

# CAPITAL STRUCTURE: EMPIRICAL EVIDENCES OF PUBLIC AND NON-PUBLIC FIRMS IN BRAZIL

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## Abstract

This study seeks to contribute to the literature through research focused on companies listed and not listed on the stock exchange. A survey was used to identify the capital structure of Brazilian companies and relate the results to the Brazilian credit market. The results indicate that most of the investigated companies prefer not to issue convertible debt, as well as the share of firms issuing common shares was small. It was found that firms do not have preference between long-term and short-term debt. Finally, it was also noted that private companies have great concern about the volatility of earnings and cash flow. The differential of this research was to analyze the practices adopted by both public companies and privately held.

**Keywords:** Capital Structure, CFO, Survey

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## 1 Introduction

Capital structure treats about financing firm activities, which can be executed by debt, shares or other financial instruments. Modigliani and Miller (1958, 1963) developed a theoretic model with contributions that aim to explain structure capital decisions have been added over time. Inside this model, some theories are already established, as Static Trade-Off Theory, Pecking Order Theory and asymmetric information. Recently, hierarchy theory was added as a description of capital structure choice.

Meanwhile the fast theory development, empirical research has presented significant space for contributions. One part of the literature has applied surveys as a research instrument to compare practice and theory. The most famous study related to this field is Graham e Harvey (2001). This study analysis corporate finance decisions inside a sample of 392 CFOs in United States, focusing about the importance of theoretical factors over capital budgeting. Bancel and Mitto (2004) analyze capital structure decisions made by 87 CFOs from 16 European countries. The limited sample present on this research didn't allow specific results from each country. Graham and Harvey searched for public listed and private firms. Bancel and Mitto focused on a publicly listed firms sample.

There is a gap on empirical studies related to the theme in Brazil. Santos, Junior and Cicconi (2009) concluded a research by questionnaire application to a population of 356 non-financial active listed firms. From this population, 40 firms were analyzed to investigate the main factors related to long term resources choice.

They found that opportunism was considered by 13% of companies, while the adoption of a capital structure-goal was to half of the sample option. The theory of funding sources hierarchy was the choice of 28% of the companies analyzed. To 23% of the sample transaction costs were considered the most important factor that affects the formation of the capital structure. This data is consistent with the importance of the interest in the choice of funding sources, as well as factors such as financial flexibility, rating and tax benefits of debt, which also had importance attached by the companies in the sample in the composition of its capital structure. Decourt and Procianny (2009) developed an extensive questionnaire to investigate how the managers of listed Brazilian companies determine their dividend policies. A total of 65 managers in the survey. They identified that the final decision on dividends is the board of directors. The main factors analyzed to determine the dividends are net income and cash flow. In addition, the authors come to the conclusion that the dividend policy adopted by companies is not defined only in favor of shareholders, generating a kind of conflict of interest between them and the executive.

This study aimed to contribute to the literature through a research directed to the listed companies not listed on the stock exchange. In this sense, the objective was to study the forms of indebtedness of Brazilian companies and relate the results with the Brazilian credit market. For this, a survey with questions that might identify these practices was conducted. The study sample included CFOs of private companies representing a wide range of industries, geographic areas and revenues. The

remainder of this paper is structured as follows: section 2 describes the literature related to the capital structure; Section 3 describes the methodology used at work; Section 4 presents the sample, section 5 describes the results; Section 6 concludes.

## **2 Capital structure**

The way companies make their capital structure decisions has been one of the most extensively researched areas in corporate finance. Since the seminal work of Modigliani and Miller (1958) on the capital structure irrelevance in the investment decision, a rich theoretical literature has emerged on the optimal choice of the capital structure using models with different assumptions. Some of the best known theories in this area are: the trade-off theory that says that the choice of capital structure is related to traditional factors such as tax advantage and the potential bankruptcy cost given the degree of the company's leverage and theory of asymmetric information in which the debt or equity is used as a signaling mechanism or strategy tool.

Although there are many studies on the capital structure of listed companies, there are few studies on companies not listed on the stock exchange. Bancel and Mitto (2003) conducted a survey on the choice of capital structure and its determinants with business managers in seventeen European countries. They show that the financial flexibility, credit ratings and tax benefit of debt are the most important factors influencing the debt policy, while the dilution of earnings per share is the most important concern of the company to make shares. The research analysis also found evidence that the level of interest rates and stock price are important variables in the debt choice and the time to make shares, respectively. Manoj (2002) gives a survey of CFOs of 81 companies from India to discover the practices of corporate finance in relation to capital budgeting decisions, cost of capital, capital structure and dividend policy decisions. It shows that large companies and those of growth following the EVA maximization goal more than small companies and those of low growth. Small businesses use Gordon's dividend discount model to estimate the cost of equity. It also shows that the average of the industry beta is the most popular measure of the systematic risk. In addition, profits are the preferred source of financing for activities, followed by debt and shares. Finally, it shows strong evidence for the Pecking Order theory in India. Dirk, Kong and Kees (2005) present the results of an international survey of 313 CFOs on the choice of capital structure. They document several interesting insights into how theoretical concepts are being applied by professionals in the UK, Netherlands, Germany and France. The results show the presence of Pecking Order. At the same time, this behavior is not seen in certain situations by considerations of asymmetric information. Static trade-off theory is

confirmed by the importance of a debt ratio target that companies adopt in general, but also specifically for tax purposes and bankruptcy costs. They also find that non-listed companies differ in many aspects of listed companies, for example, listed companies use the price of its shares to the time to decide if they will do new issues.

