Financial constraints in the Brazilian capital market: A natural experiment of CVM Instruction 476

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ABSTRACT

The study analyzes the impacts of Brazilian Securities and Exchange Commission (*Comissão de Valores Mobiliários* [CVM]) Instruction n. 476, January 16th, 2009 on the financing of Brazilian companies. This regulatory change may have reduced financial constraints by lowering the costs of issuing debentures in the domestic capital market, increasing the speed of access to capital, and removing a regulatory barrier for private corporations, which were previously prevented from issuing debentures in the domestic capital market. There are few studies that analyze specific frictions in the domestic capital market, and none that focus on this particular regulatory change and its differential impact on private corporations. The introduction of CVM 476 is treated as a natural experiment capable of provoking an exogenous shock to reduce the financial constraints faced by Brazilian corporations. Difference-in-differences models are used to identify the causal effects of interest, using limited liability companies as a control group and examining the differential effects between public and private firms. There is a growing academic and social interest in the effects of market frictions on firm decisions and performance. In this context, it is particularly relevant to assess the impact of regulatory changes such as the one focused on in this research. The results are relevant for regulators and other capital market agents interested in understanding the relevance of market frictions for access to external financing and how they can be mitigated through regulatory change, potentially contributing to the optimization of firms' capital structure. The results indicate that CVM 476 was able to increase the total leverage and especially the long-term leverage of corporations, with the effect being greater for private corporations, which is unprecedented in the literature.

Keywords: financial constraints, capital market, issuance costs, legal constraints, financing.

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Restrições financeiras no mercado de capitais brasileiro: um experimento natural da Instrução CVM 476

RESUMO

Este estudo analisa os impactos da Instrução da Comissão de Valores Mobiliários (CVM) n. 476, de 16 de janeiro de 2009, sobre o financiamento de companhias brasileiras. Essa mudança regulatória pode ter reduzido restrições financeiras por meio da diminuição dos custos de emissão de debêntures no mercado de capitais nacional, do aumento da rapidez no acesso ao capital e da eliminação de barreira regulatória para as sociedades anônimas fechadas, previamente impedidas de realizar emissões públicas de debêntures no mercado de capitais nacional. Poucos estudos analisam fricções específicas do mercado de capitais nacional e nenhum enfoca essa particular mudança regulatória e seu impacto diferencial sobre sociedades anônimas fechadas. A Instrução CVM n. 476 é tratada como um experimento natural capaz de provocar um choque exógeno, no sentido de reduzir as restrições financeiras enfrentadas pelas sociedades anônimas brasileiras. São adotados modelos com desenhos de diferença-em-diferenças (DD) para identificar os efeitos causais de interesse, utilizando empresas limitadas como grupo controle e explorando os efeitos diferenciais entre companhias de capital aberto e fechado. Há crescente interesse acadêmico e social nos efeitos das fricções de mercado sobre as decisões e o desempenho das empresas. Nesse contexto, é particularmente relevante a avaliação de impacto de mudanças regulatórias, como a enfocada nesta pesquisa. Os resultados são relevantes para reguladores e outros agentes do mercado de capitais interessados em compreender a relevância das fricções de mercado para o acesso a financiamento externo e como elas podem ser relaxadas por meio de mudança regulatória, potencialmente contribuindo para a otimização da estrutura de capital das empresas. Os resultados indicam que a CVM 476 possibilitou o aumento da alavancagem total e principalmente da alavancagem de longo prazo das sociedades anônimas, sendo o efeito maior para as sociedades anônimas fechadas, evidência inédita na literatura.

Palavras-chave: restrições financeiras, mercado de capitais, custos de emissão, restrições legais, financiamento.

1. INTRODUCTION

When firms seek external capital for their financing and thus interact with capital suppliers in the credit or capital markets, there may be factors that hinder this interaction. When these factors have a negative impact on the price and/or quantity equilibrium in these markets, they are interpreted as frictions in the interaction between the demanders and suppliers of capital. It is therefore possible to interpret such frictions as leading to financial constraints (Fazzari et al., 1988; Hubbard, 1998; Kaplan & Zingales, 1997).

In this context, financial constraints can be analyzed as obstacles, barriers to companies' external financing, and in practice can be perceived by firms in the form of a premium on the cost of external capital or even as a restriction on access to capital (Farre-Mensa & Ljungqvist, 2016).

With respect to financing, in addition to a higher cost of capital than would be obtained in the absence of frictions, financial constraints can lead to a different capital structure from that required by the firm, for example, with a lower proportion of debt in the capital structure or with a lower proportion of debt with longer maturities (Faulkender & Petersen, 2006).

Broadly defined, the frictions analyzed in the literature include market imperfections, such as asymmetric information, agency problems and other transaction costs (Levine, 2005); institutional factors, such as issues related to the protection of shareholders' and creditors' property rights, the availability of information from firms, the quality of accounting standards and government interference, such as corruption and political interference (Ayyagari et al., 2013); and macroeconomic factors, such as interest rates, inflation, the fiscal deficit and the exchange rate (Borensztein et al., 2008).

Thus, to the extent that any of these factors impedes the interaction between the demanders and suppliers of capital in the credit and capital markets, either by adding a premium to the cost of external capital, by restricting access to capital, or, in extreme situations, by causing the credit and capital markets to remain incipient, it can be considered a friction for external financing.

The purpose of this comprehensive specification of potential frictions is to show that, when analyzing developing financial systems, such as in the Brazilian case, such a perspective can make it possible to identify and study how particular frictions can be important

2

Rev. Contab. Finanç. – USP, São Paulo, v. 35, n. 96, e1962, 2024

and ultimately become major barriers to corporate financing.

It is in this gap that this study is positioned and aims to analyze the impacts on the financing of companies caused by reductions in transaction costs for participation in the Brazilian capital market, reductions caused by regulatory changes in the domestic capital market.

To this end, it is based on the evidence that there has been a development in the Brazilian capital market, motivated by the validity of the Brazilian Securities and Exchange Commission (*Comissão de Valores Mobiliários* [CVM]) Instruction n. 476 (Instrução CVM 476, 2009), which introduced a new mechanism for raising funds in this market and, therefore, there may have been a change in the form of financing of Brazilian companies, with an increase in financing through debt raised in the capital market to the detriment of bank resources (Tarantin & Valle, 2015).

In its original text, CVM Instruction 476 deals with public offerings of securities that are distributed with limited effort, i.e. they are offerings aimed at qualified investors and public search by investors is not permitted. Issuances made pursuant to CVM Instruction 476 are exempt from registration with the CVM and from the preparation of a distribution prospectus. Another fundamental aspect is that companies are not required to be registered with the CVM in order to issue securities under CVM Instruction 476, i.e. both public and private corporations can issue under this Instruction (with the exception of certain securities, e.g. shares).

