GESTÃO, FINANÇAS E CONTABILIDADE

THEORETICAL ESSAY ABOUT THE RELATION BETWEEN FINANCIAL LEVERAGE AND INVESTMENT IN BRAZILIAN COMPANIES

ENSAIO TEÓRICO SOBRE A RELAÇÃO ENTRE ALAVANCAGEM FINANCEIRA E INVESTIMENTO NAS COMPANHIAS BRASILEIRAS

ENSAYO TEÓRICO ACERCA DE LA RELACIÓN ENTRE APALANCAMIENTO FINANCIERO E INVERSIONES EN EMPRESAS BRASILEÑAS

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ABSTRACT

The quest for understanding the relationship between the capital structure and investment decisions resulted in many different authors contribution. In the Brazilian economic scenario, an empirical study performed by Albuquerque and Matias (2013) identified the existence of a strong negative relation between finance leverage and investment in Brazilian public companies. The purpose of this study was to investigate whether the theory of finance supports these empirical findings or if there is a discrepancy between the practical behavior and the theoretical rules. To this end, it was performed a bibliographic research of scientific works related with this theme, among them Carneiro, Salles and Wu (2006), Hadlock and Pierce (2010) and Dang (2011). The methodology of this research can be classified as exploratory, according to its purpose, qualitative in terms of approach and bibliographical considering its technical procedures. All the developed analysis led to the formulation of six theoretical propositions that support the relation between financial leverage and investment. The negative and positive effects of debt were considered according to growth opportunities, the supply of credit in the Brazilian context, the raising of risk and cost of capital and the allocation of resources obtained through external funding. Briefly, it can be concluded that these six theoretical propositions could serve as the fundamentals of the relation in question, two being based on the under-investment and overinvestment theories and the other four, on the Brazilian financial market aspects. All of them must be considered in the decision making of a financial manager, especially the related with the financing options.

Keywords: Financial Leverage; Investments; Capital Structure.

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RESUMO
A busca pelo entendimento da relação entre a estrutura de capital e as decisões de investimento resultou na contribuição de diferentes autores. No cenário econômico brasileiro, estudo empírico realizado por Albuquerque e Matias (2013) identificou a existência de uma forte relação negativa entre a alavancagem financeira e o investimento em empresas brasileiras de capital aberto. O objetivo deste estudo foi averiguar se tais resultados obtidos empiricamente são suportados pela teoria de finanças ou se há discrepância entre tal comportamento prático e os preceitos teóricos. Para tanto, foi realizado um levantamento bibliográfico de trabalhos científicos relacionados a este tema, dentre eles Carneiro, Salles e Wu (2006), Hadlock e Pierce (2010) e Dang (2011). Em termos metodológicos esta pesquisa pode ser classificada como exploratória, de acordo com seu propósito, qualitativa em termos de abordagem e bibliográfica conforme os procedimentos técnicos empregados. As reflexões desenvolvidas levaram à formulação de seis proposições teóricas que fundamentam a relação em análise. Foram considerados os efeitos negativos e positivos do endividamento conforme as oportunidades de crescimento, a oferta de crédito no contexto brasileiro, a elevação do risco e do custo de capital e a destinação dos recursos obtidos através de financiamento externo. De forma sucinta, pode-se concluir que as seis proposições teóricas elencadas podem servir de fundamento para relação analisada neste trabalho, sendo duas delas embasadas nas teorias de subinvestimento e de sobreinvestimento e as outras quatro em elementos mais relacionados com aspectos do mercado financeiro brasileiro. Todas devem ser levadas em consideração no processo de tomada de decisão do gestor financeiro, principalmente aquelas relacionadas a opções de financiamentos.

Palavras-chave: Alavancagem Financeira; Investimentos; Estrutura de Capital.

RESUMEN
La búsqueda del entendimiento de la relación entre la estructura de capital y las decisiones de inversión resultó en la contribución de diferentes autores. En el escenario económico brasileño, un estudio de Albuquerque y Matias (2013) identificó una fuerte relación entre el endeudamiento y la inversión en las empresas que cotizan en bolsa de Brasil. El objetivo de esto estudio fue comprobar si esos resultados obtenidos empíricamente son apoyados por la teoría de las finanzas o si existe una discrepancia entre el comportamiento práctico y las reglas teóricas. Para eso, fue realizado una búsqueda bibliográfica de trabajos anteriores relacionados a eso tema, entre ellos Carneiro, Salles y Wu (2006), Hadlock y Pierce (2010) y Dang (2011). En términos metodológicos esa búsqueda puede ser clasificada como exploratoria de acuerdo con su propósito, cualitativo en términos de abordaje y bibliográfica según los procedimientos técnicos empleados. Las reflexiones desarrolladas llevaron a formulación de seis proposiciones teóricas que fundamentan la relación en análisis. Fueron considerados los efectos positivos y negativos de la deuda de acuerdo con las oportunidades de crecimiento, la oferta de crédito en el contexto brasileño, el aumento en el riesgo y el costo de capital y la asignación de los recursos obtenidos a través de la financiación externa. Brevemente, es posible concluir que las seis formulaciones teóricas pueden servir como base de la relación analizada en eso trabajo, dos de ellas basadas en las teorías de subinversión y sobreinversión y las otras cuatro en elementos más relacionados con aspectos del mercado financiero brasileño. Todas ellas deben ser consideradas en el proceso de toma de decisiones de un gerente financiero, principalmente aquellas relacionadas a opciones de financiamiento.
Palabras clave: Apalancamiento Financiero; Inversiones; Estructura de Capital.