Alan, Vivien and Jane (2004) report a comprehensive survey of corporate financing and decision-making in 192 listed companies in the financial market in the UK. They find that firms are heterogeneous in their capital structure policies. About half of the companies seeking to maintain a level of target debt, are consistent with the trade-off theory, but 60% say they follow a financing hierarchy, according to the theory of Pecking Order. These two theories are not mutually exclusive by respondents as views, as some companies adopt (at least partially) the two strategies, while a significant number of companies does not seem to follow any of these strategies. Similarly, the current leverage levels encourage a greater focus on specific issues such as the projected cash flows, credit agreements and tax benefits. Finally, they show that the determinants theoretical arguments in the debt level are widely accepted by respondents, in particular, the importance of the tax benefit, financial difficulties, agency costs and, also, at least implicitly, information asymmetry.

Robb and Robinson (2008) analyze how new companies finance their costs in its initial period of activity. Surprisingly, the authors found considerable use of foreign capital in most of the companies surveyed, revealing how an organized and regulated credit market is crucial for companies that began operating recently. In addition, it was observed that most of these new companies using equity funded by its owner at first, and to resort to foreign capital, they often choose to get it in debt format. This analysis reaffirms the concept involved in the Pecking Order Theory of Myers and Majluf, but Robb and Robinson review on how the analysis of this theory was conducted as regards related to the lack of details regarding how and from who this capital is extracted.

## **3 Methodology**

The method used on this study to obtain the data base was a survey. The questions tried to identify corporate finance practices in Brazil, focusing on the capital structure related to listed and non-listed firms. This study searched for answers about the debt policy used by these firms. The questionnaire had an initial proposal to identify the general profile of the CFOs and the general profiles of the companies, because some information related to their activity and age are very important to define their capital structure. Another intention of the questionnaire was to discover factors related to the debt structure using multiple choice questions to have better information about the decisions taken by the firms.

The questionnaire had the same layout as the one used by Graham and Harvey, but some points were modified to make it more suitable to the Brazilian scenario.

#### 4 Data

The research sample consisted of CFOs of large Brazilian companies having no restriction on the activity sector of these companies. The selected companies may be listed or not, so we can analyze, for example, if there is any influence of the shareholders on each company financial policies and debt policies. The survey was conducted through electronic questionnaire with 97 CFOs. We received the answers from 23 CFOs with a fully completed survey. This is

equivalent to 20.71% of the total population considered for the research. Decourt and Procionoy (2009) hadn't a high percentage of completed questionnaires (23.98% of 271 questionnaires originally sent). This percentage is related to the difficulty of contacting CFOs.

The final sample consists of 23 CFOs who responded first to the individual profile issues. At this stage of the questionnaire, CFOs were asked about age, gender, education, city and country of origin, and the time they are occupying the current position and the time working for the related company. The data regarding the responding profiles are presented in Table 1.

**Table 1.** CFOs' profile

<b>Mean Age</b>	47 years
<b>Gender</b>	88% Male 12% Female
<b>City of Origin</b>	76% - São Paulo 24% - Country
<b>Country of Origin</b>	Brazil
<b>Schooling</b>	Formal Degree (Accounting Science, Business Administration and Law) MBA( Energy Management, Administration in Energy Business, Economics, Finance and Marketing) Master-Degree ( Accounting Science and Controllershship)
<b>Average time on current position</b>	6 years
<b>Average time on current company</b>	10 years

The above information shows that, overall, companies rely on professionals with good experience, which can be seen through the mean age and level of education. This happens because the majority has advanced training in business areas (Accounting 50% 33% Administration and Economics 17%). We also noted that 88% of CFOs in our sample are male, 76% of the total come from the city of São Paulo, while the remaining 24% come from other cities. Figure 1 shows that most (82%) of CFOs surveyed have MBA and 18% master degree.

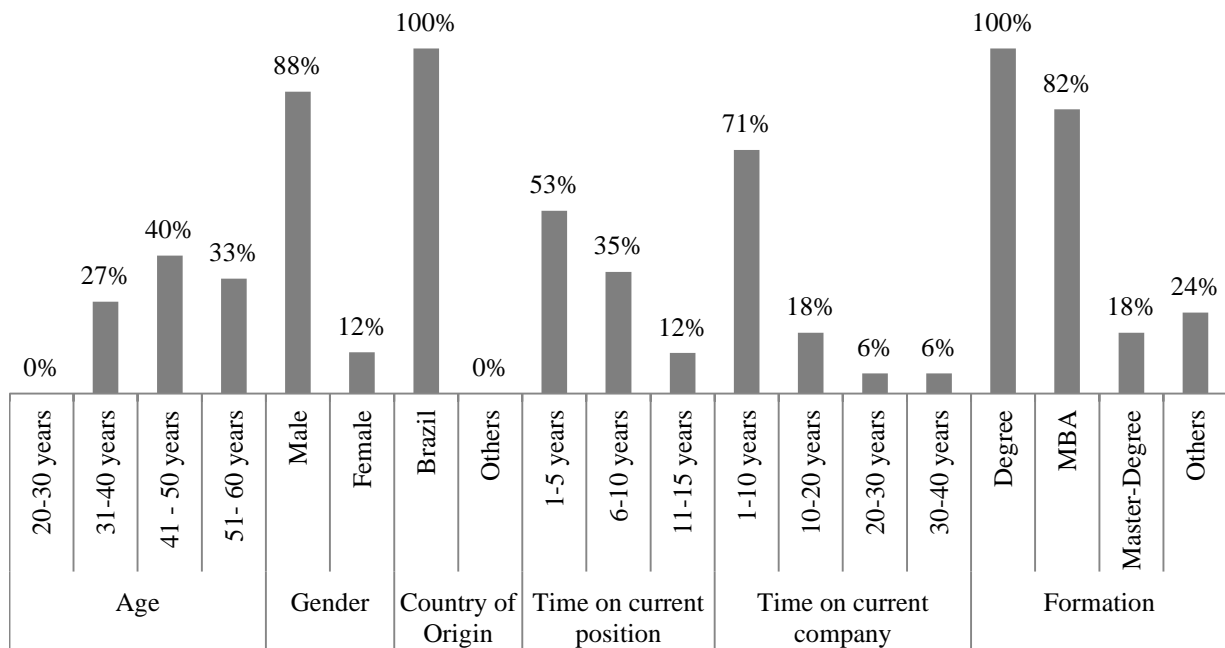
We also observed that the mean time of occupancy on the position is around 6 years old, short compared to the mean time working for the respective company, which is around 10 years. This shows that companies have chosen, professionals who have a history of activity in the company. The command of the company's financial matters turns out to be a career path, and that hiring an expert specifically for this position turns out to be a practice not very widespread among the responding companies.