Therefore, an analysis of CVM Instruction 476 allows us to conclude that this regulatory change in the Brazilian capital market may have reduced the barriers to external financing for the issuance of debentures in this market, potentially leading to a reduction in financial constraints for the issuance of securities in this market. Although CVM Instruction 476 covers various securities, the focus of this study is on debentures.

In terms of frictions, the reduction may have been due to the reduction in the costs of issuing on the domestic capital market, which made access to funds cheaper, and to the fact that the process for raising capital became faster, i.e. less bureaucratic. In addition, and perhaps one of the most important aspects, the regulatory change led to the removal of the legal barrier for private corporations, thus allowing companies that were previously unable to access

the domestic debenture market due to legal restrictions. Through CVM Instruction n. 400, December 29th, 2003, "traditional" offerings could be made by public companies (BM&FBovespa, 2015, p. 17).

Even in developed capital markets, such as the US, there is evidence that the cost of issuance is a significant barrier to external financing. For example, Gustafson and Iliev (2017) examine deregulation in the United States (U.S.) in 2008, which allowed "small" listed companies to issue shares through a procedure that provided faster access to capital and resulted in lower issuance costs compared to other issuance procedures. The authors found that these companies benefited from the lower cost of issuing shares and thus began to issue larger amounts of equity, leading to a reduction in leverage.

Gustafson and Iliev (2017, p. 580) argue that financing technologies with lower regulatory frictions affect company financing and investment, which, in the context of this study, allows us to interpret that CVM Instruction 476 may also have brought about relevant changes to the Brazilian capital market and led to a reduction in the financial constraints faced by Brazilian companies.

Empirically, this study examines the regulatory change brought about by CVM Instruction 476 as a natural experiment that may have caused an exogenous reduction in the financial constraints faced by Brazilian firms, evaluating its effect on total, long-term and short-term leverage measures.

The results show that CVM Instruction 476, by reducing the transaction costs of participating in the domestic capital market and, for private corporations, by eliminating the legal barrier, made it possible to increase the total and long-term leverage of corporations in general. Moreover, there is evidence that these effects have been greater for private corporations. This last piece of evidence is a particular contribution to the relevant literature because these firms have been scarcely studied in previous similar research, possibly due to the limited availability of data.

These results help to show that reducing market frictions allows firms to adjust their financing policies, as they did in the case of the natural experiment analyzed here. They also highlight the importance of taking into account the specific characteristics of different markets in order to identify their main frictions and formulate policies capable of mitigating them effectively.

2. THEORETICAL FRAMEWORK

Modigliani and Miller (1958) propose the theoretical basis for the value of the firm to be determined solely by

investment decisions, so that financing would not be a determinant of this value. A key point for this conclusion is

Rev. Contab. Finanç. – USP, São Paulo, v. 35, n. 96, e1962, 2024

3

that companies' cost of capital does not include premiums arising from frictions in the interaction between the demanders and suppliers of capital, since the conclusions are obtained assuming perfect capital markets and no restriction on external capital. Thus, there is no financial constraint in this modeled context.

Starting from the conclusion that financing decisions are not relevant, later studies began to analyze the factors that could make financing decisions relevant. In this sense, capital structure theories were developed by incorporating market imperfections into the models.

The trade-off theory incorporates, in addition to the tax benefits of debt, the costs of bankruptcy and reorganization and the costs arising from agency relationships, and the dynamic trade-off theory adds the influence of transaction costs, which represent the costs of adjusting the capital structure (Myers, 1984). The pecking order theory incorporates the asymmetry of information between managers and investors (Myers & Majluf, 1984), and the modified pecking order theory adds the costs of financial distress in addition to asymmetric information (Myers, 1984). The market timing theory recognizes that managers exploit moments of fluctuations in the cost of equity relative to the cost of other sources of capital, such that such issues have long-term impacts on the capital structure (Baker & Wurgler, 2002).

In addition, financing studies have begun to include new elements in the search to explain capital structure, thus broadening the scope of analysis. Among these elements, we can highlight the institutional and macroeconomic aspects of countries that can also influence corporate financing.

Booth et al. (2001) conclude that while there are similarities between developed and developing countries in the way certain variables affect company leverage, it is also affected differently by factors such as gross domestic product growth, inflation rates and capital market development. Thus, the authors find that institutional differences between countries, such as laws regulating bankruptcy and the preparation of financial statements, as well as the availability of different forms of financing, are relevant factors in explaining corporate financing.

In line with the analysis of the impacts of the institutional and economic environment on corporate financing, Fan et al. (2012), for a sample of firms in both developed and developing countries, find that some of the relevant factors in explaining leverage or debt maturity are the level of economic development of the countries, the type of legal protection of investors' rights,

tax issues related to the tax benefit of debt, the size of the government bond market and the size of the banking sector in the countries.

Graham et al. (2015) analyzed a sample of non-financial, listed on stock market and unregulated U.S. firms from 1920 to 2010 and found a substantial increase in aggregate leverage from the mid-twentieth century onwards. The authors conclude that the increase in leverage may have been driven by an increase in the propensity of firms to finance themselves through debt, which occurred due to the growth of financial intermediation (due to the monitoring and information gathering functions performed by financial intermediaries) and the reduction in government lending (due to substitution between securities competing for investors in the market).

Taken together, this evidence suggests that issues related to the economic and institutional environment of countries are relevant in explaining company financing, whether one is analyzing from a comparative perspective across countries or even analyzing a single country over time, depending on its economic and institutional environment.

One concept related to the external financing problems faced by firms is that of financial constraints. Farre-Mensa and Ljungqvist (2016) provide two perspectives on financial constraints, which refer to the impacts that frictions can have on price or quantity equilibria in the credit and capital markets.

Farre-Mensa and Ljungqvist (2016) point out that one definition of financial constraints is based on the difference between the cost of external financing and the opportunity cost of internal financing, a difference caused by frictions. The greater the difference, the greater the financial constraint. In this case, a firm facing financial constraints would only have access to external capital at a higher price than that which represents its true risk, represented by the opportunity cost of internal capital.

Farre-Mensa and Ljungqvist (2016) explain that the opportunity cost of internal financing is that which would be observed on the capital supply curve in a frictionless capital market. According to this definition of financial constraints, the firm faces an elastic external capital supply curve, i.e., it is able to raise external funds, but at a higher cost than that represented by the underlying risk.

