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ESSAYS ON CORPORATE RESTRUCTURING

SÃO PAULO 2015

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Tese apresentada à Escola de Administração de Empresas da Fundação Getulio Vargas, como requisito para obtenção do título de Doutor em Administração de Empresas

Campo de Conhecimento: Finanças

Orientador: Prof. Dr. Richard Saito

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RESUMO

Esta tese tem por objetivo examinar as características do processo de decisão em que credores optam pela recuperação judicial ou liquidação da empresa em dificuldade financeira. O trabalho está dividido em quatro capítulos. No segundo capítulo, apresenta-se, de forma sistematizada, referencial teórico e evidências empíricas para apontar resultados importantes sobre estudos desenvolvidos nas áreas de recuperação de empresas e falência. O capítulo também apresenta três estudos de caso com o propósito de mostrar a complexidade de cada caso no que diz respeito à concentração de recursos, conflito de interesse entre as classes de credores e a decisão final sobre a aprovação ou rejeição do plano de recuperação judicial. No terceiro capítulo, analisam-se os determinantes do atraso pertinente à votação do plano de recuperação judicial. O trabalho propõe um estudo empírico dos atrasos entre 2005 e 2014. Os resultados sugerem que: (i) maior concentração da dívida entre as classes de credores possui relação com atrasos menores; (ii) maior quantidade de bancos para votar o plano de recuperação judicial possui relação com maiores atrasos; (iii) o atraso médio na votação diminui quando apenas uma classe de credores participa da votação do plano; (iv) credores trabalhistas e com garantia real atrasam a votação quando o valor dos ativos para garantir a dívida em caso de liquidação é maior; (v) o atraso médio na votação é maior em casos de pior desempenho do setor de atuação do devedor, sendo solicitado pelas classes quirografária e com garantia real; e (vi) a proposta de venda de ativos é o principal tópico discutido nas reuniões de votação do plano nos casos em que o atraso na votação é maior. Por fim, no quarto capítulo, apresenta-se evidência sobre a votação dos credores e a probabilidade de aprovação do plano de recuperação judicial. Os resultados sugerem que: (i) credores trabalhistas estão propensos a aprovar o plano de recuperação mesmo quando o plano é rejeitado pelas demais classes; (ii) planos com propostas de pagamento mais heterogêneas para as três classes de credores possuem menor chance de serem aceitos; (iii) a chance de aprovação do plano diminui nos casos em que mais credores quirografários participam da recuperação; e (iv) planos com proposta de venda de ativos possuem maior chance de serem aprovados. Finalmente, maior concentração da dívida na classe com garantia real diminui a chance de aprovação do plano, e o contrário ocorre na classe quirografária.

Palavras-chave: Reestruturação de empresas, plano de recuperação, atraso, falência.

ABSTRACT

This thesis examines the characteristics of the decision-making process of creditors with respect to either pursuing court reorganization or bankruptcy. It is divided into four chapters, which have been written as stand-alone papers. The second chapter provides a general review of the theoretical and empirical papers on reorganization and bankruptcy. It also describes three case studies to show the complexity of each case in terms of the concentration of claims, disparities of interest among the three classes of creditors and the final decision regarding the approval or rejection of the reorganization plan. The third chapter studies the determinants of delay in corporate reorganizations. It empirically investigates delays in voting on reorganization plans between 2005 and 2014, suggesting that (i) a high concentration of debt among classes of claimholders is related to shorter delays; (ii) a higher number of banks holding claims is related to longer delays; (iii) the average delay decreases considerably when only one class is voting on the plan; (iv) labor and secured creditors demand a delay when the level of collateral is higher; (v) the average delay is longer when the performance of the debtor's sector is lower and the delay is demanded by secured or unsecured classes; and (vi) a divestment proposal is the main topic discussed by claimholders in cases with longer delays. The fourth chapter presents evidence on the approval of the reorganization plan. To the best of our knowledge, this is the first study to analyze the likelihood of approval based on reorganization plans for creditors that require approval by employees and secure and unsecure debtholders. We find that (i) the labor class of creditors is likely to approve the reorganization plan even when the plan is rejected, (ii) plans with more heterogeneous payment for classes are less likely to be accepted, (iii) plans are less likely to be accepted when there are more unsecure creditors and (iv) plans with divestment proposals are more likely to be accepted. Finally, as expected given the seniority position of secured debt, plans are less likely to be accepted when the portion of secured debt is higher, and the reverse is true for unsecured debt.

Keywords: Corporate restructuring, reorganization plan, delay, bankruptcy.

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1. INTRODUCTION

The literature on reorganization and bankruptcy provides extensive theoretical and empirical analysis on debt restructuring. From an *ex ante* perspective, studies try to explain the impacts of bankruptcy on firms' capital structure decisions. Moreover, they try to understand why firms borrow from multiple creditors regardless of whether it makes the resolution of distress more complex in the future. The *ex post* approach aims to show the best alternatives to sort out claims in situations where the financial distress has already happened. In such a situation, debtors and heterogeneous creditors can have different incentives; creditors may disagree with each other about the value and the future of the debtor, and reorganization can be costly and takes a considerable amount of time.

Reorganization of financially distressed firms seems to be a good alternative as it makes it possible for companies to preserve organizational values, pursue growth opportunities and reorganize their level of debt after a failure episode. Bankruptcy law provides the rules for debtors and creditors to solve their differences and decide the future of the firm. When a corporation presents a reorganization plan, it expects its creditors to approve the plan. A reorganization plan separates creditors into classes according to the origin of their claims. In the Assembly, each class votes on the plan appointed according to value and number criteria. A majority vote is required to approve the plan.

Several complications may appear in situations where multiple creditors have different interests. These issues have received considerable attention from theoretical studies, such as Kordana and Posner (1999), Bris and Welch (2005) and Thadden, Berglof and Roland (2010). The *ex post* conflicts among multiple creditors, the number of creditors in a reorganization process and the bargaining power that some possess can lead to a rejection of the reorganization plan even when it seems to be good for the company as a whole.

To the best of our knowledge, there is still a lack of empirical results that are based on an evaluation of multiple creditor characteristics and the reorganization proposal presented in the firm reorganization plan. In particular, no study has addressed how multiple creditor characteristics and incentives in conjunction with the reorganization proposal can impact the plan vote, causing the firm to pursue either reorganization or liquidation. In addition, although the reorganizing time has received considerable attention in empirical papers, little attention

has been devoted to the length of time that is necessary for creditors to vote on the reorganization plan given the peculiarities of each class of claimholders and the particularities of each payment proposal. Kordana and Posner (1999) highlight the need for more studies addressing voting outcomes in corporate reorganizations.

Unlike the US, creditors meet to vote on the reorganization plan in Brazil. The minutes of the Assembly records the events of such a meeting, providing evidence about creditor demands for additional changes and debtor responses to claimholders' considerations and suggestions. Moreover, it is possible to observe which creditors showed up to vote on the plan, their claims and the vote outcome. Therefore, we believe that empirical studies using Brazilian data can help us to identify important findings on corporate reorganization and bankruptcy.

This thesis comprises three chapters that examine how multiple creditors decide on reorganization by taking into account their characteristics, claims and the payment proposals in the reorganization plan. We corroborate previous studies by showing the relationships among the vote on the reorganization plan, creditors' claims, debtors' characteristics and proposals to solve the distress problem.

In the second chapter, we present in a systematic fashion the theoretical and empirical evidence to shed light on issues related to corporate reorganization and bankruptcy. In addition, we provide case studies that clarify some of the characteristics that can influence the outcome of the reorganization decision. We addressed three cases with two outcomes in favor and one outcome against the reorganization plan as a final decision, thus clarifying how bargaining power in the hands of fewer creditors and concentration among the classes of creditors can be crucial for reorganization.

In the third chapter, we empirically examine the determinants of delays in corporate reorganizations. For instance, firms and creditors may delay certain decisions because of actions that require coordination in corporate reorganizations. For firms with multiple creditors and in cases with imperfect information, any creditor with veto power may have an incentive to cause delays.

We find that high concentration of debt among classes of creditors is related to shorter delays, while a higher number of banks contributes to longer delays. The divestment proposal

decision is the main reason for longer delays. Moreover, longer delays caused by labor and secured creditors occurred more in situations where the level of collateral was higher, while unsecured creditors contributed to longer delays in situations where the level of collateral was lower. When the concentration of claims declines from three classes to one class of creditors, the average delay also decreases. The results provide empirical evidence on how multiple creditor characteristics and collateral specification influences the time that is required for creditors to vote on the reorganization plan.

Finally, in the fourth chapter, we investigate the likelihood of the acceptance of reorganization plans when firms present them to claimholders during the creditors' general meeting. We find evidence that labor creditors approved the reorganization plan even when it was rejected by other classes. More heterogeneous proposals among classes of claimholders reduces the likelihood of plan acceptance. A higher portion of unsecured claims increases the likelihood of plan acceptance. However, reorganization plans are less likely to be approved in cases of a greater number of unsecured creditors. Higher concentration of debt in the hands of secured creditors reduces the chances of plan acceptance. In addition, divestment proposals increase the likelihood of plan acceptance.

2. CORPORATE FINANCIAL DISTRESS AND REORGANIZATION: LITERATURE REVIEW AND CASE STUDIES

2.1. Introduction

This chapter has two purposes. First, it aims to provide both a theoretical and empirical review on bankruptcy and reorganization studies. In short, our theoretical review analyzes the conceptual framework regarding the decisions of bankruptcy and market-based and court-supervised mechanisms for solving financial distress. The empirical approach shows the main results of the studies developed in the area. We follow the survey by Senbet and Wang (2010) to show the main issues related to bankruptcy and reorganization. Moreover, we include recent papers and dissertations exploiting Brazilian data. In 2005, law 11,101 took effect in Brazil in order to provide better conditions for creditors to reorganize or liquidate companies facing financial distress.

Second, it presents case studies of three companies in Brazil to highlight certain characteristics behind the votes of the reorganization plans. We had three reorganization cases: NTL-MD8, Bical and the X's group. The case studies show that Bical and the X's group had their reorganization plan approved, while the reorganization plan of NTL-MD8 was rejected.

We have chosen these companies for the following reasons: First, they have three, two and one class of creditors, respectively. We believe that this is an important issue regarding the plan vote and outcome; second, two cases address smaller and non-publicly traded companies, an important reality of reorganization files in Brazil; third, the X's group presents an interesting case where the reorganization was based on new debt issuance and ownership change. The case studies are based on the characteristics of the decision. The plan was rejected by the secured class (represented by only one creditor). Approved plans have shown a higher concentration of total debt in fewer hands.

We provide a brief description of each company, some information from the reorganization plan and the decision from the minutes of the Assembly. The data are from documents of each firm facing reorganization. We analyzed the reorganization plan, the minutes of the Assembly and the list of creditors provided by the judicial trustee in charge of each case.

The elaboration of this first chapter helps to elucidate important issues that will be explored in more detail in the next two chapters. In particular, we further address the possibility of delaying the vote on the plan during the claimholders' meeting as well as the likelihood of the different classes of creditors accepting the reorganization plan.

This chapter is structured as follows: The second section presents a theoretical review on reorganization and bankruptcy and highlights important empirical studies developed in the area. In addition, it presents studies that incorporate Brazilian data gathered after the new Brazilian bankruptcy law. The third section provides a case analysis of three Brazilian companies. The fourth section offers discussion and final remarks.

2.2. Literature review

The separation of investment and financial decisions for companies in perfect and frictionless capital markets makes bankruptcy risk irrelevant to firm value. According to Modigliani and Miller (1958, 1963), bankruptcy refers to the transfer of ownership from equity holders to other claimholders as soon as the value of assets drops below the value of debt. Hence, the value of a business entity cannot be affected by the bankruptcy costs of firms facing problems honoring promises to creditors. However, further research demonstrates that bankruptcy costs can be crucial for firms' debt decisions.

The tradeoff theory presumes considerable costs related to financial distress and bankruptcy. While direct costs include court fees, lawyers and tax accountants, indirect costs include inefficient investments and disruption among stakeholders' contracts. Kraus and Litzenberger (1973), Scott (1976), Kim (1978) and Leland (1994) show the link between bankruptcy and the existence of an optimal capital structure.

Haugen and Senbet (1978) state that bankruptcy risk impacts firms' capital structure decisions. Similarly, the choice of debt structure influences what happens in bankruptcy according to Aghion, Hart and Moore (1992). From an *ex ante* perspective, several studies analyze the importance of bankruptcy with respect to debtors' investments, leverage and

incentives prior to bankruptcy situations, such as Cornelli and Felli (1997), Schwartz (1998), Berkovitch and Israel (1999), and Bebchuk (2002) among others. These researchers shed light on the conflict between debtors and representative creditors.

The interaction between debtors and representative creditors in financial distress situations has received considerable attention. Kordana and Posner (1999) expanded the analysis by considering bargaining with multiple creditors. They incorporate the operation of the voting rules in Chapter 11. Moreover, Winton (1995), Bolton and Scharfstein (1996), Bris and Welch (2005), Hege and Mella-Barral (2005), Bisin and Rampini (2006), Hackbart, Hennessy, and Leland (2007) and Thadden, Berglof, and Roland (2010) also present a multiple-creditor model considering *ex ante* contracting problems or *ex post* analysis of problems related to individual and collective liquidation rights of creditors.

