade-off theory postulates that transaction costs and precautionary issues are reasons to hold cash, thus suggesting the existence of an optimal level of cash. Financial hierarchy theory, in turn, based as it is on information asymmetry, posits that firms will hold as much cash as they can on their hands, suggesting there is no such optimal level. Additionally, retention of cash can also be explained by behavioral theory, including agency theory, which postulates that managers have more discretion when firms keep more cash. Four attributes of Corporate Governance, disclosure, board composition and function, ownership structure and control and shareholder rights, were analyzed. The Brazilian Corporate Governance Index (Lopes and Walker, 2008) was used to estimate these attributes. The subjects of investigation were 248 Brazilian companies that had stocks traded on Sao Paulo Stock Exchange during the years of 1998, 2000, 2002, 2004 e 2006. 635 observations by each variable were initially sampled from the Economatica database, but adding corporate governance data reduced the sample to 463 observations by each variable. Wilcoxon nonparametric two-sample test is used in order to show the main differences between old and new economy companies. Additionally, cross-section time-series regressions with fixed year effect investigate possible effects of corporate governance attributes on cash holdings. Four models are investigated using Ordinary Least Squares regressions: (i) only with effects of disclosure attributes on cash holdings (ii) adding effects of board composition and function attributes (iii) incorporating effects of ownership structure and control characteristics (iv) finally, adding effects of shareholder rights. Evidences show that firms listed in new economy keep more cash than firms listed in old economy. Besides, disclosure and ownership structure have a negative effect on cash holdings, suggesting that new economy firms with higher disclosure have more facilities to get an external financing and that minority interests are not correctly protect or that there is a higher conflict between manager and shareholder than minority and majority shareholders in companies listed in new economy.
1. INTRODUCTION

Corporate cash holding policies can be explained by economic theory, including trade-off and financial hierarchy theory. According to Opler et al (1999), trade-off theory postulates that transaction costs and precautionary issues are reasons to hold cash, thus suggesting the existence of an optimal level of cash. Financial hierarchy theory, in turn, based as it is on information asymmetry, posits that firms will hold as much cash as they can on their hands, suggesting there is no such optimal level. Additionally, retention of cash can also be explained by behavioral theory, including agency theory, which postulates that managers have more discretion when firms keep more cash (Chen, 2008).

Jensen (1986) advanced a hypothesis that shareholders will limit access of managers to cash flow in order to avoid agency conflicts. A trade off must be reached, with shareholders providing enough cash for managers to invest in good projects, but no more than necessary, in order to avoid managers having excess benefits at their expenses, a situation where corporate governance mechanisms would become necessary to mitigate conflicts between managers and shareholders. This acts as motivation for studies investigating the effects of corporate governance on firms’ cash holdings.

Dittmar et al (2003) analyzed a sample of more than 11,000 firms from 45 countries, finding that firms in countries where shareholders have no protection hold up as much cash as firms in countries where shareholders have good protection. They also found evidences that investment opportunities and asymmetric information, factors that drive the need for cash holdings, become less important when shareholder protection is poor.

Kalcheva et al (2006) analyzed data for over 5,000 firms from 31 countries and verified that company’s values are lower when external country-level shareholder protection is weak and controlling managers keep high levels of cash. Further, when external shareholder protection is weak, company’s values are higher whenever managers pay dividends. Additionally, under strong external protection conditions, they did not find any relation between cash hold by controlling managers and a company’s value.

Chen (2008) studied the impact of corporate governance on cash holdings policies of firms with different investment opportunities. They separate firms in two groups: firms listed in the new economy segment, which have many investment opportunities at their disposal, and firms listed in the old economy segment, with limited investment opportunities. Managerial ownership, board independence and takeover threat were the dimensions of corporate governance analyzed. Examination of American companies turned up evidence that higher managerial cash holdings tend to reduce cash holdings in firms listed as old economy and higher board independence tend to increase cash holdings in firms listed as new economy.

The present study investigates possible effects of Corporate Governance attributes on cash holdings policies. These effects are verified in firms listed as new economy and old economy, because they have different investment opportunities. Data from Brazilian companies that have their stocks traded on Sao Paulo Stock Exchange in even years between 1998 and 2006 are analyzed.