1 INTRODUCTION

The Capital Structure is one of the most important subjects in the literature of finance. It is defined as the company financing composition of assets (BRITO; BATISTELLA; CORRAR, 2007). This financing may be gotten from equity financing (resources coming from partners or shareholders) and debt financing (when the company has to pay for the liabilities). Each financing source may bring to a company advantages and disadvantages which depend on the utilization of tax benefit over the debt (KRAUS; LITZENBERGER, 1973), Agency costs (JENSEN; MECKLING, 1976), and information asymmetries (BREALEY; LELAND; PYLE, 1977) among other factors.

There are two main thought matrixes about this subject, one developed by Durand (1952; 1959) which says that the existence of an ideal capital structure and other by Modigliani and Miller (1958; 1959) which says that the way as the company finance themselves is irrelevant to the value determination of the company. However, the financing literature still has not gotten proper answers about the existence of an ideal level of debt for a company (JUNQUEIRA et al., 2010). These opinions divergence keep the current pursuit of total understanding of the reflexes of the capital structure in the financing decision taking.

This decision may be linked to the concept of financial leverage. Financial leverage is defined by Assaf Neto and Lima (2011, pag. 293) as "[…] The effect of debt financing to a determined cost, using it for assets to other rate of return". The use financial leverage by debt financing makes possible different investments, e.g. an expansion, replacement or renewal of fixed assets. To assess this ratio between financial leverage and investments, researches has been done and among them the researches by Lang, Ofek and Stulz (1996); Aivazian, Ge and Qiu (2005); Firth, Lin and Wong (2008) and Dang (2011). Most of these studies are written in developed economies, mainly in United States of America, and has displayed as results a negative ratio between financial leverage and investments. One of these studies was written in Brazil by Albuquerque and Matias (2013) and the results and conclusions in their studies also show a negative ratio between financial leverage and investments in the public Brazilian companies.

Some authors find in the theory factors that explain an otherwise ratio between the level of investments and financial leverage. Among them, there is the pressure caused by the cash flow versus the level of debt (MYERS, 1984) and the company capacity to mitigate agency problems between shareholders and managers (JENSEN, 1986; STULZ, 1990). However there are elements that still might become clearer in the Brazilian reality, among them, the cost of capital, the financing sources and the debt maturity, factors identified as relevant, for example, by Valle and Albanez (2012).

Because the usage of debt financing in the investments decision is a common action inside the companies, and this kind of capital source allows financial leverage, the trend was to expect that the investor gets profit using the debt financing, namely, by applying in investments that offer higher remuneration than the financing cost, so it would be possible get profits from financial leverage. As previously said, the empiric studies have been finding a negative ratio between financial leverage and investments. This way a better understanding of how this is in theorics terms, this ratio might allow a better decision taking of the administrators when it comes from either the investments alternatives or financing.

In this context, this theoric study was developed, in which, it allows a deeply comprehension, of the factors which is responsible or might be the reason for the negative ratio between financial leverage and investments in the public Brazilian. So, the main

question of this study is: are there theoretical elements that explain or justify the negative ratio between financial leverage and investment in the Brazilian public companies?

So, the goal of this study is to examine either if the results empirically gotten on the academics studies already written are proved by arguments already developed in the financing theory or if there is discrepancy between the practical behavior of the ratio between investment and financial leverage e the theorics precepts.

It is possible to claim, more precisely, that this study aims to understand the reasons that cause this negative ratio, pointed out by Albuquerque and Matias (2013) between the matrixes of investment and financial leverage. That been said, analyses were developed to define which core elements of this ratio and also identify the reasons for its occurrence. Such results found in the Brazilian market diverge with the statement by Strebulaev and Yang (2013) that shows a percentage higher than 32% of the North America public companies which have a low number of financial leverage, lower than 5% when financing their business. Still in this matrix of companies that have started to use less often the financial leverage in their activities, Bessler et al. (2013) highlight the big number of companies around the world which operates without the financial leverage, which may also have alignment with the negative ratio found in the Brazilian market.

In this study, two 2 steps are predicted: the first is a deep theoretical study about the main factors of this negative ratio between investment and financial leverage in the Brazilian reality. The second is the development of theoretical propositions, through the knowledge of the scientific literature.