The *ex post* analysis of costs related to financial distress provides an option for firms to resolve distress through formal or informal reorganization procedures. The costs of financial distress in some cases can exceed any remaining firm value; thus, companies end up being dissolved. A possible alternative is to adopt a reorganization plan that addresses the problem. Basically, the choice of restructuring is made according to the least-cost alternative. However, it is not easy to identify the choice that stakeholders view as the least expensive decision. Costs depend on the market frictions that are specific to the situation of each company. To provide a solution for distress, companies can raise money from outside investors and reorganize through debt restructuring and asset sales.

The cost of liquidation and asset restructuring depends on the fraction of the assets that need to be sold and what operational relationship the liquidated assets have with those that are retained. Haugen and Senbet (1978) argue that bankruptcy costs should not be significant because claimants in financial distress should be able to negotiate out of court without affecting the value of the underlying firm.

Haugen and Senbet (1978), Roe (1983) and Jensen (1989) suggest that private reorganizations are more efficient in theory because they solve financial distress at a lower cost. Nevertheless, some problems may appear in out-of-court cases, and costs can rise significantly. In short, firms' resolution of financial distress through private reorganization can be more costly due to holdout problems, information asymmetry and conflicts of interest.

Although a private workout can create better financial conditions for the company in distress, some creditors may choose to hold out the restructuring process in situations where the posterior value of a claim may be higher than the value received for participating in the private reorganization. This is known as the creditor holdout problem.

In addition, the possibility of rejecting a restructuring plan, even when it is clearly advantageous for the whole company, makes the resolution of the financial distress a bit more difficult. Obviously, this type of problem is more likely in firms with a large number of creditors, but this is not the only condition.

The creditor holdout problem can be reduced through less stringent voting requirements, a procedure that might be achieved in court restructuring. Haugen and Senbet (1988) provide possible alternatives to eliminate the holdout problem. First, the holdout problem can be avoided when the bond trustee has the right to accept or reject tender and exchange offers on behalf of all bondholders. Second, it can be solved by making tender offers binding on all holders in the same class. Third, the problem can be attenuated when firms decide to put a continuous call provision for their bonds.

Asymmetric information in financial distress characterizes disparities in the firm's value due to private information. Insiders and outsiders may have different perspectives according to their information. Hence, insiders have incentives to strategically reduce the value of all claims for claimholders during the reorganization process. Giammarino (1989) and Brown, James, and Mooradian (1993) state that asymmetric information problems can be attenuated when companies decide to enter the formal court process (facing higher costs) or choose the right securities to offer to creditors in a debt restructuring.

Finally, conflicts of interest are quite common in restructuring situations. Cases of disparities in the distributions of wealth for different claimholders can be difficult to solve because each class of claimholders may place its own interest ahead of the company. For instance, junior creditors have incentives to overestimate the firm value to obtain a higher amount of money. In contrast, senior creditors may underestimate the firm value because they can acquire a greater portion of the firm when it continues to achieve good results. Managers can overestimate the firm value to keep their jobs. The allocation of wealth among the different classes of claimholders is a complicated bargaining process. Therefore, conflicts of interest can be extremely costly and reduce the efficiency of the reorganization. According to Brown (1989), conflicts of interest among classes increase the incentives for creditors to hold out and to engage in free riding.

Reorganizations in court provide an alternative to the problems faced in private workouts. According to Giammarino (1989), holdout and asymmetric information problems can be reduced in the face of non-unanimity voting rules, automatic stay provisions and judicial discretion in Chapter 11. Moreover, Mooradian (1994) argues that the Chapter 11 code can be viewed as a screening device when it is impossible to identify the economic efficiency of the firm facing distress. Hence, inefficient firms would prefer to reorganize in court. White (1994) indicates that efficient separating and inefficient pooling equilibriums may appear under imperfect information. When efficient separating occurs, efficient firms pursue Chapter 11, while inefficient firms pursue Chapter 7. Inefficient firms tend to pursue Chapter 11 in pooling equilibrium.

Brown (1989) notes that reorganization in court helps to strike conflicts of interest as well. However, the heterogeneity of creditors may still play a crucial role and create difficulties in the resolution of conflicts.

The design and structure of the bankruptcy law are important to the outcome of the reorganization process. A debtor-friendly structure permits unviable firms to reorganize and continue their business. In contrast, premature liquidation can appear in a creditor-friendly structure. Bradley and Rosenzweig (1992) state that the US bankruptcy code acts in favor of debtors so that they may retain jobs and assets. Hence, a large percentage of firms enter reorganization even if the best outcome is liquidation. This problem may create several complications for firms, such as a higher cost of capital and a leverage level under the optimal point.

Baird and Ramussen (2002) and LoPucki (2003) view the issue differently, arguing that senior creditors have started to dominate the court-supervised reorganizations. According to Broadie, Chernov, and Sundaresan (2007), the *ex post* domination of creditors during restructuring is efficient because the result for debtholders is close to the firm maximum value when it is in bankruptcy. Nevertheless, Myers (1977) shows a possibility of expropriation that

benefits senior creditors in such a way that they direct the cash flow after restructuring according to their own interests.

Theoretical studies in reorganization and bankruptcy have been a source of consistent debate on the frictions and conditions that can influence firms' decisions during financial distress. Empirical studies corroborate certain results and offer additional information on how companies decide to reorganize.

We provide a review of the empirical studies focusing on the resolution of financial distress. We first discuss papers that have estimated the direct cost of formal bankruptcy in the US. In sequence, we relate the studies that explain the characteristics of companies that have chosen a private workout. We also provide a brief review of the governance of distressed firms and the firms' outcomes after Chapter 11 filing. Finally, we highlight some studies conducted in Brazil after the new Brazilian bankruptcy law.

Altman and Hotchkiss (2006) show the direct costs of several cases in Chapter 11, prepackaged bankruptcies and Chapter 7 from 1933 to 2001. Analyzing different papers reporting the mean direct cost of financial distress, they find costs from 1.4% to 9.5% of the book value of assets for Chapter 11 cases, 1.8% to 2.8% for prepackaged bankruptcies and 6.1% to 8.1% for Chapter 7 cases. The researchers presented the values from previous studies focusing on firms in the US. For instance, Warner (1977) provides evidence for 11 railroads from 1933 to 1955. Bris, Welch and Zhu (2006) present the mean direct costs of 225 Chapter 11 and 61 Chapter 7 cases from 1995 to 2001.

In terms of out-of-court restructuring, Gilson et al (1990) and Betker (1997) report an average cost of 0.6% and 2.5%, respectively, of the book value of assets by analyzing exchange offers. In addition, Chatterjee, Dhillon, and Ramirez (1995) capture the stock market reaction and show less negative abnormal returns related to private restructuring in comparison with Chapter 11 filings. Because of the high cost of reorganization in court, firms favor private restructuring. However, theoretical analysis of the resolution of financial distress shows complications that hinder private restructuring and force firms to reorganize in court. Empirical studies indicate that a large number of companies failed to reorganize out of court and decided to file for Chapter 11.

An analysis of 169 financially distressed public companies was performed by Gilson et al (1990). They find that 47% of the firms restructured their debt out of court, while 53% of the firms had no success with this restructuring strategy and subsequently filed for Chapter 11. Moreover, they show that private workouts are more common when firms have fewer distinct classes of debt.

Gilson et al (1990) and Gilson, Hotchkiss, and Ruback (2000) distinguish the characteristics of the firms that solve financial distress by private workouts from those of firms that use traditional court procedures. More intangible assets, fewer lenders and the predominance of banks explained private workouts as a choice for distressed firms. They recognize that recoveries in Chapter 11 depend on how the disputes regarding a firm's value are solved. Firms that implement an out-of-court restructuring usually have a less complex capital structure.

Chatterjee et al (1996) indicate that options for court or out-of-court restructuring follow firms' liquidity, leverage, level of economic distress and creditor coordination problems. A similar study performed by Yost (2002) notes shortcomings in the study because of the variety of sources providing the data. According to Yost (2002), performance, liquidity, capital structure and the role of managerial discretion have an intimate connection with restructuring choices. Companies prefer to choose court restructuring in cases of information asymmetry because a rise in costs from a private workout might be higher in the presence of uncertainty. Yost (2002) investigate a third restructuring choice for companies, referred to as prepackaged bankruptcy. This type of restructuring alternative is a mix between court and private workout restructuring.

Focusing on large companies in 2002, Baird and Rasmussen (2003) calculate that one-quarter of cases in Chapter 11 were prepackaged. Companies facing a greater likelihood of holdout and coordination problems should choose court reorganization. McConnel and Servaes (1991) and also Tashjian, Lease and McConnel (1996) indicated that a prepackaged plan seems to be a tool for dealing with holdouts.

Liquidity constraints can influence the decision of a company to choose a court reorganization procedure because of the automatic stay feature in US Chapter 11. Automatic stay determines that all litigation against the debtors remains in court until resolution. Performance has been

considered an important driver of companies' restructuring choices because of the higher ratio of operational income to total assets in the year prior to the distress event. Gilson et.al (1990) argue that companies who belong to industries with higher median market-to-book ratios and higher ratios of operation income to total assets are more likely to restructure out of court. Yost (2002) corroborates this result.

When the sector faces difficulties, the resolution of the distress situation can be more difficult. Creditors may put pressure on companies to liquidate the assets. According to Shleifer and Vishny (1992) the likelihood of selling the assets is higher when the whole industry is in distress. Moreover, Maksimovic and Phillips (1998) indicate that the likelihood of bankrupt firms selling their assets is higher in high-growth industries. Pulvino (1998,1999) show that industry distress can give rise to fire-sale discounts. Leverage also contributes to asset sales. Ofek (1993) and Kruse (2002) specify that the likelihood of asset sale rises when a firm's debt level is higher.

The level of financial and economic distress may influence the way creditors decide the future of a company. Hence, conflicts of interest might appear and be crucial to the outcome of the reorganization. There are conflicts among different types of creditors, stockholders and managers. The governance of distressed companies has also been an important topic for researchers. Issues regarding management compensation and changes in ownership and control have received considerable attention.

Gilson (1989) analyze 69 companies to identify the level of manager turnover in restructuring cases. Surprisingly, 71% of the managers were replaced in a period of four years. None of these managers were able to find a job in a publicly traded company three years after they had left the company in distress. Ayotte and Morrison (2007) also find a high rate of turnover within two years of bankruptcy filing.

Owners and creditors also pay attention to the possibilities of management compensation. It is definitely important to align incentives during the reorganization period. Gilson and Vetsuypens (1993) study the contracts presented to managers during the distress period. They capture offers to managers in charge of the reorganization before it started and those who were in charge of the company during the reorganization period. Managers that retained their position suffered a considerable cut in their salary and bonus, while new managers received

35% more in compensation than the previous manager. Hotchkiss (1995) explains that managers usually stay in charge until the moment the reorganization plan is proposed. However, they leave the company as soon as it survives the distress period.

Gilson, Hotchkiss, and Ruback (2000) provide evidence that stock option offers occur frequently during reorganization cases. Moreover, Gilson and Vetsuypens (1993) show cases where managers receive an award once the firm has left the distress situation.

Some studies highlighted the outcome of firms after the reorganization period. They analyzed the performance of the companies a few years after their restructuring petition. LoPucki and Whitford (1993) show that a considerable portion of firms leaving the reorganization process reenter Chapter 11 a few years later.

With respect to post-bankruptcy performance, Hotchkiss (1995) finds that more than 40% of companies continued to have operating losses in the 3 years after reorganization. Compared to other firms in the same industry, more than 70% of the firms in reorganization showed lower performance. Eberhart, Altman, and Aggarwal (1999) show considerable positive excess stock returns for 131 companies leaving Chapter 11.

Comparing their sample to a portfolio of companies in the same industry, they find an average cumulative abnormal return of 25%. Moreover, Kalay, Singhal, and Tashjian (2007) indicate a high likelihood of efficiency gain for companies in reorganization. However, firms with more classes of debt show less improvement in performance.

Hotchkiss (1993) argues that firm size is the main determinant of a successful reorganization. The availability of divestment proposals to fund operations and pay creditors is crucial for a firm to overcome the reorganization period. Carapeto (1999) argues that a successful reorganization may heavily depend on DIP financing. In fact, Dahiya et al (2003) corroborate the result by showing a higher likelihood of recovering for firms that receive DIP financing.

Most studies focus on the US bankruptcy code. Nevertheless, interesting and important studies have also been developed around the world. Hotchkiss et al (2008) analyze the international evidence and present studies from different countries, such as the United Kingdom, Sweden, France, Germany and Japan. In addition, Senbet and Wang (2006) elaborate on a survey on financial distress and bankruptcy. They review theoretical and

empirical contributions to the topic and provide a discussion on comparative codes and studies in the US, United Kingdom, Sweden, Germany, France and some emerging markets, such as Brazil.

For instance, Senbet and Wang (2010) note that the old Brazilian bankruptcy law was one of the most inefficient. In fact, the old reorganization procedure only postponed corporate debt, and the resolution of cases was extremely slow. In addition, the buyer of a liquidated property usually had to assume previous debt. Reorganization under the old procedure was difficult, and many companies eventually asked for bankruptcy. De Carvalho (2005) states that the previous bankruptcy law was extremely outdated. Dating from 1945, the law is now viewed as a barrier to economic development.