After this step, respondents answered questions about the profile of the companies in which they exert their function. Questions about the firms listing

(Listed or not), the company's origin and its age. In addition, we obtained information about the financial aspects, such as total assets, total net revenue, total net profit, shareholders' equity and total debt. Considering the valid responses, we observe the following data related to "General Profile of the Companies" in Table 2.

The companies related to the CFOs are mostly private and not listed. Also, they have in general more than 50 years of activity, with average assets of almost R\$ 8,500.00 million, average net revenue of more than R\$ 3,552.20 million, average net profit of R\$ 153.43 million, average equity of R\$ 5,185.34 million and average debt of R\$ 4,134.58 million. Figure 2 shows the general characteristics of companies, among them the economic sector in which they operate. The division of these sectors was structured based on the classification found in the BM & F Bovespa site. With this division, we can see that the majority belongs to the public utility sector (27%). Agro-industry, basic materials, industrial goods and others are represented by 18% each.

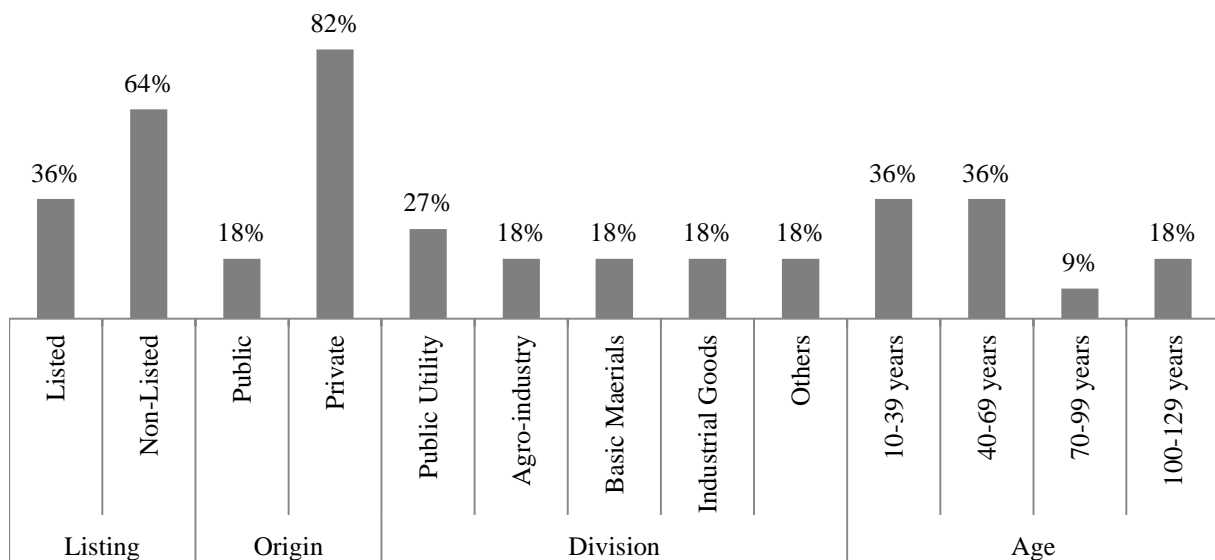
**Figure 1.** CFOs' general profile



**Table 2.** Companies' profile

<b>Listing</b>	64% Listed 36% Non-listed
<b>Origin</b>	82% Private 18% Public
<b>Average age</b>	52 years
<b>Average Assets</b>	R\$ 8.456,75 millions
<b>Average Net Revenue</b>	R\$ 3.552,20 millions
<b>Average Net Profit</b>	R\$ 153,43 millions
<b>Average Equity</b>	R\$ 5.185,34 millions
<b>Average Debt</b>	R\$ 4.134,58 millions