The choice of Brazil as focus to this study is due to the country’s special aspects. Brazil, according to Anderson (1999), has a weak institutional environment, presents high inflation, volatile real-sector activity, underdeveloped institutions and very high ownership concentration. Therefore, the environment analyzed in this study is peculiar and different from that where some other researches (Chen, 2008; Harford et al., 2005; Dittmar, 2003) were conducted. Additionally, Chong and Lopez-de-silanez (2007) posits that Brazil also has a very weak corporate governance environment.

Due to high ownership concentration in Brazil, the main governance conflict is observed between majority (controlling) and minority shareholders, and not between
managers and shareholders, as the literature suggests. All analysis is done according to this reality.

Four dimensions of corporate governance (disclosure, board composition and function, ownership structure and control and shareholder rights) are analyzed. Board composition and function and ownership structure are dimensioned in a way similar to that used in a prior study by Chen (2008). However, as conflicts in Brazil are observed between majority and minority shareholders, these dimensions are calculated in a different manner. Besides, disclosure and shareholders’ rights dimensions were not present in that study (Chen, 2008). To estimate the four dimensions investigated in the present research, the Brazilian Corporate Governance Index- BCGi (Lopes and Walker, 2008) was used as a proxy for firm level governance.

Evidences show that firms listed in new economy keep more cash than firms listed in old economy, as found in a prior study (Chen, 2008). Adding, new economy firms are riskier than old economy firms, which can be explained by the idea from Chen (2008) that new economy firms involve more uncertain business operation and management. Evidences show also that new economy firms have higher cash flow than old economy firms. On the other hand, old economy firms have higher market value book than new economy firms.

By examining of four dimensions of corporate governance, it was verified that disclosure and ownership structure and control affect negatively cash holdings, while board composition and function and shareholder rights variables do not show significant effect on cash holdings. Thus, evidence suggests that new economy firms with higher disclosure have more facilities to get an external financing and that minority interests are not correctly protect or that there is a higher conflict between manager and shareholder than minority and majority shareholders in companies listed in new economy.

The remainder of this paper is organized as follows: Section 2 argues about theories that try to explain cash holdings, presenting the propositions of this study; Section 3 describes the sample and procedures used to gather data and calculate variables; finally, Section 4 discusses the evidences found and conclusions are presented in Section 5.

2. CORPORATE CASH HOLDINGS AND ECONOMIC AND BEHAVIORAL THEORIES

Corporate cash holding policies can be explained by economic theory, including trade-off and financial hierarchy theory. In the other hand, this retention of cash can also be explained by behavioral theory, including agency theory (Chen, 2008).

Focus on economic, trade-off and financial hierarchy theories bring about differences, mainly about the existence of an optimal level of cash holdings and about the relationship between investment and cash holdings (Kim, Mauer and Sherman, 1998; Opler et al 1999; Dittmar et al, 2003; Chen, 2008).

According to Opler et al (1999), trade-off theory shows that transaction costs and precautionary motives are reasons to hold cash. The transaction costs discussion posits that external financing is more costly than retention of available cash. This happens because costs of external financing involve fixed and variable costs associated with the amount of capital raised. The precautionary motive is related to cash shortages. Firms can be forced to give up on an investment if they have problems of cash shortage. Thus, firms would hold cash until the marginal cost of cash shortage equals the marginal cost of cash holding (Opler et al. 1999).

As pointed out previously, trade-off theory suggests the existence of an optimal level of cash. Financial hierarchy theory, on the other hand, suggests the opposite (there is no such optimal level of cash). This last theory is based on information asymmetry issues and posits that firms will hold as much cash on hand as they can, because costs of external financing, due to this asymmetry, are higher than costs of internal financing.
Behavioral theory is based on agency theory, which says that managers have more discretion when firms keep more cash. Myers and Rajan (1998) explain that managers prefer to hold cash because they can obtain private benefits from cash and cash equivalents, while Papaioannou et al. (1992) explain that firms keep cash as a privilege.

Murphy (2003) sorted listed firms as new economy or old economy. Chen (2008) argues that firms listed as new economy have many investment opportunities available, while firms listed as old economy have limited opportunities. Thus, economic and behavioral theory can be analyzed under the investment opportunities viewpoint.