There are a variety of Brazilian studies regarding issues related to the new bankruptcy law. Brazilian law 11,101 started in 2005 and improved upon the old procedure in many ways. In sum, it provides a legal framework to make it easier for firms and creditors to resolve their problems. It reduces bureaucracy and permits the options of a court-supervised or out-of-court reorganization.

There is no successor liability, and the creditor plays a more important role due to the vote on a reorganization plan. Paiva (2005) and Toledo (2005) offer an explanation of bankruptcy law, providing an introduction, explanation and analysis of the main topics related to law 11,101 while also taking a highly qualified group of lawyers into account. Moreover, Anapolsky and Woods (2013) explain the similarities and differences between Brazilian bankruptcy law and the Chapter 11 and Chapter 7 codes. The paper focuses on the bond market.

Some dissertations, theses and papers have focused on different aspects and consequences of the new law. Funchal (2006), Perez (2007), Sica (2009), Kirschbaum (2009) and Crippa (2013) provide an interesting and important analysis on the specific characteristics of the reorganization process after the new Brazilian bankruptcy law. Funchal (2006) investigates the relation of credit and bankruptcy after law 11,101. Perez (2007) studies the critical factors of a successful recovery. Sica (2009) specifies the role and development of the out-of-court reorganizations in Brazil. Kirschbaum (2009) evaluates issues on corporate governance, post-

petition financing and the negotiation of the reorganization plan. Crippa (2013) aims to elucidate the abuse of rights during reorganization cases.

In addition, researchers have been trying to understand how companies raise money after the new Brazilian bankruptcy law with respect to both the *ex-ante* and *ex-post* reorganization period. Funchal and Clovis (2009) study the effects of the new law in the firm's level of leverage. In fact, they find an increase in the firm's level of debt after the implementation of the new law.

Monteiro and Teixeira (2009) evaluate the role of confidence during the reorganization period using qualitative research. They show that credit concession in the reorganization period is influenced by the confidence created among debtors, managers and creditors. Dias (2012) also analyzes cases focusing on how distressed companies raise money in Brazil, highlighting the constitutional premises in reorganization. Araujo, Ferreira and Funchal (2012) specify a causality relation by showing that an increase in creditor's protection explains a higher level of long-term debt and a reduction in the cost of capital after a bankruptcy reform in different countries, including Brazil.

The change in the bankruptcy law also makes it possible to identify the role of different participants in the reorganization. For instance, Moro Junior (2011) identifies aspects of the accountant in the reorganization process. He argues that there are opportunities for improvement in the reports and analysis provided by accountants of distressed companies.

Previous studies have highlighted important issues of the bankruptcy and reorganization process that can affect debtors, creditors, managers and other stakeholders. The next section of this chapter presents a case study on the characteristics of three companies in reorganization, addressing the outcome of the votes for reorganization plans analyzed in the Assembly. We are interested in reorganizations filed in court.

2.3. Three case studies

In this section, our goal is to elucidate the characteristics of three restructuring companies regarding the result of the reorganization plan presented in the Assembly. In other words, we want to analyze some aspects of the firms whose reorganization plan was accepted or rejected.

Case studies about companies in distress situations have received considerable attention. For instance, Penati and Zingales (1997) analyze the case of the Ferruzzi Group, one of the largest out-of-court restructurings in history. The study shed light on the efficiency and distributional consequences of the reorganization. Weiss and Wruck (1998) clarify conflicts of interest between shareholders and the manager of the Eastern Airlines bankruptcy case. Moreover, Noe and Rebello (2003) evaluate Macy's bankruptcy, focusing on the conflicts of interest among stakeholders.

We concentrate our analysis on three companies: Bical, NTL and the X's group. The complexity of each case is different and can corroborate the decision of approving or rejecting the reorganization plan. Hence, we aim to present the characteristics of each case without focusing on comparisons. The information in our analysis is from the reorganization plan, the minutes of the general meeting and the list of creditors, with claims provided by each company.

We start by presenting a brief description of each company according to the information presented in the reorganization plan. We then analyze the justification of the reorganization, the claims and concentration of debt among creditors, the debtor's payment proposal for each class of claimholders and the information presented in the minutes of the Assembly, such as the quorum of each class of claimholders. Only the information provided by the company asking for reorganization was analyzed. We did not focus on external files or other types of information.

Private and small companies respond to an overwhelming number of reorganization cases in Brazil. Hence, we also decided to study cases involving private companies instead of only publicly traded companies. First, we analyze Bical's case; we then study the case of the NTL and finish our analysis with the X's group.

2.3.1. The case of Bical

Bical – Birigui Calçados Ind.e Com.Ltda was started in 1965 in the state of Sao Paulo. The head office is located in Sao Paulo, and it has two more branches, one in Sao Paulo and the other in Mato Grosso do Sul. For more than 40 years the company has focused its operations on manufacturing and commercializing shoes in local and external markets.

The firm asked for reorganization in October of 2011. The main reasons for distress are as follows: i) The 2008 crisis caused considerable losses due to the reduction in sales in external markets; ii) difficulties competing against the prices of Chinese companies; iii) a considerable portion of laborers decided to move to other sectors; iv) an increase in debt to finance working capital needs and; v) the exacerbated cost of capital to finance its activities. The company also noted an overall reduction in industrial production as an explanation for its bad results.

Bical also hired consultants in an attempt to identify and solve operational shortcomings. It has engaged in negotiations with suppliers and asked for a reduction in the price of products in exchange for advance payment. The firm's cash flow projections are based on a 12-year period to liquidate the amount of debt presented in the reorganization plan.

Appendix A (Panel B) specifies Bical's debt according to the type of creditor. The table provides the quantity of creditors and value of debt and decomposes the unsecured creditors between bank and nonbank companies. The firm only has labor and unsecured creditors. The amount of debt in reorganization equals 16,361,367.85 of *Reais*. It is interesting to observe that the percentage of debt in the hands of banks is approximately 70% of the total unsecured debt. However, the quantity of banks with claims in the unsecured class is less than 3%.

In the reorganization plan, the company promises to save part of its sales to pay secured and unsecured creditors. Although the reorganization plan clarifies the strategy of payment for secured creditors and presents the amount of debt to be paid for this class, there is no secured creditor specified in the list of creditors provided by the judicial trustee. The minutes of the Assembly confirm that only labor and unsecured classes voted on the plan. Therefore, we follow the debt specification presented by the judicial trustee.

Unsecured creditors will be paid within 12 years of the reorganization plan approval. The payment period includes a grace period of two years. The debtor also proposes a reduction of 20% in the amount of debt. Each year payments will receive an adjustment according to the inflation (*IPCA*) specified for the period. The reorganization plan mentions that the firm can sell or lease assets if it is necessary.

2.3.1.1. Minutes of the Assembly – Bical's plan vote

The first call to Bical's general meeting happened on July 24th, 2012. Following the specifications of law 11,101/05, the meeting was postponed due to the insufficient level of quorum. Only 36.75% of the unsecured creditors appeared to be part of the meeting. A no show for the labor class was registered.

The next meeting was scheduled for July 31st, 2012. On this day, 100% of the labor class and 56.21% of unsecured creditors attended the Assembly. After the debtor's presentation of the reorganization plan, creditors decided to vote. The minutes of the Assembly did not specify any demand for modifications in the original plan. Appendix A (Panel C) presents the result of the votes. The only labor creditor approved the reorganization plan. It was also approved by 53.28% of unsecured creditors. Hence, the reorganization plan was approved in the Assembly.

Thus, interesting points can be observed in Bical's case. It is possible that as a result of fewer creditor and claimholder classes, the plan is more easily accepted because there are fewer conflicts. These results are in line with the studies presented in previous sections.

2.3.2. The case of NTL-MD8

The companies NTL *Têxtil Ltda* and MD8 *Têxtil Ltda* were started in 1989 in *Sao Paulo*. Although they are separate companies, they asked for unified treatment during the reorganization filing due to the large number of creditors they had in common. Thus, we will treat them as NTL-M8. The textile company made products from polypropylene, polyester and cotton. The firm asked for reorganization in October of 2008.

The main reasons for distress are explained as follows: i) NTL-MD8 blame a competitor for practicing dumping as soon as the firm decided to open a new branch in *Mato Grosso do Sul*; ii) the textile industry is facing constant modifications, and massive investment in technology is important and; iii) the sector is extremely dependent on internal capital to finance its projects.

As a response to the distress problem, the firm decided to implement several measures. It reduced its workforce considerably, enforced more severe cost control measures, decided to make purchases by paying in advance and engaged in strategies to increase sales. The reorganization plan clarifies that NTL aims to incorporate MD8; thus, it was considered a single reorganization of both companies.

The firm projects paying off its debt in 9 years. It aims to allocate 80% of the earnings before tax to creditor payments. The reorganization plan highlights that the provisioning above will be performed to pay secured and unsecured creditors who are owed less than 2,000 *Reais*. The company believes that such efforts will be enough to liquidate more than half of secured and unsecured claimholders. Secured and unsecured creditors will receive the same treatment after a grace period of 12 months. The firm will correct its annual payments by the inflation (*IPCA*) specified for the period. Appendix B presents the debt segregated by each class of creditors.

2.3.2.1. Minutes of the Assembly – NTL-MD8's plan vote

The first call to NTL-MD8's general meeting occurred on April 10th, 2009. Following the specifications of law 11,101/05, the meeting was postponed due to an insufficient level of quorum. The participation of labor, secured and unsecured claimholders in the Assembly was 6.32%, 100% and 6.52%, respectively. Hence, the meeting was postponed due to an insufficient level of quorum.

The next meeting took place on April 17th, 2009. A higher portion of labor and unsecured creditors appeared (33.12% and 23.24%, respectively). The participation of secured creditors did not change. All creditors rejected the plan. After the presentation of the reorganization plan by the debtor, some modifications were proposed. For instance, there was a new specification proposing a full payment of creditors with claims equal to or less than 10,000 *Reais*. The labor debt was to be paid in 3 sequential installments. There was also the exclusion of MD8 incorporation by NTL. In one more round of votes, all labor and 78.17% of unsecured creditors approved the plan. However, the secured class of claimholders rejected the plan. According to the minutes of the Assembly, only one secured creditor voted on the plan (*Banco do Brasil*). Hence, the plan was not approved by all classes of creditors.

This case shed light on how the concentration of power can drive the reorganization result. Because senior creditors may have incentives to reject the plan and receive their claims, extreme concentration in the hands of secured creditors was the determinant of the outcome of the plan.

2.3.3. The X's group cases

We next present the case of a large publicly traded company in Brazil. The companies of the X's group that are in financial distress are OGX Petróleo e Gás S.A, OGX Austria GmbH and Óleo e Gás Participações (OGPar). The reorganization of this group has received considerable attention in Brazil. In short, OGX is a company that explores, refines, processes, trades and transports oil (among other activities). Since 2007, the X's group has been exploiting oil in Bacia de Campos, Bacia de Santos, Bacia Espírito Santo, Bacia Parnaíba and Bacia Pará-Maranhão. As a majority shareholder, Eike Batista was in charge of the group. The information provided below is the same for all the reorganizing companies of the group.

The *OGX* has raised money by issuing bonds (Bonds 2018 and Bonds 2022) to finance its projects. The reorganization plan reveals that more than 3 billion dollars were raised. The group asked for reorganization in October of 2013. The main reasons for distress are explained as follows: i) Risks related to group activities such as oil exploration. The exploration of some places was considered impractical; ii) the default of *Petronas Brasil E&P* brought severe difficulties.

To solve its financial problems, the group decided to obtain new funding. Hence, the group relied on DIP (issuance of corporate bonds) and additional financing specifying some assets as collateral. The issuance of corporate bonds is in three tranches in amounts of 125, 90 and 90 million dollars.

The money was to be invested in projects and working capital activities. Moreover, the reorganization plan indicates that payment to financial claimholders of the bonds in 2018 and 2022 will be done by the capitalization of credit. In sum, the group pursued a capital increase through the capitalization of credit and converting corporate bonds. Nonfinancial unsecured

creditors will be paid in 48 monthly fixed tranches of the same value. The group has no claims from labor or secured origin.

The reorganization plan shows that, after the incorporation, stocks were traded as *OGX Reestruturada*. Due to the incorporation, the ownership of stockholders in *OGX Reestruturada* is presented as follows: i) Creditors financing the first tranche of corporate bonds own 41.9767%; ii) actual or out-of-reorganization new creditors who accept the plan own 25%; iii) creditors financing the second and third tranches of corporate bonds own 4.98%; and vi) Eike Batista owns 1 stock.

Moreover, the reorganization plan shows the existence of warrants for stockholders presenting the following conditions: i) 1.5 billion dollars; ii) 5 years of maturity; iii) the number of common shares to be subscribed must equal 15% of the stocks from *OGX Reestruturada*; and iv) the values will be corrected by an inflation index (*IGP-M*).

The company can divest assets, and the conditions specified in the reorganization plan are respected. In addition, the reorganization plan presents to *OGPar* the option to file for Chapter 15 bankruptcy code if it is appointed as necessary.