**Figure 2.** Companies' profile

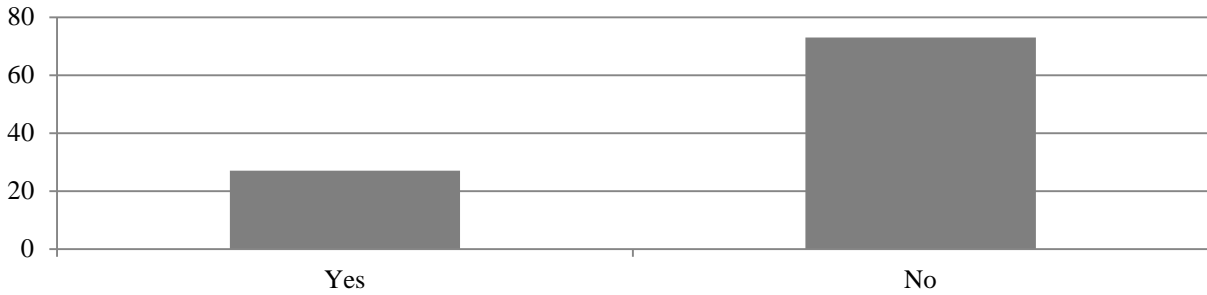


Finally, Figure 2 also shows that the majority (64%) of companies are not listed on BM&F Bovespa. The lack of use of this mean of capitalization by the studied companies indicates a situation which will be highlighted in addressing the considerations of CFOs, as their weights on the capitalization of their firms.

### 5 Empirical results

The Managers were asked about the issue of convertible debt. In this situation, the company's creditor can exercise the role of investor by issuing this type of debt. Figure 3 shows that only 27% of respondents viewed the use of convertible debt, proving the low practice of issuing such debt between the companies in our sample.

**Figure 3.** Convertible debt issue

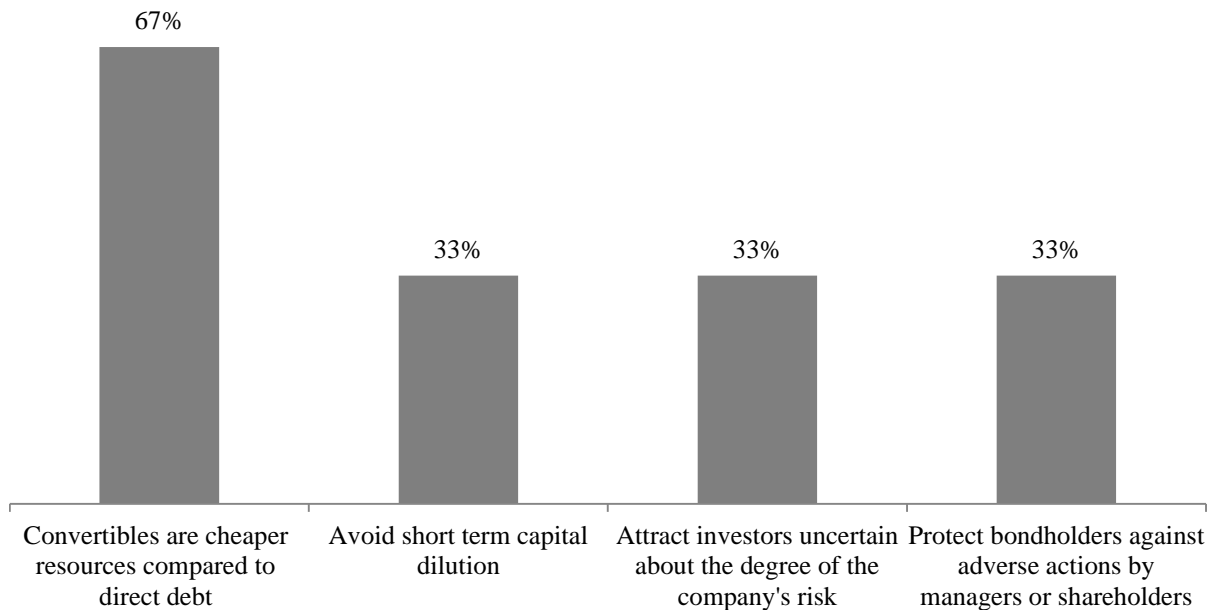


The main factor mentioned among those who claim to issue convertible debt is related to its low cost in comparison with the direct debt, as we can see in the chart 4. This result may be linked to size differences between the firms in our sample. The lower cost to the convertible debt issue is possibly related to the indebtedness of the companies, and for the smaller ones this option may not be as advantageous as it is for large ones. For the second

case, the issuance of this type of debt can be an interesting option, given its higher debt.

Noting the information obtained in the study of Graham and Harvey (2002), we observed that the main factor that leads to issuance of convertible debt is related to the cost, because it is an inexpensive way to issue common shares. This option was not recalled by any of the respondents in our survey, as the major concern of CFOs seems to focus around the comparison of the types of debt (convertible or direct).