This study has this introduction and five more topics. The next topic is the theoretical framework that has the bibliographic fundamentals very important in the ratio between financial leverage and investments, after there is a topic about inherent aspects to the Brazilian e.g. high interests and sources of financing. In the fourth topic main methodological aspects of this study are explained. The fifth focuses on theoretical propositions that result from the analysis addressed by the research, the next section presents the final considerations of the study and, finally, are listed the references used at work.

2 LITERATURE REVIEW

There are several studies related with financial decision making in the business world, as Perobelli and Famá (2002), Kirch, Procianoy and Earth (2014) and Lucinda and Saito (2005). Finance Theory divides financial decisions in three large groups: finance, investments and dividends (ANTUNES; PROCIANOY, 2003). The funding, which will determine the firms' capital structure, can be done through internal and external sources. That is, the resources can come from within the company, through retained earnings, or may come from external funding. Part of these resources is intended to fund investment. In this context, is part of the so-called financial leverage: in order to better remunerate the capital, managers capture third-party funds and make investments seeking a higher return than the cost of funding (ASSAF NETO; LIMA, 2011, p 293).

To understand the relationship between the investment decision and the practice of financial leverage, it has as a primary understanding of the factors that influence each of these variables alone. The importance of understanding this relationship arises from the possibility to control the capital structure in order to get a better use of investments, what could cause a high impact on business performance.

2.1 Investment

The investment decision takes analyze of different factors that affects the attractiveness of it. Some of these factors are changed by the use of debt financing, and, therefore affects the ratio between financial leverage and investments.

2.1.1 Goal of the investment

The decision of investing in a company is tied to the expectation of providing long-term benefits, by spending capital (GITMAN, 2009, p. 326). The investments are accomplished by different reason, among them, expansion and the replacement or renovation of assets. (GITMAN, 2009, p. 327).

The expansion of assets, more common among the investment is to expand the level of operations of a company through the purchase of additional infrastructure, such as land and facilities. The replacement or retirement of assets, in turn, consists of investments related to obsolescence and wear an asset. This type of investment it becomes common as businesses suffer slowing growth and mature. Other possible reasons to make an investment are associated with a long-term fund commitment in anticipation of higher future returns. This occurs, for example, in advertising campaigns and research and development projects.

The investment decision is associated, according to Assaf Neto and Lima (2011, p. 348), a process of selection and evaluation of alternatives involving the analysis of the design of cash flows, the economic assessment and the determination of the rate of return and risk involved. Among the factors that influence where, how much and when to invest can be cited: the obsolescence of assets, the availability of resources and the availability of new technologies (LIPPIT; MIESING; OLIVER, 1988). At the present time there are works that seek to establish techniques to assist in a more rational and efficient choice of investments, this line can cite the study of Silva Moreira and Francisco (2014) applying linear programming technique in choosing investments.

2.1.2 Relation risk and return

Every investment is associated with a risk. Despite the investor profiles disparity, there is the existence of a risk aversion, which affects the attractiveness of an investment. The higher the associated risk, the higher will be the return required by investors as a kind of compensation for the additional risk (GITMAN, 2009, p. 13). The return expected by a company is one of the evaluation parameters used in selecting investment opportunities (SILVA; NOGUEIRA; REIS, 2012). For an investment to be viable, it is necessary that the expected rate of return is higher than the cost of capital involved. The cost of capital in investment decisions can be seen as the minimum rate of return required by investors (SCHROEDER et al., 2005).

When funding is through the use of debt financing, both risk and return on investment are changed. The business risk is increased by the so-called financial risk (LUCA; RAMBALDUCCI, 2003). The financial risk relates more directly with the indebtedness of the company and its ability to pay (ASSAF NETO; LIMA, 2011, p 431.). It happens when situations in which the investment has not materialized expected returns and / or the company does not have enough liquidity to make payment of the financing. This means that, in some companies, investment decisions are based on their administrative aggressiveness (LUCA; RAMBALDUCCI, 2003).

The expected return has an inverse ratio to the cost of financing. (ASSAF NETO, 1997). This is because higher interest rates reduce the share of firms in return on investment,

as part of this return will be allocated to the payment of debt. Therefore, investments using external resources, the cost of capital is higher when compared to the cost of equity will require higher returns and will only be advantageous if these returns are at least equal to the cost of financing (CARNEIRO; SALLES, WU, 2006).

2.2 Financial leverage

Alongside investment decision, there is the choice of the capital structure. The feasibility of external financing considering future applications of the funds raised will determine the degree of financial leverage. Financial leverage is affected by different factors analyzed by authors such as Perobelli and Famá (2002), Luca and Rambalducci (2003) and Nakamura, Juca and Bastos (2011). Among these factors, five have been presented by the Finance Theory as most relevant: credit restrictions, debt maturity, use of collateral, cost of capital and growth opportunities. As a result, these factors will be discussed and its relationship to financial leverage will be analyzed.