2.3.3.1. Minutes of the Assembly - The X's group cases

The first call to the X's group general meeting happened on June 03rd, 2014. The quorum was approximately 62.79% of unsecured creditors, the only class able to vote on the plan. As soon as claimholders were able to express their concerns in the meeting, a creditor asked the debtor about the quantity of expenses not subject to the reorganization plan. The debtor answered that only one new creditor joined the plan. It was specified that after debt conversion, equity would be close to 3.3 billion and debt would be close to 200 million *Reais*. The creditors of the second tranche of corporate bonds were informed that they were entitled to the subscription of the remaining third tranche in case there was not a full subscription from the third tranche's creditors.

After a brief discussion of the proposals related to the third tranche of corporate bonds, with a subsequent rejection of the proposals by the debtor, the plan was voted on. According to the

minutes of the Assembly, 81.59% of claimholders approved the reorganization plan (the value represents 90.42%). The number of abstentions was five. Hence, the plan was considered approved.

This case shows how the access to external finance can help solve distress problems. Moreover, it specifies that the concentration of claims for creditors with the same seniority position might attenuate conflicts and lead to the rejection of the plan.

2.4. Discussion of the cases and final remarks

One can observe interesting differences among the cases. The first is the number of classes that vote on the plan in each case. There are two classes of creditors for Bical (Labor and Unsecured), three classes for NTL-MD8 and only one for the X's group. It is possible that companies with three classes of creditors present more complexity, and therefore, it is more difficult to have the reorganization plan approved. For instance, the plan for NTL-MD8 was approved by labor and the unsecured creditors and rejected by secured creditors. It seems more difficult to align incentives and present a more homogeneous proposal to creditors in cases like this.

Second, it is also worthwhile to pay attention to the concentration of value among creditors. In the case of Bical, there is a huge concentration of value in the hands of a few banks. The concentration of NTL-Bical was somewhat more spread out. Although table 3 only reports the concentration of value in the hands of banks, a considerable number of funds have shown a large portion of the X's group debt. It is possible that less concentration of money makes it more difficult for creditors and debtors to come to an agreement. However, it is extremely difficult to compare the result of the three companies due to the complexity of each case.

Third, the extreme concentration of value in the hands of a few creditors in the same class can influence the type of reorganization plan that is decided upon. For instance, NTL-MD8 presented only one secured creditor who rejected the plan. In such a case, the debtor must meet all the demands of creditors (whether it is possible). Otherwise, the plan will be rejected.

Fourth is the access to external funding, which is necessary to solve the financial distress problem. The X's group could present a strategy that is based on external funding. The group

presented a proposal with a severe modification to the composition of ownership. The option of obtaining additional funding seemed crucial to the group.

It is also interesting that in no case did all creditors vote on the plan. Regardless of the number of classes, a considerable amount of absenteeism was registered in the minutes of the Assembly. Moreover, two of the three cases presented a quorum delay in the first general meeting, and the plan vote was postponed.

3. DETERMINANTS OF DELAYS IN CORPORATE REORGANIZATIONS

3.1. Introduction

This paper uses a novel database of delays in the reorganization of bankrupt companies. Previous literature notes the importance of coordination and bargaining during the reorganization period when information asymmetry and conflicts of interest appear to play a crucial rule. Theoretical evidence on bargaining theory states that a considerable delay in achieving agreements may occur when there are informational disparities between parties (Kennan and Wilson, 1990) and when the number of bargainers is large (Cai, 2000).

Baird and Picker (1991) and Bebchuk and Chang (1992) detailed a bargaining model between the debtor and a single creditor for corporate reorganizations considering perfect information. Kordana and Posner (1999) provided an extension of the model by considering what may occur if the assumption of a single creditor is relaxed. Focusing on the rules of Chapter 11 and Chapter 7 codes, the researchers noted that delays can occur in imperfect information models when parties share bargaining power.

The Chapter 11 code reduces coordination problems by grouping creditors into classes according to their claims in court reorganizations. In practice, however, contracts appear to be incomplete and investors and the court system cannot promote sufficient conditions for enforcing all rights. The holdout problem increases the difficulty of resolving the financial distress and creditors or debtors may occasionally prefer to postpone voting on the reorganization plan to demand more agreeable and reliable conditions.

Because of the absence of appropriate US data on the subject, knowledge on the delays of reorganization plans of distressed firms is limited. This paper's objective is to fill this gap. According to Ivashina et al. (2015), claim administrators are hired by Chapter 11 debtors to organize and make available information on all claims and claimholders. The administrators are representative agents who collect creditors' decisions regarding the restructuring plan. Nevertheless, the bargain conditions related to the delay of voting on the reorganization plan cannot be evaluate for each creditor available to vote in all classes because creditors do not meet in an Assembly.

In this paper, we address this problem by using a novel Brazilian database, which is a reasonable strategy because in Brazil, the classes of creditors choose to reorganize or liquidate firms by voting together in a Creditors Meetings. The creditor holdout and coordination problems can be reduced through less stringent voting requirements, a procedure that may be achieved through court restructurings in the US. Because each creditor's single vote counts according to Brazilian bankruptcy law, the creditor holdout and coordination problems may be more severe compared with those in the US.

We argue that such conditions enable us to obtain valuable information regarding the characteristics of decisions related to delaying votes because the process undertaken when different classes and types of creditors meet in a Creditor's Meetings and decide to postpone the reorganization vote can be observed.

This paper follows a strategy similar to that of Kaplan and Stromberg (2002) and Kaplan and Stromberg (2004) by highlighting the descriptive statistics of databases that suffer from sample bias which cannot be excluded by quasi-experiments. Our data originated from firms and the website of some judicial trustees in Brazil and is composed of 120 reorganization plans dating from 2005 to 2014. We have chosen to begin in 2005 because the new Brazilian bankruptcy law was enacted in 2005.

In our sample, we observed certain cases in which creditors required more than 100 days to vote on the reorganization plan. The highest quartile of our sample revealed that an average of 101 days was required to vote on the reorganization plan. After studying the characteristics of the different types of delays, our results revealed that a high concentration of debt among the classes of claimholders appeared to be related to fewer delays. Moreover, a higher number of banks with claims in the reorganization appeared to be positively correlated with delays. We did not find robust results regarding the number of creditors in each class of the reorganization process.

In this paper we show that the average delay is longer when all of the classes are in charge of voting on the reorganization plan, whereas the delay becomes considerably shorter when one class is solely voting on the plan. By segregating the different types of delays in our sample, we observed that delays demanded by debtholders are more intense when secured and unsecured creditors are able to vote on the plan. By segregating the delay by creditor and
debtor, we observed that firms encountering restructuring requested delays solely in cases where all classes of creditors were able to vote.

By segregating the analyses of financial and economic distress, we were able to determine how the average delay is affected by different intervals of measurement. Labor and secured creditors appear to demand a delay when it is likely that they will receive their claim if a liquidation occurs. Unsecured creditors demand delays when the level of assets that is owned by the debtor and available to repay the debt is lower. Moreover, the average delay is longer for lower levels of economic distress for both secured and unsecured creditors.

We argue that reorganization plans that require additional time to reach a vote are related to divestment proposals. The minutes of the general meetings show that many rounds of discussion are required to determine the assets that should be sold to generate cash. Creditors usually noted the minimum acceptable price to be adopted. In addition, firms encounter certain difficulties in obtaining the permission of secure creditors to sell assets that were allotted to the creditors as collateral before the reorganization period.

Finally, we show that the average claim concentration among the top 10 bank creditors is higher for longer delays, with the analysis segregated by quartiles of delay. We also provide evidence that a higher portion of cases in which the debt is lowered from the original value occurred in cases with longer delays and that cases of modifications to the interest rate occurred slightly more often for shorter time delays.

Our paper contributes to the literature developed by Gilson (1990), Gilson et al. (1990), Brown at al. (1993), Franks and Tourus (1994), Helwege (1999), Ayotte and Morrison (2007), Ponticelli (2012) and Ivashina et al. (2015) regarding the characteristics of delaying reorganization plan votes during restructuring cases. We corroborate the results obtained by previous papers and provide an analysis of the role of each class of claimholders in delays of reorganization plan votes.

The structure of this paper proceeds as follows. The second section discusses the related literature and provides information regarding the types of delays for reorganization plan votes under Brazilian bankruptcy law. The third section presents a description of our data and the

fourth section describes our empirical strategy of analysis. The fifth section then provides our empirical results, and the sixth section presents our conclusions.

3.2. Delays during the firm reorganization process

A number of topics related to bankruptcy and corporate reorganization have been analyzed since the 1990s, and Gilson (1990), Gilson et al. (1990), Brown et al. (1993), Franks and Tourus (1994), James (1995), Chatterjee et al. (1995), Hotchkiss and Mooradian (1997), Mooradian and Ryan (2005), and Ayotte and Morrison (2007) have provided important contributions regarding the characteristics of debt restructurings. In addition, we were able to identify the outcomes of Chapter 11 filings and post-bankruptcy performance by reviewing the work of Hotchkiss (1995), Gilson (1990), Hotchkiss and Mooradian (2004) and Kalay et al. (2007).

Despite the significant contributions that have been made on the topic of reorganization, a wide and deep analysis regarding the delays during the reorganization process remains outstanding. Adler et al. (2012) found that delays may occur when managers are able to interfere in the decision of whether a company should file for a bankruptcy petition.

According to Section 1102 of the Chapter 11 code, a committee of creditors represents the interest of the claimholders during the reorganization process; therefore, it is difficult to evaluate the interactions between creditors grouped in different classes when voting on a reorganization plan.

Ivashina et al. (2015) showed that the creditor concentration is a key variable for explaining the speed of recovery during restructurings, and they provide evidence that ownership concentration (total claims owned by the ten largest creditors) is strongly associated with bankruptcy outcomes.

In addition, Diamond (1991), Rajan (1992) and Bolton and Scharfstein (1996) showed that the ownership structure can influence distressed restructurings. One possible interpretation is that when funding is concentrated in a smaller number of creditors, the reorganization is easier and more efficient, which is consistent with the work on multilateral bargaining developed by Cai (2000).

The dynamic bargaining theory is rich and supports a number of different predictions for the resolution time. The classic model of Rubinstein (1982) predicts immediate agreement for subgame perfection under symmetrical information. Admati and Perry (1987) studied a bargaining game with incomplete information to understand the time between offers, and they found that a time delay occurs to signal a bargainer's strength.

Gale (1995) argued that delays are inefficient because social gain does not occur when players discount the future. In coordination games, it can be beneficial for an individual investor to delay: however, investors would be better off overall if they make an immediate decision. Avery and Zemsky (1994) stated that multiple equilibria outcomes emerge when players wait for a number of periods before making a serious offer. Feinberg and Skrzypacz (2005) noted that uncertainty regarding uncertainty can lead to a delay in achieving an agreement in a bargaining game in which a buyer has private information regarding the value of an object and the seller has private information concerning his beliefs regarding the buyer's valuation. Theoretical evidence also supports the occurrence of delays when there is informational disparities between the parties (Kennan and Wilson, 1990) and the number of bargainers is large (Cai, 2000).

We also analyze the role of banks in our study because the level of bank debt has been suggested to impact bankruptcy claims in a number of papers, including those by Gilson (1990), Gilson et al. (1990), Brown et al. (1993), Asquith et al. (1994), and James (1996). Moreover, Helwege (1999) found that bank debt is positively related to lower debt restructurings. Our objective is to elucidate the time required to vote on a plan and its relation to the quantity of claims held by banks.

In conclusion, this paper presents evidence of delays enacting recovery plans based on the concentration of debt, the number of creditors and the role of banks. The next section includes a brief explanation on the reorganization plan voting process in Brazil.

3.2.1. How is delaying a plan vote possible under Brazilian bankruptcy law?

After 2005, the Brazilian financial restructuring procedure closely approximated that of the US Chapters 7 and 11 codes. The Brazilian bankruptcy law also promotes the possibility of choosing court or out-of-court recovery for companies encountering distress. The three classes of creditors (labor, secured and unsecured) can choose to approve or refuse the reorganization plan. However, when a claimholder does not agree with certain conditions specified in the plan, creditors must meet in Assembly to vote on the plan.

Creditors are divided into three classes for vote counting purposes. Labor creditors are classified as Category I, secured guaranteed creditors are classified as Category II and unsecured creditors are classified as Category III. In general, tax creditors and creditors holding loans supported by the fiduciary alienation of assets are not subjected to recovery: therefore, they do not participate in the voting session for the approval of the plan. Thus, the process for approving or rejecting the restructuring plan can be explained as follows.

1. The recovery plan must be presented in court within the fixed period of sixty days after the decision has been made to start the restructuring process. The judge indicates that he has received the recovery plan and sets a deadline for creditors to present any objection. Creditors have 30 days to object the plan.

If there is no objection, the judge must grant the reorganization. However, if there are any objections, the judge must call a general meeting (Assembly) of creditors in which they can analyze and vote on the plan. The meeting must be attended within 150 days after the debtor's petition was granted.

2. A judicial trustee nominated by the judge is in charge of managing the Assembly.

3. The plan is voted on by the labor, secured and unsecured debtholders. The plan can be accepted, rejected or postponed because of a demand for additional changes. Votes must attain the consent of the three classes of creditors. For secured and unsecured creditors, the plan must be accepted by a majority of creditors at the meeting, and at least half of the total debt value for each class must be represented. Labor debt approval solely requires a majority of the creditors' votes.