Farre-Mensa and Ljungqvist (2016) explain that another definition is based on the curvature of the capital supply curve, i.e., the effect of frictions on the elasticity of the external capital supply curve. The

authors explain that the more inelastic the curve, the more costly it will be for the firm to obtain an additional unit of external capital, and at the limit, the supply curve may be perfectly inelastic, so that the firm is unable to obtain external capital. Therefore, by this definition, the firm is classified as financially constrained if it faces a highly inelastic capital supply curve, such that it would not be able to raise funds at any price even if it wanted to.

In this study, it is interpreted that firms observe the impacts of frictions through financial constraints. Thus, in terms of financing, a firm facing financial constraints may observe a high cost of external capital, i.e., a premium in the cost of external capital due to the effects of frictions, or it may observe a highly inelastic external capital supply curve, such that it would not be able to raise external funds at any price, a result also motivated by the effects of frictions (Farre-Mensa & Ljungqvist, 2016).

2.1 Hypotheses

It is plausible that the introduction of CVM 476 reduced the financial constraints faced by Brazilian companies, mainly by reducing the cost of issuing in the capital markets and the time required to raise funds. In addition, the Instruction allowed private corporations to access the debentures market, which was previously prohibited.

In this context, the financing of corporations is expected to be affected according to the following hypotheses:

H_1: CVM Instruction 476 had a positive impact on the total leverage of corporations.

H_2: The impact of CVM Instruction 476 on the long-term leverage of corporations was greater than the impact on their short-term leverage.

H_3: The impact of CVM Instruction 476 was more pronounced for private corporations than for other corporations.

Since the focus of this study is on debentures, i.e. debt issued by companies, the relationship proposed in hypothesis H_1 is direct. Companies that benefited from

CVM Instruction 476, especially those that were more financially constrained, were able to issue new debt under better conditions. In this way, it is plausible that they adjusted their target capital structure towards greater leverage, allowing them to reap the benefits of debt at a lower cost.

Faulkender and Petersen (2006) provide evidence that firms with access to the capital market are more leveraged than those without access, even after controlling for firms' demand for capital. Thus, it is suggested that firms that had little or no access to the capital market prior to CVM Instruction 476, either due to the cost of issuance or legal restrictions, took advantage of the regulatory change to increase their total leverage.

In addition to this general effect, given that the literature suggests that capital market resources are predominantly longer-term, especially compared to bank sources (Barclay & Smith, 1995), we propose to test hypothesis H_2 regarding debt maturity. The expected effect is a more pronounced increase in long-term leverage than in short-term leverage.

In addition, it is argued that companies that were more financially constrained prior to CVM Instruction 476 may have benefited more from the regulatory change, i.e., the reduction in financial constraints. A priori, private companies are expected to be, on average, more financially constrained than public companies due to the fact that they do not have access to the capital markets for public security issuances.

Brav (2009) argues that the absolute cost of accessing external capital is higher for private firms compared to public firms, indicating higher financing costs for private firms. Goyal et al. (2011) argue that private firms have limited access to external capital markets, which means that they are limited to internal resources and bank loans, and point out that private firms face high adjustment costs in their capital structure.

Therefore, a differential effect of CVM Instruction 476 is expected in the sense that private companies benefited more from the reduction of financial constraints, as proposed in hypothesis H_3.

3. RESEARCH METHOD

3.1 Empirical Approach

CVM Instruction 476 is interpreted as a natural experiment, that is, as an event that may have caused an exogenous shock to the financial constraints faced by public and private corporations. To study this event, empirical models are constructed using difference-in-differences (DD) designs (Imbens & Wooldridge, 2007; Meyer, 1995; Roberts & Whited, 2012), comparing treatment and control groups before and after the enactment of CVM Instruction 476.

CVM Instruction 476 potentially affected both public and private corporations. For this reason, all the corporations available in the sample (public or private) are first analyzed together and defined as the treatment group of the study. The treatment group is then divided into public and private corporations, as private corporations are expected be more sensitive to the regulatory change in question compared to public corporations.

A feature of the domestic capital market allows the control group to be defined. In Brazil, companies legally organized as limited liability companies ("limitada" or "Ltda.") are not allowed to issue debentures in the capital markets. One possible justification is that debentures are corporate debt securities, as they are included in Law n. 6,404 (Lei das Sociedades por Ações, 1976). Art. 52th of this law states that "The company may issue debentures that grant their holders credit rights against it, under the conditions set out in the deed of issue and, if applicable, in the certificate" (Lei das Sociedades por Ações, 1976). The Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários) (CVM, 2014, p. 74) defines that "Debentures are debt securities issued by joint-stock companies that grant their holders credit rights against the issuing company." Therefore, since companies organized as "limited liability companies" do not issue debentures in the Brazilian capital market, they are not affected by CVM Instruction 476 and are defined as the control group of the study.

Regarding the pre- and post-treatment periods, the definition is given by CVM Instruction 476 itself, i.e. the years before 2009 are defined as pre-treatment and the years from 2009 onwards are defined as post-treatment.

In conjunction with the DD-type designs, the matching procedure was used to select firms for the treatment and control groups that were similar in terms of observable characteristics. This procedure also aims to obtain parallel trends between the treatment and control groups for the dependent variables in the pre-treatment period. In this study, the propensity score matching (PSM) procedure was adopted using the nearest neighbor method, and the procedures were largely based on Lemmon and Roberts (2010).

Therefore, there are two empirical approaches to the models: (i) models estimated with the full available sample, i.e. ignoring the matching procedure; and (ii) models estimated after the matching procedure, so that firms that are not matched are removed from the sample.

3.2 Sample

To construct the sample for this study, a combination was made between data from S&P Capital IQ and data from the database used in the "Melhores e Maiores" ("Best and Biggest" companies) editions of Exame magazine, in partnership with the Institute of Accounting, Actuarial and Financial Sciences Foundation (Fundação Instituto de Pesquisas Contábeis, Atuariais e Financeiras [FIPECAFI]). The main objective of the combination is to increase the number of limited liability companies in the sample, since these companies are characterized as a control group and the information needed for them is not widely available in the main commercial databases. The analyses cover a sample for the years 2006 to 2014.

The databases were combined as follows: the data on "sociedades anônimas" (corporations) available in S&P Capital IQ and Melhores e Maiores were separated; similarly, the data on "limitadas" (limited companies) available in both databases were separated. In each of the two groups of companies, those that were present in one database but not in the other were compared, i.e. the exclusive companies were identified. This comparison was based on the companies' number of the Brazilian Register of Legal Entities (Cadastro Nacional da Pessoa Jurídica [CNPJ]). The exclusive companies constitute the final sample.