Accordingly, if old economy firms, with limited investment opportunities, retain a high level of cash, managers could expropriate assets, because the excess of cash would force managers to overinvest. When this happens, the interests of shareholders are damaged (Jensen, 1986). Therefore, when dividend payment occurs, the level of cash will be reduced, also decreasing the agency cost of overinvestment (Jensen et al, 1992). In such case, the level of cash firms retain would be a trade off between agency costs and returns on cash holdings for investments, which is consistent with trade-off theory. About this, Chen (2008) stated that:

The level of cash holdings is thus a trade-off between the expect agency costs of overinvestment and expected return of holding cash for profitable investments. Accordingly, the objective of corporate governance for firms with limited investment opportunities is to ensure that firms maintain appropriate levels of cash, which is more consistent with trade-off theory of cash holding.

However, if new economy firms, with their many investment opportunities, keep a lower level of cash, they can turn up having insufficient money to implement a project, forcing the procurement of external financing. Faced with possibly high financing costs, firms could then give up a profitable investment. When this happens, firms will lose market value, thus impairing shareholders’ wealth. To avoid this kind of problem, firms would tend towards keeping as much cash as they can, an idea consistent with financial hierarchy theory. Boyle and Guthrie (2003) argue that retaining a big amount of cash is essential for potential investments. Chen (2008) supplements and adds:

To benefit from the high returns of these investments opportunities, shareholders would accept high level of cash holdings in firms with abundance of investment opportunities if effective corporate governance protects their interests.

Therefore, as in Chen (2008), the following proposition is advanced:

Proposition1: Effective corporate governance mechanisms reduce the level of cash holdings for old economy firms but increase the level of cash holdings for new economy firms.

Evidences found by Dittmar et al. (2003, p. 113) “provide strong support for the importance of corporate governance in determining corporate cash levels.” Thus, possible effects of Corporate Governance attributes on cash holdings policies, such as disclosure, board composition and function, ownership structure and control and shareholder rights, are analyzed in this study. These attributes are estimated using the Brazilian Corporate Governance Index- BCGI (Lopes and Walker, 2008), which was developed as a proxy for firm level governance.

Decision to improve corporate governance level has a positive effect on firm investment opportunities and a negative effect on private benefits of managers and controlling shareholders (Doidge et al., 2006). New economy firms with attractive investment options may need more external financing, and thus have incentives to disclose information which will allow outsiders to evaluate their economic performance.
Proposition 2: Firms listed in new economy have a better corporate governance level than firms listed in old economy.

2.1 Disclosure and Cash Holdings
When companies publish its financial statements by the required date, following international standards and are audited by one of the “big five” auditing firms, they can be regarded as trying to tell the market that their financial statements are consistent. Such information disclosure increases accounting informational value and is linked to transparency, which reduces information asymmetry between managers and investors. Additionally, as Brazil has a high ownership concentration, high disclosure also decreases information asymmetry between minority shareholders and controlling shareholders, who are often the managers or very close to them.

In such cases, old economy firms, which have limited investment options, will likely keep a lower level of cash in order to ensure shareholders that managers will not indulge in overinvesting, an action that can turn out as damaging to shareholders’ interests. New economy firms, with many investment options, will likely retain higher levels of cash in order to ensure shareholders will not lose profitable investment opportunities, due to higher external financing costs. So, as long as new economy firms disclose transparent information, shareholders will accept that they keep cash.

Proposition 3: Disclosure shows a positive effect on corporate cash holdings for new economy firms and a negative effect for old economy firms.

2.2 Board Composition and Function and Cash Holdings
The board of directors can be regarded as an internal governance mechanism, and its composition is very important. The board monitors management decisions in order to ensure shareholders’ wealth. Board composition and functioning is a proxy for its level of independence and effectiveness. This dimension of corporate governance is positively linked to the quality of accounting statements and reports. When boards are more effective, they will probably ask for more relevant accounting numbers and will try to mitigate manipulations. In this way boards reduce conflicts between managers (often majority shareholders) and minority shareholders. These conflicts happen due to incentives managers have to disclose information favorable to them, being more likely to disclose good news rather than bad news. Board acting can constrain the discretion of managers, and therefore, when effective, will ensure that firms will invest correctly, using cash holdings in profitable projects that increase firm value.

As previously pointed out, new economy firms have more investment opportunities, needing more cash than old economy firms. Thus, better board composition and functioning would drive new economy firms towards higher levels of cash, and old economy firms towards lower levels of cash.

Proposition 4: Board composition and functioning shows a positive effect on corporate cash holdings for listed new economy firms and a negative effect for old economy firms.