4. If the plan is not approved, the firm confronts bankruptcy.

The first possibility for delaying a reorganization plan vote occurs in the first Assembly. At the first call, there is a minimum quorum requirement to begin the meeting (over half of the claim from each class of debt). Thereafter, there is no quorum requirement. It is important to highlight one of the differences between Brazilian bankruptcy law and US Chapter 11 code. In Brazil, claimholders cannot vote by mail, and creditors must attend the general meeting if they want to vote on the reorganization plan. However, a legal representative is allowed to represent a creditor after authorization from the judicial trustee.

Another valuable point to consider is the claim of separate treatment in the Brazilian bankruptcy law. Compared with US law, Brazilian law considers each single creditor when counting votes. The differences in Brazilian law may be related to quorum delays because attending the meeting or hiring a representative agent can be more costly than the amount of money that a particular creditor has available. Therefore, delays become a matter of bargaining because there is no quorum requirement after the first general meeting.

3.3. Data description

We have collected claim-level holdings data from 120 Brazilian firms that filed for reorganization after 2005 (the year when the new Brazilian bankruptcy law was enacted). A small portion of our data originated from one of the main Brazilian courts (*Vara de Falências e Recuperação Judicial*) in São Paulo, with the remaining data obtained from firms and the website of some judicial trustees. Because few public companies in Brazil have filed for reorganization since 2005, the majority of our sample originated from private firms.

Both public companies and private firms can be classified as corporations (S.A.) according to the Brazilian denomination. Private companies are classified as corporations if the company is permitted to issue corporate bonds (S.A) and non-corporations (LTDA) if the company is not permitted to issue corporate bonds.

We obtained our data from 3 different documents of the reorganization process: the reorganization plan, the minutes from the general meetings and descriptions of the amount of money to be recovered by each creditor.

The reorganization plan must present a general description of the company, a detailed description of the claimholders' payment, the method of reorganization to be adopted and a professional evaluation of the assets that belong to the recovery firm.

The minutes from the general meeting provide information on the quorum process, the money represented by each class of creditors voting on the plan, the discussions and suggestions that occur during the meeting and the decisions made by each class of creditors regarding their acceptance or rejection of the plan through their votes.

When an individual (firm's lawyer or an individual claimholder) proposes to avoid voting on the plan during the meeting, the judicial trustee registers the result of the voting delay and sets the date and location for the next vote by the creditors on the reorganization plan and the modifications.

The lists of creditors must detail the funds that they are owed, which provides information on the amount of money owed to each creditor in the labor, secured and unsecured classes. Therefore, we can access the total amount of money that a company must pay to each class as well as the amount of money from each creditor's claim.

Appendix D summarizes the basic statistics for each variable collected from the documents mentioned above. The definition of the variables is also explained in the appendix.

We found that the average age of the studied firms (from birth to restructuring date) was approximately 31 years. Regarding the number of banks, approximately seven banks are predominant during restructuring. The descriptive statistics show that the firms received funding from 18 different banks.

We present our summary statistics in table 1 by grouping the information according to the delay's characteristics. The time sample has been divided into groups based on the delay. We separate all observations for the cases according to no delay, delays up to 10 days, delays between 10 days and a month, delays between one and two months and delays longer than two months. Table 1 provides information regarding the average values of the different variables. The number of meetings that occurred according to the average delay, the number of banks participating in the reorganization, the value of the assets in millions of *Reais*, the

age of the recovering company, the debt to asset ratio, the quantity and debt share of claimholders from each class capable of voting on the plan, and the share of total claims owed to the ten largest creditors (with and without banks).

Table 3.1 - Summary statistics

This table reports the summary statistics of the sample of reorganizations. NOBS is the number of observations, % is the number of observation in each group divided by the total number of observations, Avg. Delay is the average delay (in days) in each group, # Meetings is the average number of meetings in each group, # Banks is the average number of banks in each group, Assets (M) is the amount of assets held by the company (in millions of BRL), Age is the average age in each group, Debt/Assets is the ratio of debt to total assets, Labor Debt (%) is the proportion of labor debt (in terms of the total debt of the company), Labor # is the number of labor debtholders, Top 10 (%) is the proportion of the debt held by the 10 debtholders with the highest amount of debt, and Top 10 (%, no banks) is the proportion of the debt held by the 10 debtholders with the highest amount of debt, excluding banks. We divided the sample based on delay.

| Characteristics by delay group | | | | | |
|--------------------------------|----------|-------------------|----------------------|------------|------------|
| Delay Interval: | No Delay | \geq 1 d, <10 d | $\geq\!\!10$ d, <1 M | ≥1 M, <2 M | $\geq 2 M$ |
| Avg. Delay | 0 | 8 | 19 | 47 | 81 |
| NOBS | 44 | 33 | 14 | 14 | 14 |
| % | 37% | 28% | 12% | 12% | 12% |
| # Meetings | 1.1 | 2.0 | 2.3 | 2.6 | 3.2 |
| # Banks | 5.6 | 5.2 | 8.0 | 7.0 | 5.5 |
| Assets (M) | 210 | 7 | 179 | 276 | 27 |
| Age | 36 | 26 | 22 | 45 | 23 |
| Debt/Assets | 11 | 23 | 69 | 14 | 13 |
| Labor Debt (%) | 2% | 4% | 2% | 7% | 2% |
| Sec Debt (%) | 19% | 13% | 20% | 15% | 25% |
| Unsec Debt (%) | 77% | 83% | 78% | 78% | 74% |
| Labor # | 459 | 381 | 47 | 488 | 31 |
| Sec # | 3 | 2 | 3 | 3 | 3 |
| Unsec # | 430 | 205 | 304 | 277 | 198 |
| Top 10 (%) | 67% | 68% | 71% | 67% | 74% |
| Top 10 (%, no banks) | 36% | 40% | 20% | 32% | 27% |
| | | | | | |

Source: own elaboration.

The sample has a higher concentration in shorter delays (delays to a maximum of 10 days), which usually occurred because of quorum requirements during the first general meeting. For a period of up to a maximum of 10 days, two meetings at most occurred. Delays of one or two months were less dispersed, whereas delays longer than two months were more dispersed (after correcting for outliers).

Appendix E reports the characteristics of the same variables according to sector and region. We grouped all of the companies according to the sector classification presented by Bloomberg. We obtained observations for the following 6 sectors: basic materials, cyclical, non-cyclical, energy, industrial and utilities.

Our sample is primarily concentrated in the industrial and non-cyclical sectors and less concentrated in the basic material sector. The average delay is longer for firms from the energy sector, whereas it is shorter for firms in the utilities sector. It is also interesting to observe that the number of banks is also higher for firms in the energy sector.

According to the debt-to-asset ratio level, firms that are part of the basic materials and energy sectors generally have more advantageous situations compared with firms from all other sectors. Using the level of collateral as a proxy for financial distress, the firms from the utilities sector have shown a more complicated restructuring process to guarantee the claims in case of a liquidation compared with other types of firms. It is important to highlight that this sector also has the lowest average delay level.

The highest concentration of firms in our sample is in the southeast and south. However, this segregation does not provide particularly relevant data because the highest average delay occurred in the north (with only one case) and the highest average level of debt-to-asset ratio occurred in companies in the central west.

The delay characteristics of the sample are divided by the cause of the delay and the group causing the delay and presented in table 3.2. In this table, we separated the delays that originated with the quorum from delays that occurred because modifications to the original plan were demanded by creditors or additional time was required by the company to perform the modifications.

The average delays in the groups of quorum requirements and creditor demands are more prominent in the sample. The debt-to-asset ratio is also considerably higher for groups confronting longer average delays. By segregating the sample into debt classes according to groups of claimholders, we observe that a higher number of labor creditors are involved in cases that have delays caused by this class. In a later section, we will show that these delays are usually caused by a quorum requirement.

| Characteristics by cause of delay and | d by group causing the de | elay | | | |
|---------------------------------------|---------------------------|----------|------------------------|------|--------|
| | Cause | of delay | Group causing the dela | | |
| | Quorum | Demand | Labor | Sec. | Unsec. |
| Delay | 27 | 11 | 30 | 23 | 14 |
| NOBS | 62 | 57 | 42 | 7 | 11 |
| % | 52% | 48% | 35% | 6% | 9% |
| # Meetings | 2.4 | 1.4 | 2.4 | 2.3 | 2.1 |
| # Banks | 6.0 | 5.8 | 5.9 | 7.0 | 5.5 |
| Assets (M) | 12 | 273 | 18 | 465 | 9 |
| Age | 27 | 36 | 30 | 34 | 25 |
| Debt/Assets | 28 | 10 | 27 | 1 | 49 |
| Labor Debt (%) | 4% | 2% | 6% | 2% | 4% |
| Sec Debt (%) | 15% | 20% | 16% | 31% | 18% |
| Unsec Debt (%) | 80% | 77% | 78% | 67% | 77% |
| Labor # | 254 | 439 | 385 | 55 | 52 |
| Sec # | 2 | 3 | 3 | 4 | 3 |
| Unsec # | 195 | 430 | 244 | 113 | 110 |
| Top 10 (%) | 69% | 68% | 66% | 65% | 72% |
| Top 10 (%, no banks) | 34% | 33% | 34% | 22% | 44% |

Table 3.2 - Summary statistics by cause and group

This table divides the sample based on the cause of the delay

Source: own elaboration

3.3.1 Sample selection issues

The majority of the collected data from our sample was provided by firms and the websites of the judge trustee. Therefore, it is evident that our restructuring firms were not selected at random. Thus, it may appear that our sample is biased towards a region. As shown in appendix E, we present a higher concentration of data for the southeast and south and only several cases from the north and northeast. According to Ponticelli (2012), Brazil is divided into 2,738 judicial districts, which can be treated as a single municipality or encompass a group of municipalities. Twelve judicial districts have courts whose main topic is to address bankruptcy. Moreover, Ponticelli indicated that each judicial district in Brazil has 1.6 civil courts on average.

Ponticelli (2012) noted that the state of *São Paulo* has a congestion of civil courts, which is consistent with our sample because a greater number of observations were obtained from the southeast, which had more than 10 different courts in *São Paulo* alone. Ponticelli also showed

that court congestion in the southeast is worse than in other regions and indicated that companies in Brazil are extremely concentrated in the south and southeast. We do not believe that such characteristics can completely eliminate a bias towards this region; however, we are confident that our data follows the characteristics of recovery in Brazil as a whole.

Another considerable source of selection bias is related to how the data were electronically collected. Larger companies may have access to additional resources that allow them to place their data online, or they may be able to hire high-powered law offices that can perform this task on their behalf. Because it would be extremely difficult to collect data from different courts throughout Brazil, it was necessary to search for all available information on the internet to find websites of companies, lawyers or judicial trustees that contained information on restructuring plans, general meeting minutes and creditor claims.

Because the minutes of the Assembly provide information on the lawyer representing the recovering firm and the judicial trustee, we could investigate a pattern related to lawyers in our sample data. Table 2.3 shows that the cases in our sample are dispersed among different lawyers. Therefore, we believe that this dispersion reduces the possibility of grouping faster or slower reorganizations according to a single lawyer, although it does not eliminate the possibility that a particular lawyer specializes in more complex or easier recovery cases.

Table 3.3 – Number of cases held by the same lawyer

| Number of lawyers | Number of cases (%) |
|-------------------|---------------------|
| 1 | 70 |
| 2 | 20 |
| 3 | 8 |
| >3 | 2 |
| Total | 100 |

This table reports the number of reorganizations held by the same lawyer.

Source: own elaboration.

Moreover, Iverson (2014) indicated that firms that reorganize in busy courts spend longer amounts of time in bankruptcy, and when the schedules of the presiding judges become busier, a greater number of reorganization plans are approved. We were able to analyze the concentration of cases in our sample in the hands of judicial trustees. Table 2.4 shows the lowest, median and highest levels of delay for cases in our sample with 7 of the most frequently presiding judicial trustees.

| Trustee | # of Firms | Avg. # of Meetings | Median Delay | 10% Lower Delay | 90% Higher Delay | Region |
|---------|------------|--------------------|--------------|--------------------|------------------|--------------------|
| #1 | 20 | 2.00 | 8 | 0 | 52 | Southeast (95%) |
| #2 | 11 | 1.64 | 0 | 0 | 47 | South (100%) |
| #3 | 11 | 1.82 | 7 | 0 | 77 | Southeast (100%) |
| #4 | 8 | 2.00 | 20 | 0 | 63 | South (100%) |
| #5 | 6 | 2.67 | 40 | 0 | 98 | Southeast (100%) |
| #6 | 5 | 2.60 | 23 | 9 | 67 | Center West (100%) |
| #7 | 5 | 2.40 | 8 | 7 | 41 | Center West (100%) |

Table 3.4 - Characteristics of judicial trustees

This table reports the characteristics of the reorganizations divided by judicial trustee.

Source: own elaboration

There is a considerable distribution of delays, and a specific trustee is associated with a median delay that is twice as long compared with that of the other trustees. This particular agent also has the highest level of median delays and attends meetings in the southeast. The southeast has two judge trustees with the highest level of plan vote delays. However, it is difficult to determine whether the delays are related to the region because court congestions occur more frequently in the southeast or whether the delays are related to the judge trustees because they receive more complex cases from a particular judge.