For the companies in both databases, the number of observations in each database was compared, with the sample in this study containing information from the database with the highest number of observations for the company. In Melhores e Maiores, there are companies that are classified as corporations in certain years and as limited liability companies in other years. These companies were excluded from the sample as they are companies that

6

Rev. Contab. Financ. – USP, São Paulo, v. 35, n. 96, e1962, 2024

moved between the treatment and control groups of the study. After combining, there were 7,905 corporations and 652 limited liability companies in the initial (potential) database.

Other exclusions from the sample are firms in the financial sector; firms with zero total assets in all years; observations with net equity less than or equal to zero; firms with no sales revenue in any of the years in the sample; firms classified as limited liability companies, but with their CNPJ found at the CVM; observations in which the amount of debt raised through CVM Instruction 476 exceeds total assets in the same year; firms for which a debt raising was found in a given year but total debt was reported in the database as zero (these procedures are designed to reduce errors in reconciling the databases by CNPJ); companies for which essential information for the preparation of the variables was not identified (such as the CNPJ); observations in which short- or long-term leverage were less than 0 or greater than 1.

The DD models require observations for the periods before (before 2009) and after (from 2009) the instruction came into force. Therefore, only firms with at least one observation before 2009 and at least one observation from 2009 onwards were kept in the sample. This procedure is based on Lemmon and Roberts (2010), who retain firms in their sample based on this criterion.

Finally, after all the treatments, the sample in this study contained 572 companies, in 4,665 observations, since the need for observations prior to 2009 is restrictive for the sample in this study. Of these, 486 are public corporations and 86 are limited liability companies.

3.3 Model Specification

3.3.1 Models without the matching procedure

The DD model for the general analysis of the effects of CVM Instruction 476 on the financing of the companies in question is specified in equation 1:

$$Dep\ Var_{it} = \beta_0 + \boldsymbol{\beta_1 Treated_i\ x\ Post_t} + \beta_2 (Mean\ Size_{it<2009}\ x\ Year_t)_{it} + \beta_3 (Mean\ Profitability_{it<2009}\ x\ Year_t)_{it} +$$
$$\beta_4 (Mean\ Tangibility_{it<2009}\ x\ Year_t)_{it} + \beta_5 (Mean\ Sales\ Growth_{it<2009}\ x\ Year_t)_{it} +$$
$$\beta_6 (Mean\ Liquidity_{it<2009}\ x\ Year_t)_{it} + a_i + b_t + \varepsilon_{it}$$

$\boxed{1}$

The dependent variable ($Dep\ Var_{it}$) is represented in different models by the variables total leverage, long-term leverage or short-term leverage. The coefficient of interest β_1 represents the impact of CVM Instruction 476 on the treated companies, i.e. all corporations. The variable $Treated_i\ x\ Post_t$ takes the value of 1 for corporations in the years from 2009 (i.e., the years in which the Instruction was in force), and 0 in all other cases. The control variables are firm size, profitability, tangibility, sales growth and liquidity, which represent firm characteristics and are among the most common control variables found in capital structure studies (Fan et al., 2012; Graham et al., 2015).

According to Roberts and Whited (2012), when including controls in the model, it is important that they are not affected by the event itself. In this sense, in accordance with Lemmon and Roberts (2010), who use the averages of the variables in the pre-treatment period

in the PSM procedure, here the averages of the control variables in the years prior to 2009 (pre-treatment) are used in the regression and are therefore constant for each firm i. However, since the model is estimated with firm (a_i) and year (b_t) fixed effects, the parameters of the variables that do not vary both longitudinally (within) and across (between) firms are not identified. To obtain the necessary variation in the control variables, the means of each variable in the pre-treatment period (t<2009) are multiplied by a variable representing the time trend ($Year_t$). In this case, since the sample includes the years 2006 to 2014, the year 2006 is assigned a value of 1; the year 2007 is assigned a value of 2; and so on, the year 2014 is assigned a value of 9.

In order to investigate the additional impacts of CVM Instruction 476 on private corporations, the model represented by Equation 2 was estimated:

$$Dep\ Var_{it} = \alpha_0 + \boldsymbol{\alpha_1 Private\ Treated_i\ x\ Post_t} + \boldsymbol{\alpha_2 Treated_i\ x\ Post_t} + \alpha_3 (Mean\ Size_{it<2009}\ x\ Year_t)_{it} + \alpha_4 (Mean\ Profitability_{it<2009}\ x\ Year_t)_{it} +$$
$$\alpha_5 (Mean\ Tangibility_{it<2009}\ x\ Year_t)_{it} + \alpha_6 (Mean\ Sales\ Growth_{it<2009}\ x\ Year_t)_{it} + \alpha_7 (Mean\ Liquidity_{it<2009}\ x\ Year_t)_{it} + u_i + c_t + n_{it}$$

$\boxed{2}$

In this model, the coefficient of interest α_1 represents the differential impact of CVM Instruction 476 for private corporations compared to the effect for public corporations, so that α_1 will be equal to 0 if the average

impact of the regulatory change is identical for both types of corporation. The variable $Private\ Treated_i\ x\ Post_t$ takes the value of 1 for private corporations in the years from 2009 onwards (post-treatment), and the value of 0 in all

Rev. Contab. Finanç. – USP, São Paulo, v. 35, n. 96, e1962, 2024

7

other cases. More specifically, the variable *Private Treated*$_i$ *x Post*$_t$ captures the additional average difference in *Dep Var*$_{it}$ from the pre-CVM Instruction 476 period to the post-CVM Instruction 476 period between private treated corporations compared to public treated corporations.

Model (2) is analogous to a difference-in-difference--in-differences (DDD) design, with the peculiarity that the triple interaction (*Private Treated*$_i$ *x Treated*$_i$ *x Post*$_t$) cannot be included because it is perfectly collinear with the double interactions highlighted above, since private corporations (*Private Treated*) are a subset of corporations in general (*Treated*). In this case, unlike a typical DDD design with two control groups, there is 1 control group (limited liability companies) and 2 subgroups with different treatment intensities (private and public corporations).

The variable *Treated*$_i$ *x Post*$_t$ takes the value of 1 for all corporations in the years from 2009 onwards (post-treatment) and the value of 0 in all other cases. In model (2), α_2 captures the average difference in *Var Dep*$_{it}$ from the pre-CVM Instruction 476 period to the post-CVM Instruction 476 period between public treated and limited liability companies. The total average effect for private treated companies relative to the same control group is equal to the sum of α_1 and α_2. The terms u_i and c_t represent firm and year fixed effects, respectively.