**Figure 4.** Factors related to the convertible debt issue



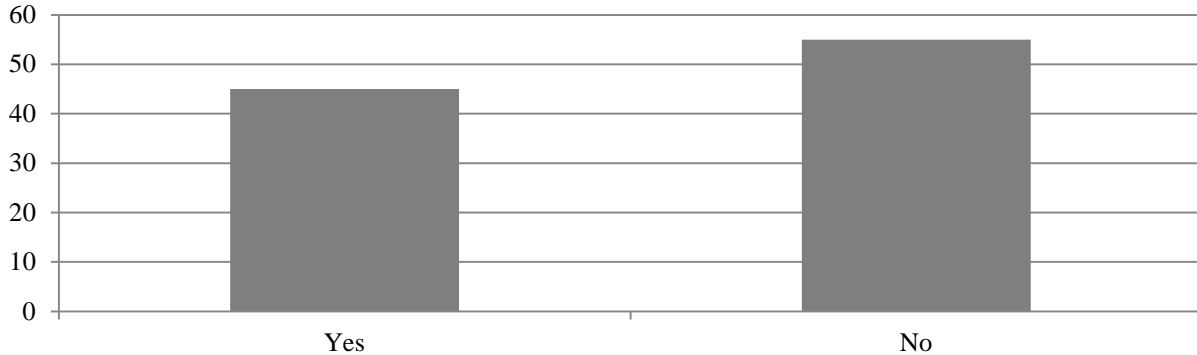
When asked about the issue of common shares, 45% responded positively to the question, reporting that this choice is linked to the amount by which the

company's shares are valued (or devalued) by the market, the maintenance of the debt-equity, dilution of the participation of certain shareholders and for this

type of action be the cheapest source of funds, as shown in the figures 5 and 6. These figures also indicate that the participation of shareholders at

General Meetings of the companies occurs in almost half of the surveyed companies.

**Figure 5.** Common stock issuing

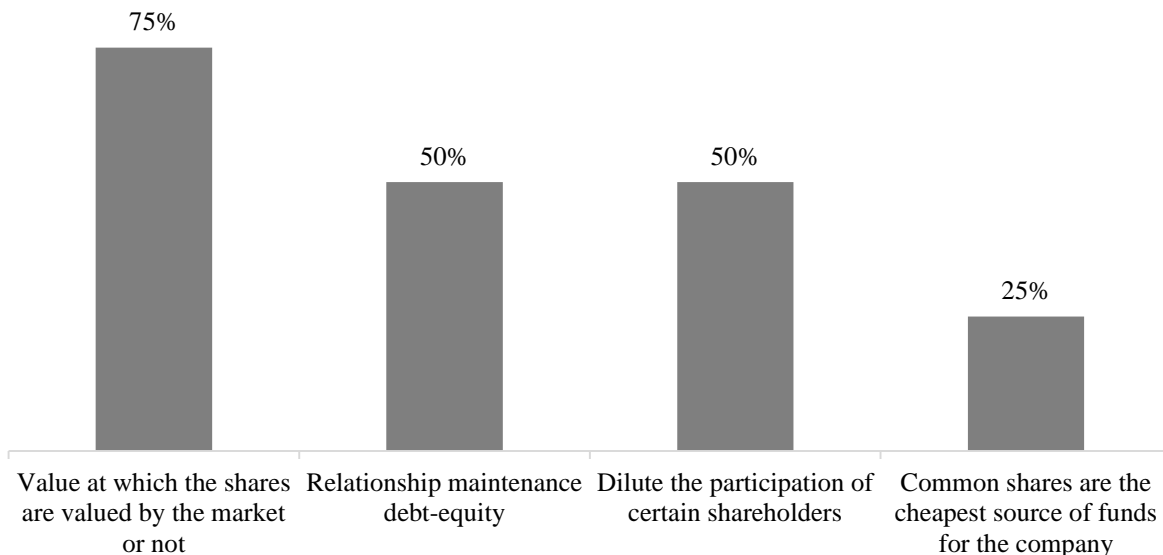


Thus, it is noted that in more than half of the companies, the vote of shareholders becomes impossible by the lack of common shares. Noting the proportion of issuance of common shares issued by the companies surveyed, we note that most of them choose not to provide space for its decisions suffer certain influences of shareholders. In this case, the relationship between shareholder and company basically exists by the investment made by the first and the payment of dividends, held by the second mentioned agent.

of earnings per share, or the division of the company's profits by the number of shares issued by it. Our results show that CFOs of Brazilian companies do not consider this type of compensation as something important for the decision of issuing common shares. The only common factor for the scenarios of the two studies was the maintenance of the debt / equity. This point proves itself important while companies constantly seek an optimal level of debt and equity. If a company issues too much debt, it can generate default in the future as to rely only on equity may limit the company's growth, compared to the possibility of issuing common shares

In their article Graham and Harvey (2002) the most remembered factor by the CFOs was the dilution

**Figure 6.** Factors that influence the issuance of common shares



According to Modigliani and Miller (1958), decisions related to the debt don't affect the investment decisions of companies, and which will define, in fact, the company's value is the second factor and not the first. The final section of the

questionnaire involved questions related to debt policy adopted by the companies. CFOs were asked about the choice between short and long term debt, factors that would affect this decision, as well as other points that