We attempted to present evidence regarding the characteristics of our data set to demonstrate the direction of the bias effects, although our conclusions are completely suggestive because we do not have a random sample. However, we believe that if a bias occurs in our sample, then it is associated with the concentration of cases in certain regions and with specific judge trustees.

3.4. Empirical strategy of analysis

Our objective is to present descriptive and econometric analyses based on the results to show the primary characteristics of delayed votes. However, there are certain shortcomings in our analyses. This paper does not intend to show the causal relations among variables because we are not conducting a controlled experiment promoted by an exogenous shock. We also do not believe that we are controlling our regressions for each possible relevant variable. Instead, this paper focuses on showing a descriptive analysis of a voting delay. Additionally, we have analyzed the regressions to calculate controlled correlations between the independent variables and the delay time.

Because we do not have information from financial statements for the majority of the companies in our sample, we could not control for conditions that can increase or decrease the complexity of the reorganization. For example, it was not possible to control for different measures of liquidity and returns from periods before the reorganization. However, we have proposed an exhaustive and initial analysis of voting delays by relating all of the information we have in our possession. Therefore, we have divided the study into two parts: a) descriptive analysis of the characteristics of voting delays; and b) relation analysis of voting delays conducted by econometric regressions.

3.4.1. Descriptive analysis

Our descriptive analysis is focused on voting delay characteristics. Here, we are interested in understanding the relationship between the classes of creditors and delays. First, we separate the possible types of delay according to their characteristics. Delays are separated according to cause (delays caused by quorum requirements) and meeting (delay characteristics in each general meeting). This analysis considers the presence of creditor classes capable of voting on the plan.

Including the creditor classes is important because the bargaining process can be more intense for cases in which a firm must pay claimholders within each class (labor, secured and unsecured) compared with cases in which one or two groups of creditors becomes part of the reorganization process. Therefore, we determined how delays are affected when a firm must present the plan to three classes of claimholders, two classes and one class. Thus, we have evaluated the parties responsible for delaying the vote in each meeting.

In sequence, we provide an analysis of the quorum votes from each round of the Assembly. The analysis aims to present the participation of the quorum from each class in all rounds of voting. Furthermore, we show an analysis of the delay among meetings. The last step of this descriptive analysis considers a proxy for financial distress and economic distress experienced by the firms in the sample. The financial distress proxy considers a professionally appraised report on the debtors' assets presented in the reorganization plan. The financial distress proxy uses the value of the assets specified in the professional report to determine the collateral for liquidation. Therefore, because the labor creditors are the first to receive restitution, followed by secured and unsecured creditors, this strategy attempts to identify how the delay is affected based on the remaining asset value and determine if a firm subtracts the debt for each class from the asset value.

Therefore, because each class has an option to liquidate or reorganize the company, we have studied situations in which each class of creditors is out-of-the-money and situations in which they are at least at-the-money. Although we are not considering the liquidity of the assets, this measure elucidates what occurs in more or less complex situations of distress when creditors can evaluate whether the assets that the reorganizing firms own are sufficient to settle the debt.

In the final step, we conduct a similar study by considering a proxy for economic distress, which is important because the conditions that allow a firm to generate the funds to pay their creditors may be related to more or less complex reorganization cases. Therefore, we collected the earnings before tax for public companies in Brazil belonging to the same sector concentration of the firms in our data. Therefore, this analysis focuses on evaluating voting delays when the recovering company belongs to a sector encountering better or worse conditions. This analysis is an additional effort to observe what occurs in cases that can be considered more or less complex.

3.4.2. Econometric regressions

Although we are not addressing causality in this paper, we believe that it is important to observe how delays in voting on the plan are affected by different variables under certain controlling factors.

From the right side of the variables, our regressions employ the (i) level of concentration of money among classes, (ii) the level of concentration of the top ten claimholders and (iii) the number of banks and creditors from all classes. Section 2 of this paper provides reference

support for the variables adopted in our empirical model according to the arguments presented by bargaining theory, holdout and coordination problems and empirical discoveries regarding recovering and bankruptcy.

First, we perform multiple *OLS* regressions to analyze the relation of the delay to the independent variables. Our empirical equation is specified as follows:

 $\begin{aligned} Delay &= \beta_0 + \beta_1 Conc + \beta_2 Conc _ top 10 + \beta_3 Number _ of _ banks + \beta_4 Number _ of _ LC + \\ &+ \beta_5 Number _ of _ SC + \beta_6 Number _ of _ UC + u \end{aligned}$

The dependent variable is the delay of recovery plan voting calculated in days. The variables "Conc" indicate the concentration of claims in each of the classes and the share of claims in the top 10 creditors. The variable "Number_of_Banks" presents the number of banks operating in the list of creditors. The variables indicating the number of LC, SC and UC show the number of creditors from each group participating in the vote in the Assembly (labor, secured and unsecured creditors).

All further tests maintain the variables adopted in equation 1. The null hypothesis of our equations is that none of the variables noted above influences the delay of voting on the plan. The following hypotheses are consistent with that of previous works.

Hypothesis H1: The claim concentration (both classes and top 10) of money may influence the delay by allowing lower disparities among creditors. Therefore, we expect a negative sign in our regressions (β_1 and β_2 are both <0).

Hypothesis H2: The number of banks may influence the delay by increasing both the bargaining process and coordination problems. Therefore, we expect a positive sign in our regressions ($\beta_3 > 0$).

Hypothesis H3: The number of claimholders in each class (LC, SC, and UC) may also influence the delay by increasing both the bargain process and conflicts of interest because the

(1)

holdout problem can become more intense. Therefore, we expect a positive sign in our regressions ($\beta_4 >0$; $\beta_5 >0$ and $\beta_6 >0$).

The first OLS regression considers the delay of the full sample. Furthermore, we perform a probit regression to estimate the probability of a high delay as a function of our covariates, in which a high delay is defined as a delay longer than the median. Thereafter, we perform the OLS and probit regressions by segregating our sample into different levels of financial and economic distress specified in our descriptive analysis. In addition, we also perform the OLS and Probit regressions to study the delay according to quorum requirements.

Therefore, we perform the following regressions in this paper:

1. An OLS regression of the delay considering our full sample;

2. A probit regression of the delay by capturing delays that are longer than the median delay in our sample;

3. Both OLS and probit regressions after segregating our sample into different levels of financial and economic distress;

4. Both OLS and probit regressions to study the determinants of delays caused by quorum requirements.

3.5. Results

The first part of our analysis captures how a delay depends on the reorganization plan characteristics. Table 3.5 presents this segregation. By separating the types of delay according to the quorum and claimholder groups (Panel A), we show that unsecured and labor creditors are the main parties responsible for quorum delays.

Table 3.5 - Number of observations and average delay by different groups

| Panel A: Numbe | r of Observations |
|----------------|-------------------|
|----------------|-------------------|

| | By Reason | | By Meeting | | |
|------------------------|-----------|--------------|-------------|-------------|-------------|
| Group | Quorum | Group Demand | 1st Meeting | 2nd Meeting | 3rd Meeting |
| Recovering Company | NA | 24 | 4 | 17 | 3 |
| Labor Only | 12 | 2 | 13 | 1 | 0 |
| Labor and Unsec. Only | 14 | 0 | 14 | 0 | 0 |
| Labor, Sec. and Unsec. | 4 | 0 | 4 | 0 | 0 |
| Sec. Only | 1 | 2 | 3 | 0 | 0 |
| Sec. and Unsec. Only | 3 | 0 | 3 | 0 | 0 |
| All classes | 1 | 0 | 1 | 0 | 0 |
| Unsec. Only | 14 | 4 | 17 | 1 | 0 |
| Unsec. And Labor Only | 11 | 0 | 11 | 0 | 0 |

Panel B: Average Delay

| | | | | | Dema | unded by |
|-----|--------------------|------------|--------|--------|----------|-------------|
| | | All Sample | Quorum | Demand | Creditor | Debtholders |
| (1) | Three Classes | 22 | 34 | 12 | 47 | 12 |
| (2) | Two Classes | 20 | 22 | 16 | | 16 |
| (3) | Unsec. and Labor | 21 | 25 | 9 | | 9 |
| (4) | Sec. and Unsec. | 18 | 10 | 22 | | 22 |
| (5) | One Class (unsec.) | 9 | 14 | 3 | | 3 |
| | t-test (1-2) | 0.41 | 1.40 | -0.55 | | -0.55 |
| | t-test (2-5) | 1.95 | 1.10 | 1.78 | | 1.78 |

Source: own elaboration

The same number of observations are available for votes that are delayed when only unsecured creditors and both unsecured and labor creditors do not attend the first general meeting call. Individually, labor claimholders are the second highest cause of delayed votes because of quorum requirements in the first Assembly. Interestingly, there are limited cases in which secured creditors are responsible for delaying the vote because of quorum requirements. This result shows that secured creditors are usually not responsible for delaying the plan vote because of a lack of attendance. This group consists of several creditors in Brazil, and they appear to be the most frequently present class of claimholders during the meetings.

It is also interesting to observe that labor and unsecured creditors jointly cause quorum delays in many cases. These classes usually have a large number of creditors, and when the value of the debt is more dispersed among creditors, many claimholders can neglect the reorganization case because the associated costs of attendance can be higher than the value they will receive. For example, the costs associated with hiring a lawyer for the case can be higher than a particular claim a creditor owns. Additionally, we identified several cases in our sample in which the labor class of creditors was represented as a group. It appears that a strategy of voting similar to that employed by the Chapter 11 code in which claims administrators collect all votes could help to reduce the problem of quorum-related delays.

Table 2.5 shows that several cases of delay were caused by creditors' demands. The Assembly minutes reveal that creditors occasionally argue against a specific condition of the plan and request changes or the debtor may realize that they will need to show better terms to obtain the approval of the creditors during the meeting. In addition, the debtor may begin the general meeting requesting a delay of several days because new conditions must be delineated in the plan.

Because many creditors hire a lawyer to attend the meeting, it is nearly always the case that these lawyers will request a delay to explain to their clients the modifications proposed in the Assembly. In several cases, creditors vote on the plan without requesting modifications. Our data reveals that in most cases, the debtor requests a delay to prepare a modification to the original plan.

Therefore, it becomes clear that the delays caused by quorum requirements are usually caused by unsecured and labor creditors and that further delays are related to debtors modifying the original plan according to the suggestions by the classes of claimholders. By separating the delay according to meeting, the results how that the debtor is the main party responsible for delays in the second meeting and is the sole party responsible for delays in the third meeting. In our sample, three rounds of delay at most are required.

The results are similar when we segregate the sample according to quorum and demand delays. By definition, demand delays are caused by demands from creditors or debtors regarding change specifications in the voting plan.

Panel B of table 2.5 reveals what occurs for cases that consider all classes that are deciding on the recovery and cases in which only one or two classes are voting on the plan. The results are specified according to the average delay. Considering the full sample, the average delay is longer when all classes are in charge of voting on the reorganization plan, and the delay decreases when a firm only has two classes of claimholders and reduces even further when only one class is in charge of voting on the plan. The latter case only occurs with unsecured creditors because in our sample, they are the sole group who participates alone in meetings.

Delays from demand are more intense when secured and unsecured creditors are able to vote on the plan. By segregating the demand according to creditor and debtor, the results show that firms in our sample encountering restructuring requested a delay solely in cases in which all classes of creditors were able to vote.

Because there is no need for a minimum quorum requirement to vote on the plan after the first general meeting, creditors know that a lack of attendance will no longer matter. In appendix F, we present the quorum according to class.

The labor and unsecured classes of creditors registered considerable absences in the first meeting. According to appendix F, the median level of labor and unsecured classes in the first round is approximately 68% and 54%, respectively. This is a clear indication that both classes cause delays because of quorum requirements in the first meeting. Moreover, considering the interval from the first to the third meetings, we observe that the number of labor and unsecured creditors in each round increases and is 84% in the last round. The median participation of secured claimholders remains the same for all rounds.

In addition to the evolution of quorum attendance for each creditor class, we show the delay segregated by rounds. This finding indicates the delay between the meetings based on the type of plan vote delay. Appendix G shows that the delays demanded by the recovering company are usually longer. This finding is logical because the debtor is in charge of preparing all modifications according to the suggestions presented during the meetings. It is important to highlight that the median delay for this group is nearly the same in each round of voting.

In cases where there is no delay in the first meeting because of quorum requirements, the bargaining process may intensify, and the debtor may request a postponement in the Assembly to prepare a better plan according to the creditors' indications. Because the creditor delay (at least for labor and unsecured classes) in the first meeting is usually caused by a quorum requirement, the median period of days for the delay is short. However, when the delay is caused by certain suggestions from the secured class of creditors in the first meeting,

the period of days for the delay is closer that caused by the debtor for implementing modifications to the reorganization plan. Similarly, the median period of days for delays caused by unsecured creditors in the second meeting is slightly greater than that caused by the debtor for second meetings.

A possible explanation for this result may be that the incentives of unsecured creditors are more closely aligned with that of equity holders. Therefore, it is logical to propose modifications that prevent the plan from being rejected during the meeting. According to the data, the negotiations become more intense after the first round. Appendix G also reveals that delays caused by labor creditors appear to be short regardless of the round. In our sample, the sole case in which the delay caused by labor creditors was not a matter of quorum occurred because the debtor was close to promoting a new asset evaluation to sell the assets to pay all labor debt.