3.3.2 Models estimated after the matching procedure

Models are also proposed in which the firms for the treatment and control groups are selected from the full sample using the PSM procedure.

The matching procedures are based on Lemmon and Roberts (2010) and on estimating the probit model, where the dependent variable has a value of 1 if it is a firm in the treatment group (all corporations) and a value of 0 if it is a firm in the control group (limited liability companies). The explanatory variables in the model are the variables that represent the characteristics of the firms: size, profitability, tangibility, sales growth and liquidity. The probit model is estimated on cross-sectional data, so that the explanatory variables are defined as the respective averages for the pre-treatment period (before 2009). In addition to the variables with firm characteristics, sector fixed effects and four variables indicating the average growth in the pre-treatment period of variables representing the firms' activities were added.

The four growth variables refer to the change in total leverage, the change in long-term leverage, the change in liquidity and the change in tangibility. Therefore, for each of the four indices, the differences between year *t* and year *t-1* were obtained and then the averages for the pre-treatment period were obtained. These averages are used as explanatory variables in the probit model.

After estimating the probit parameters and obtaining the predicted values based on this model, i.e. the propensity score for each firm, the second step is to match these scores. The one-to-one nearest neighbor method is used, where a firm from the control group is selected for a firm in the treatment group, with replacement of the firms in the control group and with the criterion that the matching must occur for firms in the common support.

It was decided to match a firm from the treatment group with a firm from the control group in order to compare the most similar firms in the sample (in terms of propensity score). Matching with replacement was chosen because the control group (86 firms) is smaller than the treatment group (486 firms), so there are not enough firms in the control group for matching without replacement.

Firms in the treatment and control groups that are not matched are dropped from the sample. On the other hand, for the firms selected using the procedure described, the matched treatment and control groups are used in regression models similar to those described above. According to Lemmon and Roberts (2010), after the PSM procedure, it is expected that it will not be necessary to add controls to the regression model because the firms in the treatment and control groups would be matched on all relevant observable characteristics. Thus, the models estimated after matching include firm and year fixed effects, but no control variables.

3.4 Operational Definition of the Variables

Table 1 shows the calculation of the other variables in the models. All variables except leverage were winsorized at the 1st and 99th percentiles of the original variable.

Table 1

Operationalization of the variables

Dependent Variables	Control Variables
$\text{Total Leverage}_{it} = \dfrac{\text{Total Debts}_{it}}{\text{Total Assets}_{it}}$	$\text{Size}_{it} = \text{Ln}(\text{Total Assets}_{it})$
$\text{LT Leverage}_{it} = \dfrac{\text{Long Term Debts}_{it}}{\text{Total Assets}_{it}}$	$\text{Profitability}_{it} = \dfrac{\text{Net Income}_{it}}{\text{Total Assets}_{it}}$
$\text{ST Leverage}_{it} = \dfrac{\text{Short Term Debts}_{it}}{\text{Total Assets}_{it}}$	$\text{Tangibility}_{it} = \dfrac{\text{Fixed Assets}_{it}}{\text{Total Assets}_{it}}$
	$\text{Sales Growth}_{it} = \dfrac{(\text{Sales}_{it} - \text{Sales}_{it-1})}{\text{Total Assets}_{it-1}}$
	$\text{Liquidity}_{it} = \dfrac{\text{Cash Flow}_{it}}{\text{Total Assets}_{it}}$

Note: *LT: long term; ST: short term; subscript i refers to the company; subscript t refers to the year. The term "debts" refers to onerous debts such as loans, financing and leasing.*
Source: *Prepared by the authors.*

3.5 Company Registration with the CVM

One aspect of interest in the analysis is the company's registration with the CVM, i.e. the classification between public and private companies.

For the classification, the information on public and foreign companies available on the CVM website was used. The matching with the databases in this study was carried out by CNPJ, and when the company was found in the CVM databases, the following criteria were adopted: (i) if the company's registration is "active," it is classified as "public" in the year in which it was registered with the CVM and in subsequent years, and as "private" in previous years; (ii) if the company's registration is "canceled" or "suspended," it is classified as "private" in the year in which it was canceled or suspended and in subsequent years, and as "public" in previous years, also taking into account that it was classified as "private" in the years prior to the date of the company's registration with the CVM. On the other hand, if the company could not be found in the CVM database through the CNPJ, it was considered to be a private company for all the years in the sample. In this sense, it is worth mentioning that there are companies that changed their status during the years of the sample, i.e. from public to private and vice versa.

4. RESULTS

Table 2 presents the descriptive statistics for the variables. These statistics refer to the models evaluated before the PSM procedure. The models evaluated for the treatment and control groups formed by the PSM contain fewer firms and observations because, after the procedure, firms that were not matched were removed from the sample.

Rev. Contab. Finanç. – USP, São Paulo, v. 35, n. 96, e1962, 2024

9

Table 2
Descriptive statistics (full sample before PSM)

	Obs	Mean	SD	Min	P25	P50	P75	Max
Total leverage	4,665	0.2729	0.1934	0.0000	0.1063	0.2659	0.4121	0.9021
LT leverage	4,665	0.1787	0.1600	0.0000	0.0345	0.1522	0.2789	0.8858
ST leverage	4,665	0.0942	0.1010	0.0000	0.0221	0.0647	0.1315	0.7459
Size	4,665	7.0418	1.6798	-0.0126	5.9275	6.9879	8.1599	10.2891
Profitability	4,665	0.0508	0.0971	-0.4795	0.0072	0.0421	0.0867	0.7178
Tangibility	4,665	0.3081	0.2585	0.0000	0.0820	0.2614	0.4768	0.9795
Sales growth	4,015	0.1367	0.3216	-0.8034	0.0050	0.0635	0.1928	2.7671
Liquidity	4,665	0.1112	0.1228	0.0000	0.0266	0.0721	0.1525	0.8282

Note: *LT: long term; ST: short term; Obs: number of observations; SD: standard deviation; Min: minimum value; P25: 25th percentile; P50: median; P75: 75th percentile; Max: maximum value. The presence of a negative "size" in this sample is justified by the fact that the variable is defined as the Napierian logarithm of total assets.*
Source: *Prepared by the authors.*

The statistics in Table 2 refer to 572 companies, of which 86 are limited liability companies (619 observations) and 486 are corporations (4,046 observations). Of the corporations, 119 are private in all years of the sample (961 observations) and 367 are always public or have changed status (3,085 observations).