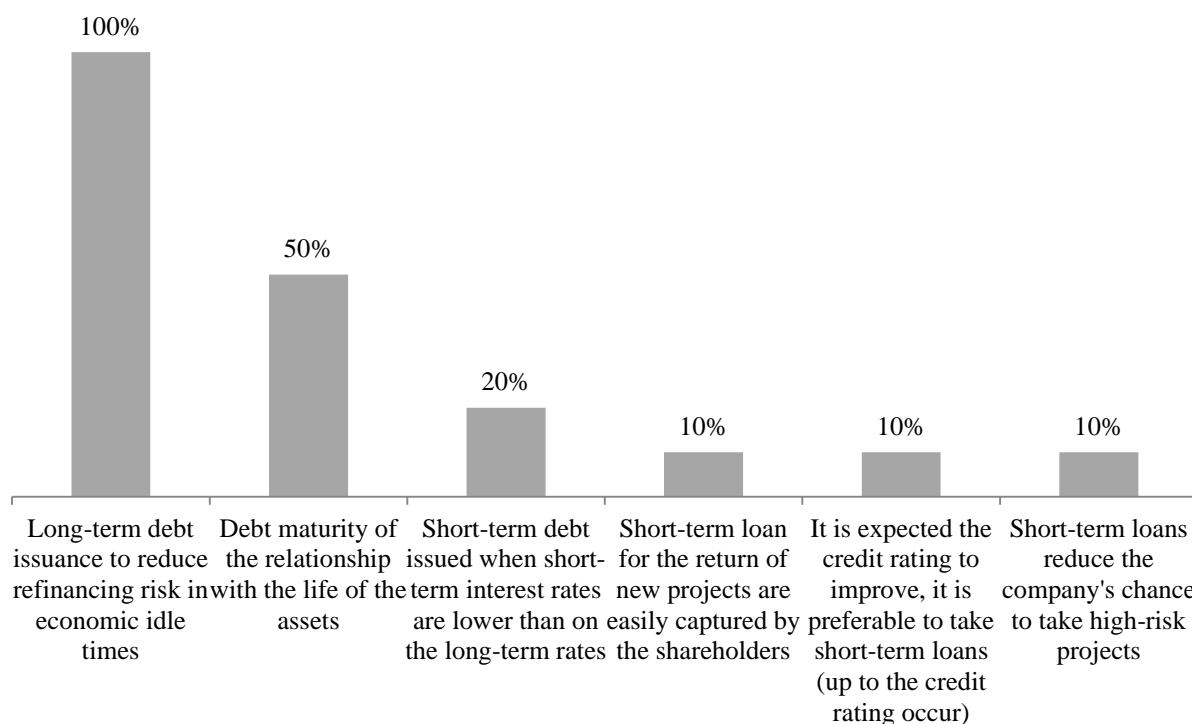
are crucial in finding the optimal level of debt for the company's finances.

Companies must find their optimal debt, given their conditions and the economic scenario in which they operate. Based on this, they should choose the time of funding and establish a level of liabilities to be paid within their means, so as not to affect its financial condition in no time.

According to the Figure 7, the choice between the short and long-term debt has a certain division between the companies in our sample. The most mentioned factor refers to the long-term issue to avoid

refinancing needs in times of economic inactivity, reason given by all respondents. The correspondence debt maturity with the life of the assets was justification for 50% of CFOs, pointing preference for debt for a longer period. Then the issue of short-term debt when short-term rates are lower compared to long-term debt appears with 20% of mentions. The last three factors that affect the debt policy of the sample companies refer to short-term indebtedness. Thus, we see that the factors responsible for the preference to short-term debt totaling 50% of the entries made by the CFOs.

**Figure 7.** Factors that have influence on the debt term of choice



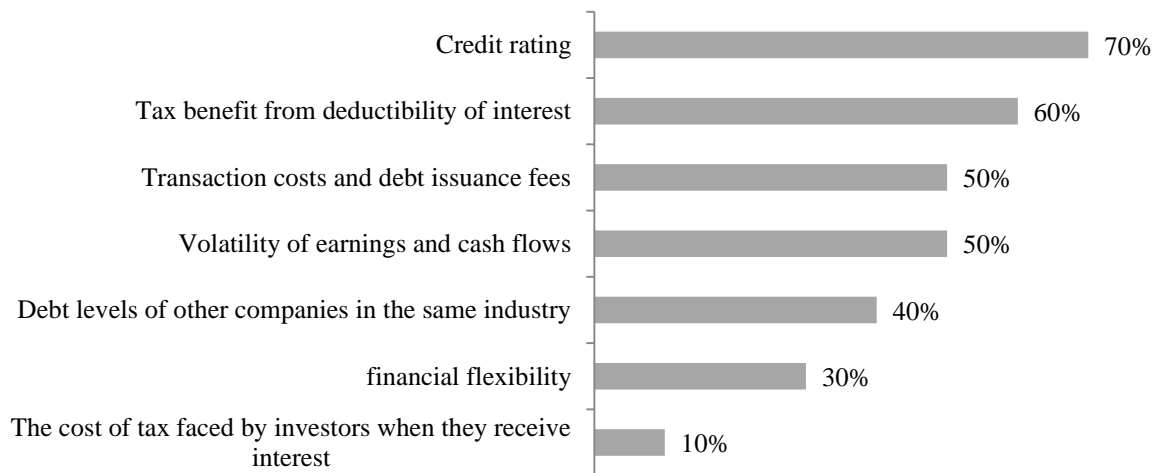
About the debt level to be contracted, the main factors mentioned are the company's credit rating, followed by transaction costs, debt issuance fees and the tax benefit from deductibility of interest, the first factor remembered for 70 % of respondents and the second with 60% of mentions, as shown in the Figure 8. We should emphasize that this second point relates to the fact that the sample tend to seek external capitalization when their recent profits are not enough. Sectors with tax benefits tend to have more resources available, requiring no additional debt.

Also remembered by 50% of financial executives, are transaction costs and debt issuance fees, as well as the volatility of earnings and cash flows, the last one influenced by issues such as seasonality. Pinho and Costa (2008) did not obtain any clear evidence of a relationship between the volatility of cash flow and the strength of the profits of a company. The difference between the results may be related to the samples of both works.

This question found that 40% of the answers are related to the observation about the debt levels of other companies in the same industry. Soon after we have the financial flexibility with 30% of mentions. The least cited factor among those that have been mentioned, refers to the cost of tax faced by investors when they receive capital from interest tax.