In the next section, we will present how delays are affected according to our measure of financial and economic distress. Tables 3.6 and 3.7 provide this analysis. Table 3.6 presents the average delay when the sample is divided according to financial distress. The first and second intervals show conditions in which the classes would not be protected by the asset value (out-of-the-money) in case of liquidation. The other intervals show different levels of asset collateral from the lowest to the highest level of protection.

This separation shows that higher levels of assets owned by a debtor for each debt coin coincide with longer average delays. However, this result does not apply to unsecured creditors. This table reveals an important insight: unsecured creditors are related to longer delays in extreme out-of-the-money situations, whereas labor and secured creditors are more closely related to delays when they are assured to receive their claim in the case of liquidation.

Therefore, negotiations between these classes and the debtor appear to be more intense in such cases, which require the debtor to present better offers in the reorganization plan. Conversely, when unsecured creditors realize that they will not receive their claim, they cause a longer average delay. Again, because unsecured creditors are more closely aligned with equity holders, a delay can show an attempt to avoid plan rejection. It is also worthwhile to note the number of observations for the different intervals. Labor and secured creditors are at

least at-the-money the majority of the time in our sample, whereas unsecured creditors are out-of-the-money.

Table 3.6 - Average delay and number of observations in the subsamples divided by assets

This table reports the average delay and the number of observations in 2x4 groups divided by the group causing delay and by the hypothetical amount of remaining assets after liquidation and after all labor debtholders (the most senior ones) are paid.

| Average Delay | | | | | | |
|------------------------|----|--------|---------|-----|--|--|
| Class\Remaining assets | <5 | ≥5, <0 | ≥0, <.5 | ≥.5 | | |
| Labor | 35 | 7 | 37 | 35 | | |
| Sec. | NA | 8 | 8 | 37 | | |
| Unsec. | 19 | 8 | 8 | 8 | | |
| Number of Observations | | | | | | |
| Class\Remaining Assets | <5 | ≥5, <0 | ≥0, <.5 | ≥.5 | | |
| Labor | 2 | 1 | 3 | 23 | | |
| Sec. | 0 | 1 | 1 | 3 | | |
| Unsec. | 6 | 1 | 2 | 1 | | |

Source: own elaboration.

Table 3.7 - Average delay and number of observations in the subsamples divided by sector return

This table reports the average delay and the number of observations in 2x4 groups divided by the group causing delay and by the ratability of each sector. We used the Bloomberg sectors to classify the companies in sectors, and then we used the average EBITDA divided by the total book value of all of the listed companies as a measure of ratability of a given sector in a given year.

| Average Delay | | | | | |
|---------------------|------|----------|----------|-----|--|
| Class\Sector Return | <2% | ≥2%, <5% | ≥5%, <7% | ≥7% | |
| Labor | 28 | 30 | 30 | 31 | |
| Sec. | 28 | 55 | | 13 | |
| Unsec. | 43 | 10 | 8 | 7 | |
| t-test (L-S) | 0.2 | | | 8.3 | |
| t-test (S-U) | -2.7 | | | 3.6 | |

| Number of Observations | | | | | | |
|------------------------|-----|----------|----------|-----|--|--|
| Class\Sector Return | <2% | ≥2%, <5% | ≥5%, <7% | ≥7% | | |
| Labor | 6 | 4 | 13 | 19 | | |
| Sec. | 2 | 1 | 0 | 4 | | |
| Unsec. | 2 | 2 | 4 | 3 | | |

Source: own elaboration

Table 3.7 provides the grouping of companies according to the profitability of their sector. The average delay is longer when the earnings for the sector are lower for the secured and unsecured classes. Therefore, worse economic conditions in the sector to which a firm belongs appear to matter, particularly in delays demanded by secured and unsecured creditors. In such conditions, the debtor's strategy to continue operations becomes less reliable because positive future cash flows may be more difficult to obtain.

We believe that our regression analysis may corroborate the results obtained by the descriptive analysis. Table 3.8 shows the result for the OLS regression of the delay considering our full sample.

We also perform all regressions by controlling for fixed effects according to year. The variable delay continues to be the time interval (in days) between the first general meeting and the final meeting at which the reorganization plan is voted on.

Table 3.8 indicates that the coefficient of the variable Class Concentration is negative and significant. This finding is consistent with hypothesis H1 of this study, and we believe that the meaning is simple. Because a higher concentration of funding in one class of claimholder increases the alignment of all perspectives, creditors are expected to adopt a consensus decision more quickly relative to situations in which the claims are more dispersed between the classes of creditors. Therefore, a higher concentration of claims in a specific class may help to reduce issues related to creditor coordination and holdouts. Our results are consistent with that of Ivashina et al. (2015). The remaining coefficients are not statistically significant.

We are also interested in evaluating the results that indicate higher levels of delay in the voting process. Therefore, we perform a probit regression using high-level delays as a variable with a value of one when the delay is above the median and zero otherwise. Table 3.9 provides the results.

The variable Class Concentration remains significant and retains the same sign. However, the variable Number_of_Banks becomes significant and is positively correlated with longer delays. We believe that the coordination problem can become more intense in such a situation. Our results are consistent with that of Helwege (1999).

Table 3.8 - Regression of delay on covariates

The symbols ***, ** and * denote significance at the 1% level, 5% level and 10% level, respectively. Class concentration is the maximum debt (as a proportion of the total debt) held by a single class of debtholders. Con. Top 10 is the concentration of the proportion of debt held by the debtholders with the highest amount of debt. Delay is the time interval (in days) between the first meeting and the conclusion of the reorganization. Robust standard errors are shown in parentheses.

| | Dependent Variable: | | | |
|-------------------------|---------------------|----------|--|--|
| | Delay | (Days) | | |
| | (1) | (2) | | |
| Class Concentration | -33.652* | -34.036* | | |
| | (17.534) | (17.593) | | |
| Conc. Top 10 | 9.195 | 10.539 | | |
| | (15.446) | (15.383) | | |
| # of Banks | 1.140 | 1.164 | | |
| | (0.845) | (0.846) | | |
| # of Labor Debtholders | -0.002 | -0.002 | | |
| | (0.003) | (0.003) | | |
| # of Sec. Debtholders | 0.035 | 0.547 | | |
| | (0.716) | (0.728) | | |
| # of Unsec. Debtholders | -0.006 | -0.011 | | |
| | (0.007) | (0.008) | | |
| | | | | |
| Year FE? | No | Yes | | |
| Observations | 103 | 103 | | |
| R^2 | 0.074 | 0.232 | | |

Source: own elaboration

Table 3.9 - Probit estimates

The symbols ***, ** and * denote significance at the 1% level, 5% level and 10% level, respectively. Class concentration is the maximum debt (as a proportion of the total debt) held by a single class of debtholders. Con. Top 10 is the concentration of the proportion of debt held by the debtholders with the highest amount of debt. Delay is the time interval (in days) between the first meeting and the conclusion of the reorganization. High delay is defined as a variable taking the value one when the delay is above the median and zero otherwise.

| | Dependent Variable: | | | |
|-------------------------|---------------------|--------------|--|--|
| | Probability o | f High Delay | | |
| | (1) | (2) | | |
| Class Concentration | -1.533* | -0.589** | | |
| | (0.867) | (0.291) | | |
| Conc. Top 10 | 0.539 | 0.308 | | |
| | (0.781) | (0.255) | | |
| # of Banks | 0.099** | 0.028** | | |
| | (0.044) | (0.014) | | |
| # of Labor Debtholders | -0.001 | -0.0001 | | |
| | (0.0004) | (0.0001) | | |
| # of Sec. Debtholders | -0.019 | -0.001 | | |
| | (0.041) | (0.012) | | |
| # of Unsec. Debtholders | -0.00005 | -0.00004 | | |
| | (0.0004) | (0.0001) | | |
| | | | | |
| Year FE? | No | Yes | | |
| Observations | 103 | 103 | | |
| Log Likelihood | -61.100 | -88.957 | | |

Source: own elaboration

When segregating the analysis according to financial distress levels, changes of sign for different levels of asset collateral should be noted. Table 3.10 shows the results by dividing the subsamples according to the remaining assets quantiles.

We observe that Class Concentration continues is still relevant at lower levels in maintaining the direction of the previous sign. Moreover, the concentration of debt held by claimholders with the highest amount of debt owed to them (top 10) is now significant and has a positive sign, which was predicted in hypothesis H1. However, the variable Class Concentration changes sign and becomes significant for the lowest median level of our segregation. The same sign change occurs for the variable Conc. Top 10 (column 3), although it is not significant. The variables representing the number of creditors also behave differently from our prediction.

Table 3.10 - Delay regression estimated in the subsamples divided by firm assets

The symbols ***, ** and * denote significance at the 1% level, 5% level and 10% level, respectively. Class concentration is the maximum debt (as a proportion of the total debt) held by a single class of debtholders. Con. Top 10 is the concentration of the proportion of debt held by the debtholders with the highest amount of debt. Delay is the time interval (in days) between the first meeting and the conclusion of the reorganization. Subsamples are defined in terms of the remaining assets quantiles. Refer to table 3.6 for the definition of the variable of remaining assets. Robust standard errors are shown in parentheses.

| | Dependent Variable: Delay (Days) | | | | | | | | | |
|-------------------------|----------------------------------|-----------|------------|-----------|-----------|-------------|--|--|--|--|
| | Amount of Remaining Assets: | | | | | | | | | |
| | Low | | Medium | | High | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | | | | |
| Class Concentration | 31.316 | 50.821** | -131.233** | 1.433 | -285.058 | -1,722.580 | | | | |
| | (48.418) | (20.019) | (58.432) | (102.992) | (654.711) | (2,073.142) | | | | |
| Conc. Top 10 | 45.514 | 47.498** | -5.348 | 74.936 | 32.780 | 74.492 | | | | |
| | (44.739) | (20.040) | (54.762) | (93.083) | (39.938) | (87.904) | | | | |
| # of Banks | -0.041 | 0.659 | 2.537 | 0.422 | 1.699 | 5.067 | | | | |
| | (2.005) | (1.052) | (1.995) | (2.342) | (2.143) | (3.736) | | | | |
| # of Labor Debtholders | -0.008 | -0.031*** | 0.016 | 0.012 | 0.026 | -0.023 | | | | |
| | (0.013) | (0.006) | (0.027) | (0.038) | (0.073) | (0.213) | | | | |
| # of Sec. Debtholders | 0.183 | 0.951 | -4.730 | -0.545 | -11.136 | -28.411* | | | | |
| | (0.920) | (0.533) | (4.837) | (6.801) | (9.339) | (14.299) | | | | |
| # of Unsec. Debtholders | -0.045 | -0.021 | 0.021 | 0.006 | -0.009 | -0.035 | | | | |
| | (0.034) | (0.016) | (0.033) | (0.042) | (0.077) | (0.156) | | | | |
| | | | | | | | | | | |
| Year FE? | No | Yes | No | Yes | No | Yes | | | | |
| Observations | 20 | 20 | 22 | 22 | 24 | 24 | | | | |
| \mathbb{R}^2 | 0.202 | 0.923 | 0.303 | 0.585 | 0.153 | 0.545 | | | | |

Source: own elaboration

Table 3.11 shows the delay regression estimated for the subsamples divided according to the sectors' earnings performance. The variable Class Concentration has significance solely for demand delays. Thus, when the cause for the delayed plan vote is a minimum quorum requirement, the regression result has no statistical significance.

Table 3.11 - Delay regression estimated in the subsamples divided by sector ratability

The symbols ***, ** and * denote significance at the 1% level, 5% level and 10% level, respectively. Class concentration is the maximum debt (as a proportion of the total debt) held by a single class of debtholders. Con. Top 10 is the concentration of the proportion of debt held by the debtholders with the highest amount of debt. Delay is the time interval (in days) between the first meeting and the conclusion of the reorganization. Subsamples are defined in terms of the sector returns quantiles. Refer to table 3.7 for the definition of the variable of sector returns. Robust standard errors are shown in parentheses.

| | Dependent Variable: Delay (Days) | | | | | | | | | |
|-------------------------|----------------------------------|----------|----------|----------|----------|----------|--|--|--|--|
| | Sector Rentability: | | | | | | | | | |
| | Low | | Medium | | High | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | | | | |
| Class Concentration | -13.094 | -11.253 | -10.175 | -31.574 | -28.561 | -59.971 | | | | |
| | (32.305) | (35.890) | (33.116) | (34.755) | (33.409) | (35.910) | | | | |
| Conc. Top 10 | 2.014 | 3.734 | 31.099 | 21.702 | 17.392 | 8.228 | | | | |
| | (28.525) | (34.382) | (26.384) | (27.148) | (30.187) | (30.849) | | | | |
| # of Banks | 0.142 | 0.375 | 1.136 | 0.993 | 1.236 | 1.794 | | | | |
| | (1.511) | (1.715) | (1.689) | (1.737) | (1.540) | (1.614) | | | | |
| # of Labor Debtholders | -0.008 | -0.009 | 0.023 | 0.022 | -0.002 | -0.001 | | | | |
| | (0.013) | (0.014) | (0.023) | (0.032) | (0.004) | (0.004) | | | | |
| # of Sec. Debtholders | 8.472** | 8.561** | -0.797 | -2.167 | -0.337 | 0.074 | | | | |
| | (3.493) | (3.972) | (3.533) | (4.244) | (0.851) | (0.896) | | | | |
| # of Unsec. Debtholders | -0.016 | -0.025 | -0.001 | 0.006 | -0.005 | -0.016 | | | | |
| | (0.038) | (0.042) | (0.033) | (0.035) | (0.009) | (0.011) | | | | |
| | | | | | | | | | | |
| Year FE? | No | Yes | No | Yes | No | Yes | | | | |
| Observations | 38 | 38 | 32 | 32 | 33 | 33 | | | | |
| R^2 | 0.204 | 0.244 | 0.099 | 0.366 | 0.122 | 0.401 | | | | |

Source: own elaboration

This finding indicates that a concentration of funding during restructuring may influence voting delays because of requirements that originate from the debtor and creditors; however, it does not appear to impact the creditors' decisions to avoid taking part in the first Assembly. Changes in the sign of the number of creditors were observed among all classes. Appendices H and I shows the delay regression estimated in the subsamples divided by the cause of the delay. Appendix I shows that the same result was obtained by the probit model, in which a high delay is defined as a variable taking the value of one when the delay is above the median; however, our subsamples are now defined in terms of the cause of the delay.