Table 3
Descriptive statistics (treatment group before PSM)

	Obs	Mean	SD	Min	P25	P50	P75	Max
Total leverage	4,046	0.2909	0.1884	0.0000	0.1440	0.2879	0.4244	0.9021
LT leverage	4,046	0.1966	0.1606	0.0000	0.0601	0.1743	0.2965	0.8858
ST leverage	4,046	0.0943	0.0969	0.0000	0.0273	0.0670	0.1300	0.7459
Size	4,046	7.1833	1.7135	-0.0126	6.0975	7.1760	8.3352	10.2891
Profitability	4,046	0.0458	0.0950	-0.4795	0.0050	0.0401	0.0831	0.7178
Tangibility	4,046	0.3252	0.2668	0.0000	0.0828	0.2886	0.5074	0.9795
Sales growth	3,510	0.1180	0.2981	-0.8034	0.0038	0.0553	0.1587	2.7671
Liquidity	4,046	0.1117	0.1230	0.0000	0.0287	0.0735	0.1500	0.8282

Note: *LT: long term; ST: short term; Obs: number of observations; SD: standard deviation; Min: minimum value; P25: 25th percentile; P50: median; P75: 75th percentile; Max: maximum value. The presence of a negative "size" in this sample is justified by the fact that the variable is defined as the Napierian logarithm of total assets.*
Source: *Prepared by the authors.*

Table 4
Descriptive statistics (control group before PSM)

	Obs	Mean	SD	Min	P25	P50	P75	Max
Total leverage	619	0.1550	0.1837	0.0000	0.0006	0.0636	0.2519	0.7512
LT leverage	619	0.0614	0.0928	0.0000	0.0000	0.0080	0.0950	0.5761
ST leverage	619	0.0937	0.1246	0.0000	0.0001	0.0295	0.1496	0.5790
Size	619	6.1165	1.0433	3.8821	5.3134	6.0822	6.8360	9.1296
Profitability	619	0.0834	0.1042	-0.2637	0.0218	0.0606	0.1230	0.7178
Tangibility	619	0.1963	0.1551	0.0000	0.0792	0.1498	0.2864	0.8083
Sales growth	505	0.2669	0.4309	-0.8034	0.0392	0.2109	0.4174	2.7671
Liquidity	619	0.1079	0.1214	0.0000	0.0158	0.0580	0.1690	0.6982

Note: *LT: long term; ST: short term; Obs: number of observations; SD: standard deviation; Min: minimum value; P25: 25th percentile; P50: median; P75: 75th percentile; Max: maximum value.*
Source: *Prepared by the authors.*

Tables 3 and 4 detail the statistics between the treatment and control groups. Comparing the treated firms with control group firms, one general aspect can be highlighted: they are firms with different characteristics. The limited liability companies use a lower proportion of total and long-term debt, are smaller, more profitable, have a lower proportion of tangible assets and have higher sales growth. Liquidity is, on average, similar between the two groups.

In this context, the general comparison of the descriptive statistics between the groups justifies the matching procedure between the firms in the treatment and control groups. After the matching procedure, 377 firms remained in the sample, 314 in the treatment group and 63 in the control group. Of the 314 treated firms, 81 are always private companies.

Although not all the differences in the means of the variables between the treatment and control groups were eliminated, as in the case of size and tangibility, the other variables do not show significant differences in means in the pre-treatment period for the matched sample (for some variables there was even no relevant difference even before matching). It can be assumed that the PSM procedure, while not eliminating all differences between the treatment and control groups, brought the two groups closer together in terms of their observable characteristics and thus created a better comparison group.

4.1 General Analysis: All Corporations as a Treatment Group

First, the tests for parallel trends in the pre-CVM Instruction 476 period are presented for the dependent variables analyzed below. Table 5 shows the test results for the full sample, but qualitatively similar results are obtained for the sample matched by PSM.

The first three columns of Table 5 show the results of regression models for panel data, estimated with firm and time fixed effects, where the dependent variables and observations are the same as those analyzed in models (1) and (2) described above. The aim is to analyze, year by year, through the coefficients of the interaction variables (Treat x 'Year'), which represent the interaction between the dummy variable indicating the treated companies (i.e. corporations = 1; limited liability companies = 0) and the sample year dummies, whether there are differences between the groups in the evolution of the dependent variable during each year with respect to a base year (in this case 2006, the first year of the sample).

As a test of parallel trends, the ideal is to observe estimated coefficients close to 0 and statistically insignificant in the interactions referring to the pre-treatment years (Treat x 2007 and Treat x 2008), i.e., given that there could be no influence of the natural experiment in this period, no differences are expected in the trends of the treatment and control groups in the pre-event years (with respect to the base year, which is pre-event). On the other hand, if the natural experiment has an impact, statistically significant estimates are expected for the interactions in the post-treatment years (2009 to 2014). The last column of Table 5 presents a similar analysis, but the effects on the total leverage of the private treated companies are separated by the interactions Private Treated x 'Year'.

Table 5
Parallel trend diagnostics (before PSM)

	Total Leverage	LT Leverage	ST Leverage	Total Leverage
Treat x 2007	**-0.00554**	**0.000886**	**-0.00643**	**-0.00973**
	(0.0123)	(0.00980)	(0.00824)	(0.0126)
Treat x 2008	**0.0177**	**0.0189**	**-0.00115**	**0.0148**
	(0.0167)	(0.0119)	(0.0112)	(0.0171)
Treat x 2009	**0.0329****	**0.0200***	**0.0130**	**0.0291***
	(0.0157)	(0.0114)	(0.0105)	(0.0162)
Treat x 2010	**0.0369****	**0.0252***	**0.0117**	**0.0290**
	(0.0171)	(0.0129)	(0.0117)	(0.0177)
Treat x 2011	**0.0538*****	**0.0432*****	**0.0105**	**0.0451****
	(0.0172)	(0.0138)	(0.00913)	(0.0177)
Treat x 2012	**0.0487*****	**0.0477*****	**0.00104**	**0.0409****
	(0.0182)	(0.0145)	(0.0104)	(0.0189)

Rev. Contab. Finanç. – USP, São Paulo, v. 35, n. 96, e1962, 2024

11

Table 5
Cont.