2.3 Ownership Structure and Control and Cash Holdings
Brazil presents a very high ownership concentration (Anderson, 1999). According to Lopes & Walker (2008) this leads to the major governance conflict in Brazil being between controlling and minority shareholders, and not between managers and shareholders as suggested by traditional corporate governance literature.
Minority shareholders interests may be impaired by majority shareholders, the former being expropriated in many different ways, such as sale of assets below market value to “friendly” companies and implementation of projects that earn private benefits to company executives (Luz, 2000).

Therefore, ownership structure and control are proxies for the level of ownership dispersion. According to Lopes and Walker (2008) credibility of accounting information is diminished when a controlling owner is entrenched by his voting power. This happens because majority shareholders can disclose information seeking only to protect their own wealth and can also expropriate minority shareholders in different ways, as shown by Luz (2000).

Corporate governance, in this way, aims to protect minority shareholders’ interests. In such situations, shareholders will accept higher levels of cash for firms listed as new economy, if their interests are adequately protected, and they will prefer lower levels of cash for firms listed as old economy, with their limited investment prospects.

Proposition 5: Ownership Structure and Control shows a positive effect on corporate cash holdings for new listed new economy firms and a negative effect for old economy firms.

2.4 Shareholder Rights and Cash Holdings

Shareholders’ rights express the degree of effective protection provided by Brazilian firms to their minority shareholders, such as voluntarily granting rights for minority shareholders beyond those required by law. Lopes and Walker (2008) assumed that these firms are less likely to expropriate minority shareholders.

Minority shareholders want their rights to be assured. According to Chen (2008) corporate governance aims at ensuring that firms with limited investment opportunities (old economy) retain an appropriate level of cash. For instance, when a company’s statute establishes arbitrage as a way to solve conflicts and warrants additional rights beyond those required by law, the company can be regarded as trying to ensure shareholders’ rights.

Therefore, once shareholders have their rights safeguarded they will prefer that firms listed as old economy keep a lower level of cash. However, shareholders understand that firms listed as new economy, with many investment options available, need to keep more cash, in which case shareholders, having their rights safeguarded, can accept that such firms retain a higher level of cash.

Proposition 6: Shareholder rights shows a positive effect on corporate cash holdings for listed new economy firms and a negative effect for old economy firms.

3. DATA AND SAMPLE

Firms in this study are sorted as new economy or old economy, like in a prior study by Chen (2008). The classification was done according to that used by Ittner et al. (2003) and Murphy (2003). In these studies, computer, software, internet and telecommunications companies are considered as new economy firms. Traditional durable and nondurable manufacturing companies, on the other hand, are considered as old economy firms. The present study embraces 248 firms listed in Bovespa during the years of 1998, 2000, 2002, 2004 e 2006. 635 observations by each variable were initially sampled from the Economatica database, but adding corporate governance data reduced the sample to 463 observations by each variable.

3.1 Research Design and Variable Definition
Descriptive statistics and results of Wilcoxon nonparametric two-sample test are presented in Table 1, in order to show the main differences between old and new economy companies. In Table 2, results of cross-section time-series regressions with fixed year effect are shown, investigating possible effects of corporate governance attributes on cash holdings. Four models are investigated using Ordinary Least Squares regressions: (i) only with effects of disclosure attributes on cash holdings (ii) adding effects of board composition and function attributes (iii) incorporating effects of ownership structure and control characteristics (iv) finally, adding effects of shareholder rights.

Cash holdings, measured as a ratio of cash and cash equivalents by total assets (Chen, 2008), is the dependent variable on these regressions. Independent variables, related to corporate governance and economic control, are defined in the next section.

3.2 Corporate Governance Index

The BCGi - Brazilian Corporate Governance Index (Lopes & Walker, 2008) is used to measure firm governance level. This index was built using a questionnaire that comprised fifteen questions, answered through publicly available sources. Answers are binary, so the score will be one when the firm complies with good governance aspects and, conversely, will be zero otherwise. Disclosure, board composition and function, ownership structure and control and shareholder rights are the four governance characteristics this index embraces. A simple arithmetic mean of the binary scores obtained in each answer is used as a mean score for each characteristic and also for all of them taken as a whole. The higher the obtained index, the better is considered the governance.

Questions used to measure disclosure attributes were: (i) Does the company publish its financial statements by the required date? (ii) Does the company publish its financial statements according to international standards (US-GAAP or IFRS)? (iii) Is the company audited by one of the “big five” auditing firms?