2.2.1 Credit restrictions

Financially constrained firms do not have access to credit lines and has limited its financial leverage by creditors, since the cost of the required funding is extremely high (DEVOS et al., 2012). Previous research has shown that they are mostly new and small enterprises (HADLOCK; PIERCE, 2010) that do not have a strong reputation and track record in the debt market (DIAMOND, 1989, 1991).

Other features also stand out with regard to restricted companies. It is prevalent in this group of companies a lack of assets that could be used as collateral to reduce the cost of debt (BENMELECH; BERGMAN, 2009). It is also observed greater reliance on its investment projects in free cash flows. This indicates that the gap between the existing domestic and external financing costs in limited companies leads to the use of internal capital (OLIVEIRA; CUNHA, 2012).

They only use debt financing when credit constraints are minimized when building a reputation in the market and present its consolidated name. Another situation where these companies start to use debt capital arises from the existence of a large project with high profitability that could not be funded internally (DEVOS et al., 2012).

2.2.2 Debt maturity

Debt maturity is what features the financing and define the benefits which may be taken from the companies that get them. Short-term debts avoid underinvestment investment problems (BARCLAY; SMITH JR., 1995). According to Stohs e Mauer (1996) companies with lots of growth opportunities use short-term debts to minimize agency problems between shareholders and creditors. Such debts would mature earlier than the investments options, in a way that new projects, with net present value (NPV) positive, are not dropped due to insufficient cash.

However short-term debts have less creditors information costs if we compare them with long-term debts (BARCLAY; SMITH JR., 1995). When the debt is short-term, the creditor may get information about the company and, later the debt maturity; impose contract terms as warrants and restrictions, allowing their renegotiation (ALBANEZ; VALLE, 2009). This way, the companies, when getting short-terms debts, may take the risk of worsening the financing conditions through the debt renegotiation.

It is also observed that the smaller debt maturity causes the smallest financial leverage observed between companies, consistent with the highest liquidity risk inherent to short-term debt (DANG, 2011). With a reduced maturity of debts, companies are subject to the risk of not having ability to meet its short-term commitments.

2.2.3 Use of collateral

The collateral are company assets used as warranties in funding for discriminating, select or act as a device to stimulate the supply of credit markets that present information asymmetry. This asymmetry leads to an adverse selection may be minimized through the use of collateral. Besides ensuring against default, the collateral helps in selection and choice between good and bad projects. If the project fails, the lender can recover some or all borrowed, reducing the uncertainties inherent in funding (ZANI; PROCIANOY, 2007).

Moreover, it was observed that reliance on collateral in the ease of obtaining external financing does not depend on your financial condition is restricted or not. Therefore, the more collateral a company have in a business greater ease to leverage themselves financially (ZANI; PROCIANOY, 2007).

2.2.4 Cost of capital

According to Gitman (2009, p. 432), the cost of capital is the rate of return required by the capital provider to finance a specific project of a company. In external financing, the cost of capital is the interest rate required by the lender, the cost of debt. When funding occurs with equity shareholders, meaning internal resources, the cost of capital is determined by the rate of return required by the shareholders themselves.

It is observed that the higher the leverage, the higher the cost of capital, both own and third parties (FAMÁ; GRAVA, 2000). That is, the more the company goes into debt, the higher the cost of debt and the higher the cost of equity capital.

In addition, the tax structure adopted by legislation impacts on the cost of debt. In Brazil, interest is deductible for tax purposes and therefore reduces the effective cost of debt (GITMAN, 2009, p. 438). This tax benefit results from the treatment of interest as an expense which reduces your taxable income and consequently the taxes payable (FAMÁ; GRAVA, 2000).

2.2.5 Growth opportunities

Growth opportunities represent the performance expected from a company associated to the stage where you are. According to them, the use of debt can affect it positively or negatively. According to McConnell and Servaes (1995), the financial leverage has a negative relationship with the value of companies with high growth (growth phase) and positive for companies with low growth (mature stage). This relationship can be associated with the problems faced by each of these categories.

Companies with high growth opportunities suffer from underinvestment problem existing in scenarios where there are many profitable projects and financial leverage is high. Underinvestment is due to the moral hazard associated with the conflict of interest between creditors and managers (BAPTISTA; MATIAS; VALLE, 2013). It occurs in situations where managers rule out new projects with positive NPV. This disposal is due to the possibility of cases of default caused by lack of resources, in which the marginal benefits are used to pay creditors, not its shareholders (OCCHINO; PESCATORI, 2014). Also in cases of lack of financial resources (CARVALHO; KALATZIS; ALBUQUERQUE, 2014).

In companies with low growth opportunities facing the overinvestment problem, common in situations where there is lack of good investment projects. The overinvestment stems from the non-alignment of incentives of shareholders and managers that leads to the use of free cash flow to finance unprofitable projects (BAPTISTA; MATIAS; VALLE, 2013). In this case, managers, interested in increasing their privileges by increasing the size of the company, invest in projects, even if it presents a negative NPV and reduce shareholder wealth (KAYO; FAMÁ, 1997). Thus, it appears that companies with high growth opportunities should use a higher proportion of equity (RAJAN; ZINGALES, 1995).