	Total Leverage	LT Leverage	ST Leverage	Total Leverage
Treat x 2013	**0.0447****	**0.0433*****	**0.00138**	**0.0304**
	(0.0206)	(0.0153)	(0.0132)	(0.0212)
Treat x 2014	**0.0647*****	**0.0452*****	**0.0196**	**0.0458****
	(0.0213)	(0.0151)	(0.0157)	(0.0220)
Private Treat x 2007				**0.0182**
				(0.0129)
Private Treat x 2008				**0.0122**
				(0.0165)
Private Treat x 2009				**0.0157**
				(0.0192)
Private Treat x 2010				**0.0334***
				(0.0199)
Private Treat x 2011				**0.0366***
				(0.0220)
Private Treat x 2012				**0.0331**
				(0.0225)
Private Treat x 2013				**0.0591****
				(0.0235)
Private Treat x 2014				**0.0782*****
				(0.0228)
Constant	0.230***	0.151***	0.0788***	0.230***
	(0.00558)	(0.00450)	(0.00293)	(0.00555)
Year Fixed Effects	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES
No. Obs.	4,665	4,665	4,665	4,665

Note: *LT: long term; ST: short term. Robust standard errors clustered at the firm level are shown in parentheses.*
*** indicates a significant coefficient at the 1% level; ** indicates a significant coefficient at the 5% level; * indicates a significant coefficient at the 10% level.
Source: *Prepared by the authors.*

Looking at the general results for the firms included in the first three columns of Table 5, none of the estimates for the Treat x 2007 and Treat x 2008 interactions are significant at conventional levels, evidence consistent with the assumption of parallel trends. On the other hand, there were larger and statistically significant coefficients at conventional levels in the years in which CVM Instruction 476 was in effect, providing evidence of the impact of the reduction in financial constraints. Similar evidence is seen in the estimates of the interactions Private Treat x 2007 and Private Treat x 2008 in the last column of Table 5, i.e., there is no significant effect in the pre-treatment period for private treated companies, while the effects are greater and significant in the period when CVM Instruction 476 is in force.

Table 6 shows the results for total leverage, long-term leverage and short-term leverage in the full sample models (before PSM).

Table 6
Original sample (before PSM) regressions based on equation (1)

	Total Leverage	LT Leverage	ST Leverage
Treated x Post	**0.0666*****	**0.0486*****	**0.0179****
	(0.0131)	(0.00928)	(0.00743)
Size	-0.00143*	-0.000203	-0.00123***
	(0.000734)	(0.000625)	(0.000339)
Profitability	0.0385**	0.0400**	-0.00147
	(0.0175)	(0.0157)	(0.00608)
Tangibility	-0.0176***	-0.0147***	-0.00291
	(0.00590)	(0.00499)	(0.00284)
Sales Growth	-0.000291	0.00220	-0.00249
	(0.00322)	(0.00258)	(0.00201)
Liquidity	0.00344	-0.00279	0.00623
	(0.0114)	(0.00875)	(0.00597)
Constant	0.243***	0.155***	0.0879***
	(0.00720)	(0.00613)	(0.00370)
Year Fixed Effects	YES	YES	YES
Firm Fixed Effects	YES	YES	YES
No. Obs.	4,665	4,665	4,665
No. Companies	572	572	572
F Test P-Value	0.000	0.000	0.000
F Statistic	11.81	8.22	6.47
R² Within	0.0916	0.0612	0.0319
R² Between	0.0393	0.0405	0.0004
Overall R²	0.0005	0.0023	0.0081

Note: *LT: long term; ST: short term. The statistics in parentheses are the robust standard errors clustered at the firm level (robust to arbitrary forms of heteroskedasticity and autocorrelation of the model errors). The F statistic and p-value of the F test are used to analyze the significance of the model. The control variables are calculated based on the average values per company in the pre-event years and multiplied by a variable representing time trends.*
*** indicates a significant coefficient at the 1% level; ** indicates a significant coefficient at the 5% level; * indicates a significant coefficient at the 10% level.
Source: *Prepared by the authors.*

Table 7 shows the results of the matched group models. Analyzing the matched sample models estimated by PSM (Table 7), the results indicate (assuming the validity of the parallel trends assumption) that CVM Instruction 476 had a positive and significant effect, at the 1% significance level, on the total leverage and long-term leverage of the corporations, i.e. the treated companies. The average effect of the treatment on the treated firms, estimated after the PSM, is about 4.5 percentage points (p.p.) and 3.7 p.p. for total and long-term leverage, respectively. Although the coefficients were smaller in the post-PSM models than in the pre-PSM models (Table 6), it is plausible that this reduction is due to the greater similarity of the firms in the treatment and control groups.

Table 7
Matched sample regressions via PSM based on equation (1)

	Total Leverage	LT Leverage	ST Leverage
Treated x Post	**0.0446***	**0.0369***	**0.00775**
	(0.0147)	(0.0102)	(0.00842)
Constant	0.219***	0.134***	0.0844***
	(0.00673)	(0.00520)	(0.00395)
Year Fixed Effects	YES	YES	YES
Firm Fixed Effects	YES	YES	YES
No. Obs.	3,080	3,080	3,080
No. Companies	377	377	377
F Test P-Value	0.000	0.000	0.000
F Statistic	12.84	9.31	5.33
R² Within	0.0899	0.0713	0.0213
R² Between	0.0507	0.0964	0.0044
Overall R²	0.0477	0.0568	0.0052

Note: *LT: long term; ST: short term. The statistics in parentheses are the robust standard errors clustered at the firm level (robust to arbitrary forms of heteroskedasticity and autocorrelation of the model errors). The F statistic and p-value of the F test are used to analyze the significance of the model.*
*** indicates a significant coefficient at the 1% level; ** indicates a significant coefficient at the 5% level; * indicates a significant coefficient at the 10% level.
Source: *Prepared by the authors.*

Therefore, the average difference in total leverage between treatment group companies and control group companies increased by approximately 4.5 p.p. in the post-CVM Instruction 476 period compared to the same difference in the pre-CVM Instruction 476 period. For long-term leverage, the estimated increase in the difference is 3.7 p.p., i.e., a large part of the increase in total leverage comes from the long-term component of debt.

For short-term leverage, the result estimated in the post-PSM model suggests that there are no significant differences caused by CVM Instruction 476, which is consistent with the evidence that capital market resources are, on average, longer-term capital. In the pre-PSM model, there is a positive and significant effect on short-term leverage at the 5% significance level, making the result for short-term leverage less conclusive than the others. It can be interpreted that while there is an effect, it is not significant enough to retain its statistical significance after the sample matching procedure.

Therefore, these results provide evidence consistent with the argument that CVM Instruction 476 eased the financial constraints for Brazilian companies to issue debentures on the domestic capital market. These companies may have taken advantage of the lower issuance costs and time and the elimination of the legal barrier (in the case of private companies) to issue debt through the Instruction, resulting in greater debt financing,

especially long-term debt. This evidence is consistent with hypotheses H_1 and H_2 proposed in this study.