Potential costs of bankruptcy, near bankruptcy or financial difficulty; wisdom on the part of the company's competitors that it is unable to reduce output or sales; for the issuance of debt and maintaining high level of debt and the impact of the bargaining concessions of the company's employees. These are points that were not mentioned by the respondents of the questionnaire. Bancel and Mitto (2003) studied the factors that affect the debt policy in seventeen European countries and also concluded that the credit ratings of companies and the tax benefit of debt are relevant in determining such policy.

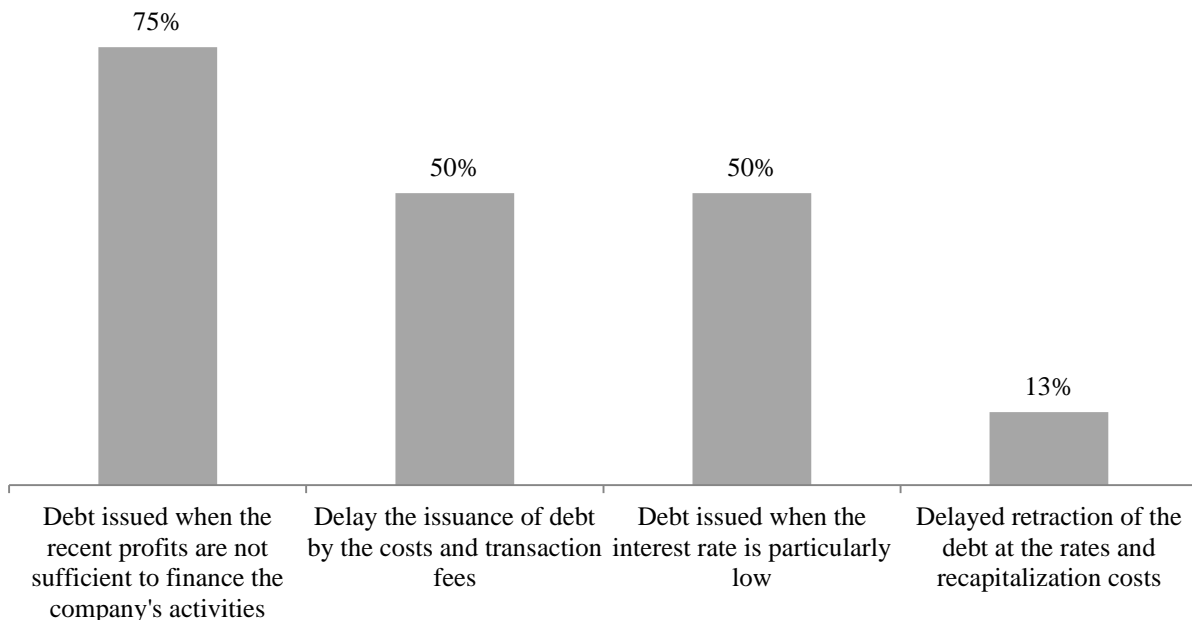
**Figure 8.** Factors that influence the level of debt



Also were asked about the existence of other factors that affect, in general, the company's debt policy in which they operate. As shown in Figure 9, 75% of respondents of this question said the debt issue occurs only when the recent profits are not sufficient to finance the activities of the company. Thus, it is observed that the respondent companies prefer to issue debt only when they experience financial difficulties and not when they are in stable or vigorous growth

situation. On the other hand, 50% confirm that the company uses the postponement of debt issuance because of costs and the considerable existing transaction fees in Brazil. With the same percentage of answers is issuing debt when the interest rate is low. The least remembered factor was the delay of retraction of the debt related to the rates and recapitalization costs, with 13%.

**Figure 9.** Other factors that exert influence on the debt policy



As noted, many of the factors that influence on both the period and as the level of indebtedness of the analyzed companies, focuses on conditions offered by the country or also the opportunities windows. Eid Jr.

(1996) shows that, in terms of choice of optimal capital structure, the results in Brazil indicated that the level of debt is set from the opportunism, that is, the



resources are captured as opportunities arise, for example, when the interest rate varies negatively.

Companies that operate here show concern for periods of uncertainty and economic instability and point out that if the country offer reduced transaction costs and taxation, certainly would opt for a higher level of capitalization. On the work of Santos, Junior and Cicconi (2009), in which the costs and transaction fees were cited for a share of respondents, we found that 50% of CFOs belonging to our sample considered that this factor is relevant in general decisions about the Debt Policy of their company.

Factors related to debt policy were also investigated in the article developed by Graham and Harvey (2002) within the setting of the companies operating on American scenario. We found this article that financial flexibility is the factor most mentioned by CFOs in the survey, followed by the credit rating, volatility of earnings and cash flow, and insufficient internal funds. Compared the results of both surveys, we observe the credit rating among the most mentioned both on the American and in the Brazilian scenario. However, our results show a smaller importance related to the financial flexibility. In addition, CFOs of companies operating in Brazil seem more cautious when compared to corporate financial officers belonging to the study of Graham and Harvey, since the question where was mentioned, the option of adopting borrowing policies when the company's profits are not enough was the most remembered. In the study of the two authors, this factor was only the fourth most mentioned factor. It is also observed that the costs and transaction fees for the companies surveyed in Brazil are more relevant in debt decision (50%), compared to those found by another study, with just over 30% of mentions.