Moreover, these companies tend to use more short-term debt to avoid such problems of insufficient resources for new investments (BARCLAY; SMITH JR., 1995). It is also noted that firms with low growth opportunities should opt for the use of debt. Financial leverage is, in this case, a disciplinary device used to reduce the free cash flow and avoid unprofitable investment projects (JENSEN, 1986; STULZ, 1990).

3 BRAZILIAN CONTEXT

After understanding the factors that influence the investment decision and the practice of financial leverage, it becomes important to analyze an environment where the negative ratio between these two variables was found.

Albuquerque and Matias (2013) conducted a study in order to analyze the impact of financial leverage on the investment decisions of Brazilian non-financial public companies, from 2000 to 2011. This study identified using statistical tests a negative relationship between the level of financial leverage and the investments made by these companies. It was found that companies with higher financial leverage tend to invest less, that is, the most indebted, the lower their level of investment, and this way happens the other way around.

In investment decisions financed with external resources, the cost of capital, considered the minimum rate of return required by the investor is represented by the interest rate required by the lender (SCHROEDER et al., 2005). Thus, the fluctuation risk of existing domestic interest rates in each country, according to Earth (2006), makes the relevant environmental study on the relationship between financial leverage and investment was analyzed.

The study of financial leverage, in turn, involves the analysis of the ratio between the capital structure of companies and the factors mentioned above, as credit restrictions and the maturity of debt. However, the intensity and the signal from each ratio depend on institutional characteristics specific to each country (BOOTH et al, 2001). Thus, significant institutional differences between countries lead to different relationships between the financial leverage and the various factors studied. Again, the analysis of the context shows itself relevant to understand the relationship between financial leverage and investment.

This ratio was conditioned by the peculiarities of the Brazilian context: the tax benefit, the high interest rates, the predominance of short-term debts and sources of financing in foreign currency and differentiated. These features found in the Brazilian context are briefly addressed below.

3.1 Tax benefit

As previously mentioned, one of the main reasons for using debt financing are the tax benefits granted to holders of debt companies. Although not a peculiarity of the country, the Brazilian tax law allows interest payments can be deducted for tax purposes, resulting in a

reduction of the effective cost of debt and encouraging financial leverage (GITMAN, 2009, p. 438).

The effect of this benefit in the capital structure identified by Modigliani and Miller (1963) was a higher level of debt, which would result in increasing the value of leveraged companies. This is, according Perobelli and Famá (2002), because the increase in debt results in increased recorded tax benefit and consequently to reduce the financing cost.

3.2 High interest

The interest rates practiced in Brazil is higher than most developed countries (JUNQUEIRA et al., 2010). Soon the debt in Brazil tends to discourage investment in new projects, as higher interest rates reduce the participation of companies in the expected return.

According to Valle (2008), the high interest rates have become virtually a Brazilian institution and forced companies to resort to alternative financing sources. Brito, Corrar and Batistella (2007) claim that high interest rates make significant financing costs and consequently reduce the indebtedness of Brazilian companies.

Along the same theory, Machado, Ceretta and Vieira (2014) claim about the ratio between interest rates and credit restrictions in Brazil. These authors found that the higher interest rate, the lower will be the volume of granted mortgage and vice versa.

3.3 Predominance of short-term debt

Another peculiarity found in the Brazilian context is the predominance of short-term debt. This is due to low long-term credit availability, the source of which is basically limited to the National Bank for Economic and Social Development – BNDES (MOTA; COELHO; HOLANDA, 2014). This condition also arises from the strong concentration of resources in a limited number of financial institutions in Brazil. As stated by Bittencourt et al. (2015) the four largest financial institutions hold approximately 50% of the total resources of the Brazilian National Financial System.

The difficulties to attract long-term financial resources make the debt of Brazilian companies have reduced maturity, the implications of which were discussed earlier.

Brito, Corrar and Batistella (2007) found that the Brazilian scenario largest companies are more indebted and have a higher proportion of long-term debt. This fact supports the perception that large Brazilian companies when compared with those of smaller, have easier access to long-term debt market (MOTA; COELHO; HOLANDA, 2014). One explanation for this ratio is the lowest proportion of assets that can be used as collateral in small businesses (OZKAN, 2002).

3.4 Sources of financing in foreign currency and differentiated

In order to meet the financing needs, there are two alternatives relevant sources in determining the capital structure used by Brazilian companies (VALLE; ALBANEZ, 2012). The first is the financing in foreign currency, which in many cases are based on the cost of capital Libor (London Interbank Offered Rate), lower than the foundation of the Brazilian domestic rates. The second refers to different sources, resulting from own financing mechanisms, highlighting two strong national institutions: the National Bank for Economic and Social Development (BNDES) and the Rural Credit. Both have different interest rates, that is, government-subsidized, below the rates practiced freely in the credit market.