Board composition and function attributes were evaluated through these questions: (i) Are the Chairman of the Board and the CEO not the same person? (ii) Is the Board not primarily composed of insiders? (iii) Is the size of the Board between 5 and 9 members, as suggested by the Brazilian Institute of Corporate Governance? (iv) Do members of the Board have consecutive one-year terms as suggested by the Brazilian Institute of Corporate Governance? (v) Does the company have a permanent Audit Committee?

Questions regarding ownership structure and control are: (i) Do the controlling shareholders own less than fifty percent of voting shares? (ii) Is the percentage of voting shares higher than eighty percent of the total? (iii) Is the ratio between cash flow rights and voting rights higher than one? (iv) Is free float larger or equal to that required by the São Paulo Stock Exchange for its New Market segment (25%)?

Questions about shareholder rights are: (i) Does the company statute establish arbitrage as a way to solve conflicts? (ii) Does the company statute establish rights in addition beyond those required by Law? (iii) Does the company grant tag along rights beyond those required by Law?

3.3 Economic Control Variables

Empirical models in the present study use a number of economic control variables that affect cash holdings. These variables are used to better estimate the effect of corporate governance on cash holdings. Cash Flow, Tobin’s Q, Firm Size, Capital Expenditure, Dividends, Leverage, Risk and Age are used to control the sample, as in Chen (2008).

According to Opler et al. (1999), Cash Flow can be estimated as earnings before interests, taxes, depreciation and amortization, less interests, taxes and dividends, the result being divided by total assets.
The Tobin’s Q model (Tobin, 1969) aims to connect market value with firm’s investment. Q is defined as a ratio of a firm’s market value to the replacement cost of its assets. Thus, theoretically, firms with Q higher than one, would be inclined to invest in new projects, because they want to maximize their market value. Such would happen until the level of Q reaches one. At this point of equilibrium, firms would already have to drain their last drop of capital for new investments. In the other hand, firms with Q below one, would be inclined to sell their assets in order to return to the equilibrium (Dornbusch, Fischer, Startz, 2003). It is difficult to estimate Tobin’s Q due to replacement costs measurement issues. Thus, in this study, the ratio of market value to book value is used as estimation of Tobin’s Q. Such an approximation was also used in prior studies (Denis, 1994; Chen & Ho, 1997; Chen, Ho, Lee & Yeo, 2000; Chen, 2008).

As it is common for larger firms to need more capital to maintain their operations (Chen, 2008), we control for firm size, defined as the natural logarithm of total assets. Capital expenditure is measured as the annual variation of permanent assets in the Balance Sheet. Net working capital is calculated as current assets less cash and equivalents, divided by total assets.

In addition, a dummy variable is defined for dividends. Whenever a firm paid dividends in a given year, this dummy variable is set to one. Conversely, if dividends were not paid in a given year this dummy variable is set to zero. This variable “measure the effect of the dividend policy on cash holdings” (Chen, 2008, p. 435).

Leverage estimates the portion of debt on assets of a firm. It is measured as the ratio of long-term debts to total assets. The bigger the debt, higher will be the financial risk.

The Beta of Capital Asset Pricing Model is used as proxy for firm risk. And finally, Age is calculated as the numbers of years the company has stocks traded on Stock Exchange.

4. EMPIRICAL RESULTS

Table 1 exhibits descriptive statistics of variables for listed new economy and old economy firms in even years between 1998 and 2006. The average cash for firms listed in new economy accounts for about 13.86% of total assets, greater than 8.68% that represents the average cash for firms listed in old economy. Chen (2008) also found that new economy firms keep more cash than old economy firms. No inferences can be done about disclosure, board and function, ownership and structure, BCGI, leverage, dividend and age, because the p-value of Wilcoxon nonparametric two-sample for theses variables do not reject the hypothesis of equal means.