## 6 Conclusion

The main objective of this study was to investigate how are made the debt policies of Brazilian companies listed and not listed on the Bovespa and the main factors that influence this decision, if these are internal factors of the company or factors that make up the conditions offered by country for the progress of these companies.

As noted, most of the investigated companies prefer not to issue convertible debt, as well as the number of companies issuing common shares was considered small. In view of these observations, the participation of shareholders in listed companies on companies' decisions is a factor that can have reasonable influence, for example, over the debt policy.

We also found that companies do not have a specific preference, in fact, over the short or long-term debt, establishing largely this debt based on their credit score, in tax benefits and transaction costs. The latter factor is also responsible for causing the postponement of the debt of some of the companies

surveyed. Nevertheless, we find that good portion of the surveyed companies also prefer to opt for debt only when there are problems of domestic financing. It was also observed that non-listed companies have great concern about the volatility of profits and cash flow.

The results came in part from the results obtained in other studies conducted in different economic scenarios, but in the case of Brazil, we noted certain caution CFOs on the conditions that the country offers for the maintenance of the activities of companies.

## References

1. Bancel, Franck; Mittoo, Usha R. The Determinants of Capital Structure Choice: A Survey of European Firms. 2003. Available in: <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=299172](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=299172)>. Access: 10 jun. 2014.
2. Barclay, Michael; Smith, Clifford. The maturity structure of corporate debt. *Journal of Finance*, v. 50, p. 609-632, 1995.
3. BM&Fbovespa; (São Paulo). Classificação setorial das empresas e fundos negociados na Bovespa. 2008. Available in: <<http://www.bmfbovespa.com.br/Pdf/ClassifSetorial.pdf>>. Access: 15 ago. 2014.
4. Decourt, R. F. ; Procianny, J. L. . O processo decisório da distribuição de lucros das empresas listadas na Bovespa. In: Encontro Brasileiro de Finanças, 2009, São Leopoldo. Nono Encontro Brasileiro de Finanças, 2009.
5. Eid JR., W. Custo e estrutura de capital: o comportamento das empresas brasileiras. *Cadernode Pesquisas em Administração*, v. 2, n. 5, p. 1-8, 2º. sem. 1997.
6. Graham, J.R., Harvey, C.. How do CFOs make capital budgeting and capital structure decisions? *Journal of Applied Corporate Finance*, v. 15, 8–23, 2002
7. Graham, John; Harvey, C. R. The theory and practice of corporate finance: evidence from the field. *Journal of Financial Economics*, v. 60, p. 187-243, 2001.
8. Graham, John. Proxies for the corporate marginal tax rate. *Journal of Financial Economics*, v. 42, p. 187-221, 1996.
9. Leland, H.E.; Pyle, D. H. Informational asymmetries, financial structure, and financial intermediation. *Journal of Finance*, v. 32, p. 987-1019, 1977.
10. Miller, Merton. Debt and taxes. *Journal of Finance*, v. 32, p. 261-275, 1977.
11. Modigliani, Franco; Miller, Merton. The cost of capital, corporation finance and the theory of investment. *American Economic Review*, v. 48, p. 261-297, 1958.
12. Myers, Stewart. The capital structure puzzle. *Journal of Finance*, v. 39, p. 575-592, 1984.
13. Myers, Stewart; Majluf, Nicholas. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, v. 13, p. 187-221, 1984.
14. Myers, Stewart. The determinants of corporate borrowing. *Journal of Financial Economics*, v. 5, p. 147-175, 1977.
15. Opler, T.C.; Titman, S. The debt-equity choice. Ohio State University, 1998.
16. Pinho, Rafaela Módolo de; Costa, Fábio Moraes da. A Relação entre volatilidade do fluxo de caixa

- operacional e persistência do lucro nas firmas brasileiras listadas na Bovespa. In: *Convenção Dos Contabilistas Do Estado Do Espírito Santo*, 20., 2008, Cachoeiro de Itapemirim (ES). *Anais...Cachoeiro de Itapemirim*: CRC-ES, 2008.
17. Rajan, Raghuram; Zingales, Luigi. What do we know about capital structure? Some evidence from international data. *Journal of Finance*, v. 50, p. 1421-1460, 1995.
18. Robb, Alicia M.; Robinson, David T.. *The Capital Structure Decisions of New Firms*. 2009. Available in: <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1345895](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1345895)>. Access: 25 maio 2014.
19. Rutherford, Janette. An international perspective on the capital structure puzzle. In: Stern, Joel; Chew, Donald (org.). *New Developments in International Finance*, New York, 1988.
20. Santos, Carolina Macagnani dos; Pimenta Júnior, Tabajara; Cicconi, Eduardo Garbes. Determinantes da escolha da estrutura de capital das empresas brasileiras de capital aberto: um survey. *Revista de Administração da Universidade de São Paulo*, São Paulo, v. 44, n. 1, p.70-81, jan. 2009.
21. Scott J. H. Bankruptcy, secured debt and optimal capital structure. *Journal of Finance*, v. 32, p. 1-19, 1977.
22. Shyam-Sunder, Lakshmi; Myers, Stewart. Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, v. 51, p. 219-244, 1999.
23. Stonehill, Arthur. et al. Financial goals and debt ratio determinants: A survey of practice in five countries. *Financial Management*, v. 4, p. 27-41, 1975.
24. Titman, Sheridan; Wessels, Robert. The determinants of capital structure choice. *Journal of Finance*, v. 43, p.1-19, 1988.