According to Valle (2008), access to these different sources promoted privileged position to capture that impacted the financing decisions and consequently changed the capital

structure of companies. These sources are an alternative to the major constraint that the high interest rates exert the financing of any company.

4 METHODOLOGY

In terms of classification, a research seconds Vergara (2008) based on your goals as exploratory, descriptive and explanatory. This author states that an objective exploratory research provide important familiarity with the problem in order to make it more explicit, improving their ideas. This research can be classified as exploratory as possible search via theoretical basis more familiarity about the financial leverage relations with investment.

Since there is no quantification of employment or statistical analysis methods, this paper is configured in approach as a qualitative research, as Richardson (1999). This study was developed primarily via research of academic material already published on the subject under study, as well as Vergara (2008), it can be classified as literature.

Regarding the methodological procedures employed, this study refers to a theoretical essay, therefore, it was first necessary to conduct a literature review of scientific papers related to the themes of financial leverage and investments of non-financial companies. This was accomplished through research in scientific papers databases, among them the SciELO and the CAPES Portal, in order to ascertain such influence. It was looked for the keywords: financial leverage; investment; capital structure; cost of capital; debt maturity; growth opportunities; collateral; risk and return; overinvestment and underinvestment. The first focus was to identify empirical studies that addressed the relationship between financial leverage and investment companies. Then the findings were observed on this relationship, and all studies found reported a negative ratio between the two elements.

Having this design in hand, the next step was to search elements present in the literature that were contrary or allow sustain the understanding of this relationship, this way, we tried to find jobs available in academic bases that pointed those grounds. From this research, it was revealed in the literature some possible factors that justify the negative impact that the financial leverage has on the level of investment of these companies.

Finally, based on the arguments found in the financial theories, it has run an agglutination work of the arguments of the various works and, from that, an effort to list the propositions that serve as shelter to support this negative relationship pointed to the empirical work carried out then.

The next section presents the theoretical propositions that have formed as a result of analyzes performed when tested in this study.

5 THEORETICAL PROPOSITIONS

Previous scientific studies support the formulation of some hypotheses that justify the negative relationship between financial leverage and the level of investments by the companies. These hypotheses are informed on the analysis of factors that impact on both variables in question, considering the Brazilian economic context.

This context is marked, according Valle and Albanez (2012), by high interest rates, modest presence of long-term debt, bank finance facing the short term and there are different lines, such as BNDES. Depending on the characteristics of the Brazilian market, it also becomes important to analyze what influence this environment exerts on the type of funding and the level of investment of non-financial Brazilian public companies. It was also checked whether elements like guarantees (collateral), mentioned by Norden and Kampen (2013), credit lines, highlighted by Lockart (2014), debt maturity and credit sources, listed by Saretto

and Tookes (2013) are to be classified as relevant in this relationship between financial leverage and investment in Brazilian non-financial public companies. The following items expose defined propositions after the analysis process.

5.1 Most accepted theoretical propositions

There are two most widely accepted theoretical propositions, as mentioned earlier, that explain this ratio: that of underinvestment and overinvestment. Both are mentioned by different authors, such as Dang (2011), Baptista, Matias and Valle (2013) and Occhino and Pescatori (2014). Growth opportunities available and the corporate debt level provide sub situations and / or overinvestment justifying the negative relationship between financial leverage and investments.

5.1.1 Underinvestment

Underinvestment is quoted in financial theory by several authors as Aivazian, Ge and Qiu (2003), Dang (2011) and Ahn, Denis and Denis (2005). According Occhino and Pescatori (2014), underinvestment arises from situations in which the free cash flow generated by indebted companies must first be allocated to the payment of former creditors. The remaining cash flow is not enough to pay for new lenders who could finance new investments. In situations of underinvestment associated with highly indebted companies with high growth opportunities, managers choose to rule out investment projects with positive NPV because the allocation of marginal benefits to the payment of creditors, and not to shareholders (OCCHINO; PESCATORI, 2014).

It is observed that for companies with high growth opportunities, financial leverage provides negative effects on the level of investments. According to McConnell and Servaes (1995), this ratio is reflected in the value of companies: the use of debt by companies with high growth opportunities relates to a reduction in the value of these companies.

Dang (2011) identified in British companies in the 1996-2003 period that underinvestment is countered by reducing financial leverage and not by reducing the maturity of its debt, as identified in US companies by Johnson (2003). The Brazilian context most closely resembles the British context as regards the maturity of debt. In both, the corporate debt stems mainly from the use of short-term debt and therefore fail to make meaningful use of reduced maturity of its debt to combat the underinvestment problem as do American companies.

In Brazil, the long-term financing is difficult to obtain and limited primarily to BNDES, federal public domain database (MOTA; COELHO; HOLANDA, 2014). According to Firth, Lin and Wong (2008), loans granted by public banks are not only affected by economic and financial factors specific to the companies, but also by certain government funding policies. In this perspective, the Brazilian debt is restricted the use of short-term debt, so the reduction of maturity is not an option for fighting underinvestment.