Besides, Beta is used as proxy for firm risk and shows that firms listed in new economy are riskier than old economy firms. This phenomenon can be explained by the idea from Chen (2008) that new economy firms involve more uncertain business operation and management. Evidences show also that new economy firms have higher cash flow than old economy firms. On the other hand, old economy firms have higher market value book than new economy firms.

| TABLE 1 | STATISTICS DESCRIPTION: LISTED NEW ECONOMY VERSUS OLD ECONOMY FIRMS |
|---------|-------------------------------------------------|-----------------|
|         | New Economy                                      | Old Economy      | p-value of Wilcoxon test (new-old>0) |
|         | N Mean Median Standard Deviation N Mean Median Standard Deviation |
| Dependent Variable | | | |
| Cash Holdings | 52 | 0.1386 | 0.0916 | 0.1246 | 411 | 0.0868 | 0.0418 | 0.1133 | 0.0001 |
| Explanatory variables | | | |
| BCGIdisc | 52 | 0.4423 | 0.3333 | 0.2699 | 411 | 0.4209 | 0.3333 | 0.2897 | 0.6850 |
| BCGIboard | 52 | 0.4346 | 0.4000 | 0.2821 | 411 | 0.4141 | 0.4000 | 0.2670 | 0.6366 |
This table exhibits the statistics of variables for listed new economy and old economy firms. Cash Holdings (Dependent variable) is calculated as a ratio of cash and cash equivalents to total assets. New Economy variable (Neweco) equals one if the firm is listed in new economy. Disclosure (BCGIdisc), Board composition and functioning (BCGIboard), Ownership structure and control (BCGIprop) and Shareholders rights are calculated based on Brazilian Corporate Governance Index (Lopes and Walker, 2008). CF is cash flow. MBA is market-to-book. Size is the natural log of total assets. Capexp is capital expenditure. LEV represents the portion of long term debts on assets of a firm. Div dummy equals one if a firm pays dividend in a given year. Beta of CAPM is used as proxy for firm risk. Age is the years that a firm has been listed on a Stock Exchange.

Table 2 shows the determinants of cash holdings in cross-section time-series regressions with fixed year effect. Four models are investigated: (i) only with effects of disclosure attributes on cash holdings (ii) adding effects of board composition and function attributes (iii) incorporating effects of ownership structure and control characteristics (iv) finally, adding effects of shareholder rights.

The positive coefficient of the new economy dummy (Neweco), respectively 0.0985, 0.0969, 0.1254 and 0.1253, for each model, show that firms listed in new economy tend to retain more cash than firms listed in old economy. The coefficient Neweco is shown to be statistically significant at 1% in all models.

The dimension disclosure of BCGI index is shown to be statistically significant at 10% in all models. Thus, higher the disclosure level, higher will be the cash holdings. The coefficient of disclosure for new economy firms (Neweco* BCGIdisc) is negative and statistically significant at 10% in model 1. Thus, higher the disclosure for firms listed in new economy, lower will be the cash holdings. This evidence refuses the proposition 3. This phenomenon can be explained by idea that new economy firms with attractive investment options may need more external financing, and thus have incentives to disclose information which will allow outsiders to evaluate their economic performance. Probably, when new economy firms have a better disclosure, they can get an external financing easier than if they do not have a better disclosure. Thus, new economy firms with good disclosure will keep a lower level of cash, because they can get external financing.

Board composition and function and shareholder rights variables do not show significant effect on cash holdings. Then, propositions 4 and 6 are refused. The coefficient Ownership structure and control for new economy firms (Neweco* BCGIprop) is negative and statistically significant at 5% in model 3 and at 10% in model 4. As the coefficient is negative, the proposition 5 is refused. This phenomenon can be explained by the idea that shareholders will accept higher levels of cash for firms listed as new economy, if their interests are adequately protected, and maybe their interests are not protected. Besides, minority shareholders can prefer to receive dividends than they do not receive dividend to firms invest cash in a new projects. Adding, when the level of ownership dispersion is high, conflicts between minority and majority shareholders is lower, but maybe in companies listed in new economy the conflict between manager and shareholder can be also relevant.
Control variables, except dividend dummy, do not show significant effect on cash holdings, differently from Chen (2008). The coefficient of dividend dummy (Div dummy) is positive and statistically significant at 1% in all models. This means, that higher dividend firms pay, higher cash holdings.

By examining of four dimensions of corporate governance and by verification that only disclosure e ownership structure and control affect negatively cash holdings, the proposition 1 can not be accept.