4.2 Specific Analysis: Private Corporations as a Separate Group

Analyzing the models with groups formed by the matching procedure (Table 9), the results are consistent with the hypothesis that CVM Instruction 476 had a greater impact on the total and long-term leverage of private companies. The estimates indicate that the incremental effect for the group of private treated firms relative to the group composed of public treated firms and treated firms that changed status from the pre-CVM Instruction 476 period to the post-CVM Instruction 476 period is on average 5.5 p.p. for total leverage and 4.1 p.p. for long-term leverage, i.e. most of the variation in total leverage comes from the long-term component of debt.

In graphical analyses (not reported), it can be seen that in the pre-CVM Instruction 476 period, private treated firms were on average less leveraged than public treated firms and those that changed status. In the post-CVM Instruction 476 period, the trend is reversed, as private treated firms tend to be more leveraged on average in the most recent years of the sample (2013 and 2014). The growth in the long-term leverage of private treated companies begins to increase more sharply in 2010.

14

Rev. Contab. Finanç. – USP, São Paulo, v. 35, n. 96, e1962, 2024

Table 8
Original sample (pre-PSM) regressions based on equation (2)

	Total Leverage	LT Leverage	ST Leverage
Treated x Post	**0.0592*****	**0.0431*****	**0.0161****
	(0.0139)	(0.00998)	(0.00772)
Private Treated x Post	**0.0265***	**0.0197**	**0.00671**
	(0.0150)	(0.0128)	(0.00709)
Size	-0.00132*	-0.000120	-0.00120***
	(0.000738)	(0.000630)	(0.000338)
Profitability	0.0366**	0.0386**	-0.00195
	(0.0170)	(0.0152)	(0.00612)
Tangibility	-0.0174***	-0.0146***	-0.00285
	(0.00589)	(0.00499)	(0.00283)
Sales growth	-0.000697	0.00190	-0.00260
	(0.00318)	(0.00255)	(0.00202)
Liquidity	0.00580	-0.00103	0.00683
	(0.0116)	(0.00890)	(0.00605)
Constant	0.242***	0.155***	0.0877***
	(0.00724)	(0.00618)	(0.00370)
Year Fixed Effects	YES	YES	YES
Firm Fixed Effects	YES	YES	YES
No. Obs.	4,665	4,665	4,665
No. Companies	572	572	572
F Test P-Value	0.000	0.000	0.000
F Statistic	11.76	7.95	6.13
R² Within	0.0939	0.0628	0.0323
R² Between	0.0399	0.0410	0.0003
Overall R²	0.0006	0.0025	0.0080

Note: *LT: long term; ST: short term. The statistics in parentheses are the robust standard errors clustered at the firm level (robust to arbitrary forms of heteroskedasticity and autocorrelation of the model errors). The F statistic and p-value of the F test are used to analyze the significance of the model. The control variables are calculated based on the average values per company in the pre-event years and multiplied by a variable representing time trends.*
*** indicates a significant coefficient at the 1% level; ** indicates a significant coefficient at the 5% level; * indicates a significant coefficient at the 10% level.
Source: *Prepared by the authors.*

Public companies and those that changed their status also used CVM Instruction 476 for debt financing, but to a lesser extent. The results show an effect for these firms in the order of 3.1 p.p. for total leverage and 2.7 p.p. for long-term leverage, on average, as shown in Table 9. The difference in the significance of the estimates for short-term leverage between the results in tables 8 and 9 may reflect the effects of sample matching.

Table 9

Paired sample regressions via PSM based on equation (2)

	Total Leverage	LT Leverage	ST Leverage
Treated x Post	**0.0310****	**0.0267****	**0.00432**
	(0.0151)	(0.0105)	(0.00866)
Private Treated x Post	**0.0550*****	**0.0412*****	**0.0138**
	(0.0184)	(0.0155)	(0.00919)
Constant	0.218***	0.134***	0.0843***
	(0.00664)	(0.00516)	(0.00393)
Year Fixed Effects	YES	YES	YES
Firm Fixed Effects	YES	YES	YES
No. Obs.	3,080	3,080	3,080
No. Companies	377	377	377
F Test P-Value	0.000	0.000	0.000
F Statistic	12.71	8.91	5.21
R² Within	0.1005	0.0794	0.0231
R² Between	0.0216	0.0364	0.0000
Overall R²	0.0411	0.0432	0.0075

Note: *LT: long term; ST: short term. The statistics in parentheses are the robust standard errors clustered at the firm level (robust to arbitrary forms of heteroskedasticity and autocorrelation of the model errors). The F statistic and p-value of the F test are used to analyze the significance of the model.*
*** indicates a significant coefficient at the 1% level; ** indicates a significant coefficient at the 5% level; * indicates a significant coefficient at the 10% level.
Source: *Prepared by the authors.*

Thus, these results provide evidence that the impact is greater on the total and long-term leverage of private companies, in line with the hypothesis (H_3) that these companies should be more sensitive to the Instruction since they did not have access to the domestic capital market prior to CVM Instruction 476.

5. CONCLUSIONS

It is concluded that reducing market frictions can significantly reduce the financial constraints faced by firms. The results are consistent with the argument that the reduction in the cost of issuing debentures, the speeding up of the fundraising process and the removal of legal barriers to financing through the domestic capital market (the latter benefit directed at private corporations) have allowed firms to finance themselves with a greater proportion of debt, especially long-term debt. It is possible that this behavior reflects adjustments in the target capital structure towards greater leverage, taking advantage of the lower financial constraints on raising debt.

As Levine (2005, p. 868) argues, the academic literature suggests that "better functioning financial systems alleviate the external financial constraints faced by firms that impede the expansion of the firm and its sector, suggesting that this is a mechanism by which financial development matters for [economic] growth." In this sense, this study illustrates the relevance of addressing the specificities of the Brazilian capital market in order to understand, identify and ultimately reduce the relevant barriers to corporate financing, thus allowing this mechanism for economic growth to be strengthened.

As a suggestion for future research, it is important to evaluate the impact of CVM Instruction 476 on other corporate variables, such as investments in long-term assets, liquidity levels, dividend payments, among others.

Regarding the limitations of this study, although the models used aim to identify the causal effects of interest, it should be noted that the estimates reported here may differ from the true causal effect in the population. However, it is worth pointing out that the methodological procedures used, such as the use of a control group, matched samples and parallel trend tests, aim to estimate the effects of interest as accurately as possible.

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17