Thus, according to this theoretical proposition, companies with high growth opportunities and highly leveraged tend to keep a low level of investment compared to some indebted companies. In contrast, to maintain a high level of investment, these companies tend to opt for the predominance of equity use.

5.1.2 Overinvestment

The overinvestment stems from the non-alignment between shareholders and managers that leads to the use of free cash flows to finance risky projects and / or unprofitable

(BAPTISTA; MATIAS; VALLE, 2013). Associated with companies facing low growth opportunities, overinvestment situations can be avoided by maintaining high participation of debt funds in their capital structures. In this case, the financial leverage can be used as a disciplinary mechanism through which managers are discouraged from investing in overly risky projects only to increase the size of the company (JENSEN, 1986; STULZ, 1990).

Consequently, financial leverage would have positive effects for companies with limited opportunities for growth and is reflected in the increase in the value of these companies (MCCONNELL; SERVAES, 1995).

Firth, Lin and Wong (2008) identified in Chinese companies between 1991 and 2004 that the negative relationship between leverage and the level of investments practiced is weaker in firms with low growth opportunities. This stems from the fact that almost all the Chinese banks are public and therefore funding is not granted due to risk profile assessment of the companies but according to preferences and government priorities. Consequently, the benefit of the disciplinary role of debt is weakened by economic and social policies extended to the Chinese public banks.

In the Brazilian context, we can expect there to be some similarity to the results found in Chinese companies since much of the credit offered to companies comes from public banks, especially BNDES. Thus, it is expected that a weakening of negative relationship is identified between leverage investments and Brazilian companies with low growth opportunities. In other words, these companies even when highly leveraged continue to invest in unprofitable investment projects only to increase the size of the company.

So even with intensity reduced by the performance of public banks, Brazilian companies whose growth opportunities are limited and opt for use third-party capital tend to have a lower level of investment companies that financed preferably by equity.

5.2 Other theoretical elements

In this article, we have also made other theoretical propositions that explain the negative relationship between leverage and investment. From observations reported by several authors in the financial literature, it was possible to establish relationships between concepts and set up other arguments, though not as mentioned as the previous ones, also justify this ratio.

5.2.1 Increased risk

Financial leverage, as mentioned above, increases the risks of an investment as you add to the enterprise risk the so-called financial risk (LUCA; RAMBALDUCCI, 2003). The higher the risk, the greater will be the return required by the shareholders, as a kind of compensation for the additional risk.

At the same time, it is observed that lenders tend to charge higher interest for highly leveraged companies compared to companies with lower proportion of third-party funds in its capital structure. The more indebted a company, the greater the risk of insolvency and thus the greater the risk of default that is submitted (FAMÁ; GRAVA, 2000). In this case, the increased risk leads to an increased return required by lenders, resulting in increased capital cost for highly leveraged companies.

The higher the cost of capital, the greater should be the return demanded by shareholders (ASSAF NETO, 1997). Thus, there is a reduction in the range of investments considered attractive, i.e., providing a return on investment at or above the required. Disposal

of non-attractive designs caused by excessive risk or a low expected return can be one of the causes responsible for the negative relationship between financial leverage and investments.

5.2.2 High cost of capital

In external financing, the cost of capital is the interest rate required by the lender. In environments such as Brazil, high interest rates make enough significant funding cost (BRITO; BATISTELLA; CORRAR, 2007).

In an attempt to meet the financing needs often frustrated by high Brazilian interest rate, companies make use of two alternative sources: foreign currency financing and different sources such as BNDES and rural credit (VALLE; ALBANEZ, 2012). Both have interest rates below the rates practiced freely in the credit market through subsidies granted by the government, and had significant participation in the level of indebtedness of Brazilian companies. However, these alternative sources are limited and do not cover all companies. Smaller companies and hence more financially constrained, for example, have limited access to loans made by BNDES and, due to the high interest rate, rely more on own resources to carry out their investments (OLIVEIRA; CUNHA, 2012).

Thus, the high cost of capital, coupled with the low availability of long-term credit lines, is one of those responsible for maintaining the level of indebtedness of Brazilian companies among the lowest in the world (MOTA; COELHO; HOLANDA, 2014).

In this context, investments financed by external resources require high returns demanded by shareholders, which reduce investment opportunities considered attractive. Therefore, the high cost of funding prevents many investment projects that rely on third-party funds. This may be one reason why highly leveraged companies have the lowest investment level compared to companies with a higher proportion of own resources in its capital structure.

5.2.3 Destination of debt financing

By using financial leverage, a company captures third-party funds that become available for different applications. Among these applications, can be cited as an example: the payment of former creditors, the financing of its regular activities, the purchase of new assets and the expansion of its production capacity. However, only a portion of these applications can be classified as an investment. An investment, as previously mentioned, follows to produce the expected benefits in the long run, through a capital outlay (GITMAN, 2009, p. 326). This disbursement can be linked to the expansion, replacement or retirement of assets, among others. (GITMAN, 2009, p. 327).