The coefficient of intercept is positive and statistically significant in all models, suggesting that there is minimum level of cash that is retained by firms.
### TABLE 2  
EFFECTS OF CORPORATE GOVERNANCE ON CASH HOLDINGS – STATIC PANEL

<table>
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<th>Model (3)</th>
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<tr>
<td><strong>N°observations</strong></td>
<td>463</td>
<td>463</td>
<td>463</td>
<td>463</td>
</tr>
<tr>
<td><strong>Adjusted R²</strong></td>
<td>6.25% 9.32%</td>
<td>6.44% 6.18%</td>
<td>6.44% 6.18%</td>
<td>6.44% 6.18%</td>
</tr>
</tbody>
</table>

Determinants of cash holdings are showed in this table. Thus, cross-section time-series regressions with fixed year effect were estimated. Cash Holdings (Dependent variable) is calculated as a ratio of cash and cash equivalents to total assets. New Economy variable (Neweco) equals one if the firm is listed in new economy. Disclosure (BCGIdisc), Board composition and functioning (BCGIboard), Ownership structure and control (BCGIprop) and Shareholders rights are calculated based on Brazilian Corporate Governance Index (Lopes and Walker, 2008). CF is cash flow. MBA is market-to-book. Size is the natural log of total assets. Capexp is capital expenditure. LEV represents the portion of long term debts on assets of a firm. Div dummy equals one if a firm pays dividend in a given year. Beta of CAPM is used as proxy for firm risk. Age is the years that a firm has been listed on a Stock Exchange.

*p<.10, **p<.05, ***p<.01

OLS, ordinary least squares.

Source: Author

### 5. CONCLUSION

By examining of Brazilian companies that had stocks traded on Sao Paulo Stock Exchange in even years between 1998 and 2006, evidences show that firms listed in new economy keep more cash than firms listed in old economy, as found in a prior study (Chen, 2008).

Six propositions were done in this study and they embrace four dimensions of corporate governance, disclosure, board composition and function, ownership structure and control and shareholder rights. The Brazilian Corporate Governance Index (Lopes and Walker, 2008) was used to estimate these dimensions.
The proposition 1 posits that effective corporate governance mechanisms reduce the level of cash holdings for old economy firms but increase the level of cash holdings for new economy firms. However, in this study was verified that two dimension of corporate governance affect cash holdings. Besides, these dimensions, disclosure and ownership structure and control, affect negatively cash holdings for firms listed in new economy. Thus, the proposition 1 can not be accept.

In the other hand, no inferences can be done about BCGI Index because the p-value of Wilcoxon nonparametric two-sample for this variable does not reject the hypothesis of equal means. Then, the proposition 2 can be not accepted.

The proposition 3 says that disclosure shows a positive effect on corporate cash holdings for new economy firms and a negative effect for old economy firms. However, evidence refuses the proposition 3, because disclosure for firms listed in new economy affect negatively cash holdings. Thus, higher the disclosure for firms listed in new economy, lower will be the cash holdings. This phenomenon can be explained by idea that new economy firms with attractive investment options may need more external financing, and thus have incentives to disclose information which will allow outsiders to evaluate their economic performance. Probably, when new economy firms have a better disclosure, they can get an external financing easier than if they do not have a better disclosure. Thus, new economy firms with good disclosure will keep a lower level of cash, because they can get external financing.

The proposition 4 posits that board composition and functioning shows a positive effect on corporate cash holdings for listed new economy firms and a negative effect for old economy firms. However this proposition was also refused, because results show that board composition and function do not show significant effect on cash holdings.

As ownership structure and control for new economy firms affect negatively cash holdings, the proposition 5 is refused. This phenomenon can be explained by the idea that shareholders will accept higher levels of cash for firms listed as new economy, if their interests are adequately protected, and maybe their interests are not protected. Besides, minority shareholders can prefer to receive dividends than they do not receive dividend to firms invest cash in new projects. Addicting, when the level of ownership dispersion is high, conflicts between minority and majority shareholders is lower, but maybe in companies listed in new economy the conflict between manager and shareholder can be also relevant.

The proposition 6 posits that shareholder rights shows a positive effect on corporate cash holdings for listed new economy firms and a negative effect for old economy firms. However this proposition was also refused, because results show that shareholder rights do not show significant effect on cash holdings.

Besides, evidences show that new economy firms are riskier than old economy firms, which can be explained by the idea from Chen (2008) that new economy firms involve more uncertain business operation and management. It was found also that new economy firms have higher cash flow than old economy firms. On the other hand, old economy firms have higher market value book than new economy firms.

Addicting, control variables, except dividend dummy, do not show significant effect on cash holdings, differently from Chen (2008). Dividends affect cash holdings. This means, that higher dividend firms pay, higher cash holdings. Other evidences suggest that there is minimum level of cash that is retained by firms.

Investigating the consequences of high cash holdings in Brazil is an important area of future research.

REFERENCES

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