One of the hypotheses to explain the negative relationship between leverage and investment consists of the allocation of funds raised externally in applications that are not classified as investment (BARROS et al., 2013). In insolvent companies, these assets may be committed mostly to the payment of former creditors and employees, purchase of production inputs, among others, so that there are not enough resources to finance new investment.

5.2.4 Credit offer

The degree of financial leverage of the companies depends on the supply of credit by public or private financial institutions. The credit available for each company largely depends on its reputation and history in the lending market (DIAMOND, 1989, 1991).

Companies that do not have credit restrictions are mostly equipped with side businesses have access to credit lines with lower financing costs (BENMELECH;

BERGMAN, 2009). Brito, Corrar and Batistella (2007) ascertained that the largest companies match those with higher debt and greater proportion of long-term debt. However, long-term debt provide investment problems as insufficient resources remain committed for a long period of time (STOHS; MAUER, 1996).

Based on this logic, there is another factor that explains the negative relationship between financial leverage and investments. Companies with the highest degree of indebtedness refuse investment projects, due to their higher proportion of long-term debt, and maintain low levels of investment.

6 FINAL REMARKS

This study has pursued the understanding the ratio between financial leverage and investments in non-financial Brazilian public companies. The search for its fundamentals justified by the importance of the impact of the type (and source) of capital investment decisions in the corporate environment. According to Albuquerque and Matias (2013), they determine the possible continuity of organizations and make it relevant to attempt to understand how the financial leverage affects this group decisions.

Some authors such as McConnell and Servaes (1995), Aivazian, Ge and Qiu (2005), Firth, Lin and Wong (2008) and Dang (2011) found a negative ratio between financial leverage and the level of investment practiced by companies in different contexts: United States, Canada, China and the UK, respectively. Each country has peculiarities that alter the intensity of this relationship and the factors that determine it. However, in all of them the negative relationship prevailed and proved significant. In the Brazilian context was no different. Albuquerque and Matias (2013) conducted a study to analyze the impact of financial leverage on the investment decisions of Brazilian public companies, from 2000 to 2011, and also found that these variables are negatively related.

The understanding of this relationship in the Brazilian context should consider characteristics such as high interest rates and the predominance of short-term debt. In the analyzes performed in this study were identified as relevant the classical theories and sub-investment with a view to considering these institutional features that impact the intensity of the relationship between financial leverage and investments. They were also considered other theoretical arguments from observations reported by several authors in the financial literature and applied in the Brazilian context.

From these insights and analysis were listed six theoretical propositions based on scientific arguments published in previous studies to support the relationship under review. Such elements consider the negative and positive effects of debt as growth opportunities, the supply of credit in the Brazilian context, the increased risk and cost of capital and the allocation of funds obtained through external financing.

The first proposition is based on the theory of underinvestment associated with highly indebted companies with high growth opportunities. Managers in these situations tend to rule out investment projects with positive NPV due to the allocation of marginal benefits to the payment of creditors, and not to shareholders (OCCHINO; PESCATORI, 2014).

The second proposition is the overinvestment theory, according to which the financial leverage can be used as a disciplinary mechanism, preventing managers invest excessively in risky projects only to increase the size of the company (JENSEN, 1986; STULZ, 1990).

The third is to increase the return required by lenders due to the increased risk associated with financial leverage, resulting in a reduction in the range of investments considered attractive. Already the fourth proposition, also due to the reduction of attractive

investments is related to the high Brazilian interest rates that make very significant financing costs (BRITO; BATISTELLA; CORRAR, 2007).

The fifth proposition is based on the allocation of funds raised externally in applications that are not classified as investment (BARROS et al., 2013). Already the sixth, and last, is based on the fact that companies with the highest degree of indebtedness are also those with the highest proportion of long-term debt, due to its reputation and history in the lending market (DIAMOND, 1989, 1991). Consequently, low levels of investment are maintained because of its resources remain committed for a long period of time (STOHS; MAUER, 1996).

Thus, it is identified that this study has raised theoretical arguments that can withstand the negative relationship found between financial leverage and investment. This especially in Brazilian public companies because of the six propositions, four are directly related to the specific conditions of the Brazilian financial market. This study supports the theory when including at least six elements which may deepened later in empiric studies. At the same time, it helps the decision taker to show that there is theoretical fundamental that need to be examined at the moment of choosing a new source of financing. For example, raising the lender's risk (and consequent increase in funding costs) must be observed by the manager, mainly due to higher interest rates in our reality.

This study, precisely for its theoretical profile also aimed to allow the development to conduct further research in this area of interest. Future studies could focus on a comparison between the negative relationship identified in the Brazilian context and the relationship identified in developed countries like the United States and Canada, analyzing, for example, if the reasons are similar despite the differences between the economies of these countries. Future research may also test each theoretical foundation raised in this article through the quantitative / statistical tools employment with empirical data. Such tests could still be performed in sector controlled studies to determine the level of correlation between different theoretical proposals and market segments.

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