Appendix I reveals a robust result for longer levels of vote delay compared with those previously observed. Because there is more information regarding the possible causes of the delay based on a player's interaction in the literature, we decided to perform a further analysis of the quorum delay. Therefore, we decide to explore the potential participation of the determinant classes in each Assembly. Appendix J presents the results of this test.

The variable Class Concentration appears to be important for the three classes of creditors, and it is significant in the first general meeting for all classes of claimholders, in the second meeting for secured creditors, and in the third meeting for unsecured creditors. In addition, the concentration of funding is important for all classes with regard to voting; however, it becomes more relevant for the secured and unsecured classes as meetings continue to occur. Although it is of limited economic significance, the variable Number_of_Banks is significant and positive in the last meeting for labor and unsecured creditors.

We also elucidate the characteristics of longer and shorter delays in relation to the bargaining process and analyze the topics underlying firm and creditor demands for delays. Appendix K shows that reorganization plans that require a greater amount of time until the final vote are correlated with divestment proposals. On average, the claim concentration in the top 10 bank creditors is higher for longer delays. Moreover, a higher portion of cases in which the debt is reduced from the original value occur in cases with a longer time delay. Appendix L reveals that many rounds of discussions are required to determine the assets that should be sold to generate funds. Creditors usually indicate the minimum acceptable price to be adopted. In addition, firms encounter difficulties in obtaining the permission of secure creditors to sell assets that were allocated to the creditors as collateral prior to the reorganization period.

We also observe that firms usually must offer better interest rates and lower debt discounts to claimholders. Higher time delays cause more cases of debt discount modifications in which firms are required to pay the total value specified by the claimholder or reduce their proposed debt discount. Cases of modifications to the interest rate incur slightly shorter time delays.

We believe that our paper contributes to literature, which includes the works of Gilson (1990), Gilson et al. (1990), Brown et al.(1993), Franks and Tourus (1994), James (1995), Chatterjee et al. (1995), Hotchkiss and Mooradian (1997), Helwege (1999), Mooradian and Ryan (2005), Ayotte and Morrison (2007), Ponticelli (2012) and Ivashina et al. (2015), because it provides additional evidence on the characteristics of delays in the reorganization process.

3.6. Conclusions

In this paper, we study the characteristics of vote delays during reorganizations based on a sample of 120 Brazilian firms from 2005 to 2014. To our knowledge, this is the first paper that has attempted to evaluate the delays to reorganization plan votes according to each player's (debtor and claimholder classes) interaction in the Assembly.

We believe that this paper contributes to the literature on reorganization and bankruptcy by providing important insights into the characteristics of associated delays. Our results indicate that a higher concentration of claims is negatively correlated with delays. In addition, we have found that a concentration of funding during restructuring may influence voting delays because of requirements that originate from the debtor and creditors; however, this factor does not appear to impact the creditors' decision to avoid appearing at the first Assembly.

Our results also show that for longer levels of delay, the concentration of claims among classes remains significant and retains the same sign. Moreover, the number of banks participating in the reorganization is positively correlated with longer delays.

The segregation of our sample provides important insights regarding the characteristics of the delays. First, the results show how delays are affected by the minimum quorum requirements in Brazilian bankruptcy law. In addition, unsecured and labor classes are the main classes of creditors responsible for quorum delays, with both classes of creditors causing individual and joint quorum delays in many cases. Second, the results indicate that delays of demand are

more intense when only secured and unsecured creditors are able to vote on the plan. This type of delay is usually requested by the debtor, and we argue that it occurs so that the debtor may promote modifications to the original plan; however, it is also commonly caused by claimholder lawyers, who frequently request time to present a new proposal from the debtor to their clients.

The analysis segregated according to financial and economic distress reveals the effect on the average delay according to different intervals of measurement. Compared with unsecured creditors, this separation shows that higher asset levels owned by a debtor for each debt coincide with longer delays. Additionally, we show that the average delay is longer when the sector conditions are poorer.

This paper has certain limitations. Unfortunately, we do not address causality for the results in this paper; therefore, our econometric results may differ from what we have specified. However, because our purpose in this study was to show the characteristics of voting delays, our econometric results solely corroborate our descriptive analysis by controlling the delay analysis with higher groups of variables to show a relation. In addition, our sample may suffer from selection bias, although we indicate a possible cause of this bias in the paper. Thus, future research should be conducted to demonstrate causality between the claimholder classes and voting delays.

4. CORPORATE RESTRUCTURING: EMPIRICAL EVIDENCE ON THE APPROVAL OF THE REORGANIZATION PLAN

4.1 Introduction

When a company faces financial distress it may choose to devise a reorganization plan. Such a plan must be presented to its creditors who ultimately vote to approve the reorganization plan or subject the company to bankruptcy proceedings. This paper examines this decision making process.

The literature on law and finance states that debt restructuring can be considered a complex decision process involving a firm and its lenders, and stresses that debt reorganization plans and claimholders' relative recoveries in court depend on how disputes between creditors are resolved (Gilson, Hotchkiss, and Ruback, 2000). Empirical evidence demonstrates the importance of bankruptcy law to the credit market and enforcement by courts.

A country's bankruptcy laws provide the basis for helping claimholders resolve uncontemplated conflicts during debt restructuring. Therefore, in designing bankruptcy laws, policymakers must consider numerous reorganization procedures to reduce the likelihood that a firm is dismantled inefficiently.

This study presents empirical evidence regarding the approval of reorganization plans, as we believe that a clear gap exists in how each class of creditors decides to approve or reject reorganization plans during the creditors' general meeting. Hence, this paper investigates a very important issue from not only a theoretical perspective but also a managerial point of view.

We provide an analysis based on Kaplan and Stromberg (2002) and Kaplan and Stromberg (2004) using databases suffering from sample bias not present in data from quasi-experiments. Therefore, we do not address causality in our study. However, to our knowledge, this is the first study to examine the likelihood of acceptance of reorganization plans by considering the decision process of each class of claimholders and the characteristics of the plans. As Kordana and Posner (1999) note, little attention has been devoted to the examination of the correspondence between voting rules during reorganizations. Moreover, Thadden, Berglof

and Roland (2010) suggest that many conflicts of interests are solved ex post during the bankruptcy or reorganization period. We present empirical evidence about the characteristics of voting on reorganization plans by separately conducting the analyses according to the outcome of the vote on the plan.

Following the requirements specified by Brazilian bankruptcy law 11,101, we attempt to establish the likelihood of acceptance of reorganization plans when firms present them to each claimholder during the creditors' general meeting. We aim to understand how different classes of creditors vote in approving or rejecting recovery plans by controlling for the conditions specified in the reorganization plans. We analyze data collected from 2005 to 2014; we use 2005 as the starting year because the new Brazilian bankruptcy law entered into force in this year.

Why do we use Brazilian data in our study? Under Brazilian bankruptcy law single creditors' votes are considered in the decision to reorganize or liquidate a company, where claimholders meet with each other in an Assembly to decide the future of the company. Given this context, it may be easier to identify differences in voting power, incentives and influence from both classes of creditors and individual claimholders since we can observe the interaction among creditors during this meeting. In the US, indenture trustees act on behalf of creditors: therefore, claimholders do not meet to vote on reorganization plans. Although creditors vote by following a different procedure, Ponticelli (2012) shows that similarities exist between Brazilian bankruptcy law and the US bankruptcy code. Further, Anapolsky and Woods (2013) present more details about the similarities and differences in reorganization rules between the two countries.

Under new Brazilian bankruptcy law, creditors play a more important role in company restructuring because of the voting procedure for reorganization plans. After choosing to restructure its debt in court, a firm must create a reorganization plan that aims to present a solution for its financial distress. Unlike Chapter 11 in the US bankruptcy code, Brazilian bankruptcy law does not require a claim administrator to organize and provide information on all claims and claimholders. Moreover, when a creditor does not approve the reorganization plan presented by a specific firm, the different classes of creditors decide whether to allow recover or to subject the firm to bankruptcy together in an Assembly, where the labor, secured and unsecured creditors vote on the plan.

All three classes of creditors must vote to approve the plan. With regard to secured and unsecured creditors, the plan must be accepted by a majority of creditors at the meeting (number criteria) and at least half of the total debt value for each class must be represented during the vote (value criteria). By contrast, for labor creditors, only a majority vote is required (number criteria). These two criteria allow firms to avoid opportunistic behavior from creditors, where some creditors might refuse to approve the plan if they do not receive special treatment. If the plan is rejected, the firm enters bankruptcy.

We use data from *Vara de Falências e Recuperação Judicial* in *São Paulo* and from firms' website. Based on data on 120 restructuring plans from 2005 to 2014 we find that the labor class of creditors approves the reorganization plan even when the plan is ultimately rejected. Moreover, we find that approved plans have a smaller portion of debt discounted and higher grace period on average than rejected and modified plans. Further, rejected reorganization plans have higher disparities in payment proposals within the same class of creditors, and reorganization plans that were modified during the creditors' meeting have higher disparities in payment proposals among the classes of creditors.

To evaluate the likelihood of acceptance of reorganization plans, we run a probit regression. We find that asset disposal increases the likelihood of restructuring plan approval. One possible interpretation of this finding is that collateral is an important determinant of recovery plan acceptance. Creditors seem to generally prefer that firms liquidate a portion of their assets since it facilitates their ability to receive cash. We also find that secured debt creditors have lower incentives than the other classes to creditors to accept reorganization plans; moreover, since they are the last class of creditors to receive payment after liquidation, unsecured creditors are more likely to accept reorganization plans. Collectively, these results show that debtholders' behavior depends on their claim rights. We also find that high debt values from banks in the junior class are negatively related to plan acceptance and that payment disparities among all classes of creditors seem to reduce the likelihood of acceptance.

This paper is structured as follows: The second section discusses the related literature. The third section describes our data. The fourth section describes the empirical strategy of analysis. The fifth section reports empirical results and a related discussion. The final section concludes the paper.

4.2. Related Literature

The implementation of a bankruptcy process by law raises some concerns regarding its effects on security prices, default losses, priority rules and financial reorganization. According to Gilson (2012), academic research on bankruptcy has been concentrated in four main areas: bankruptcy resolution, bankruptcy costs (Haugen and Senbet, 1978, 1988; Weiss, 1990), governance changes in bankruptcy and the effects of bankruptcy on stock prices (Eberhart, Moore, and Roenfeldt, 1990). This research focuses on bankruptcy resolution.

We are interested in understanding creditors' decision making about the restructuring process. According to Djankov, McLiesh, and Shleifer (2007) there is a group of papers that connect legal protection for creditors and judicial efficiency. For instance, Claessens and Klapper (2005) argue that greater judicial efficiency is strongly associated with greater use of bankruptcy, although the combination of stronger creditor rights and greater judicial efficiency leads to less use of bankruptcy.

We would like to highlight the studies that seem to explain why the resolution of financial distress varies across countries. Gennaioli and Rossi (2010) show that strong creditor protection increases the efficiency of the resolution of financial distress because it provides judicial incentives.

Based on a sample of 49 countries, La Porta et al. (1997) find that countries with poor investor protection (legal rules and quality of law enforcement) have smaller and narrower capital markets. To construct a measure of the efficiency of debt enforcement, Djankov et al. (2008) compare debt enforcement for the same kind of business in 88 different countries. They find that institutions that regulate insolvency usually perform poorly owing to their inefficient bankruptcy procedures.

Penati and Zingales (1997) reveal the importance of understanding the legal environment in which a restructuring process occurs because of its effects on parties' outside options. For example, the Italian bankruptcy code includes two main procedures (liquidation and reorganization) for addressing an insolvent company.

In the case of bankruptcy liquidation, the bankruptcy court appoints a trustee who shuts down the firm and sells its assets (or even sells the whole business). The absolute priority rule then determines how the proceeds of the sale are divided among the claimants (Franks and Torous, 1989, 1994).

Since we focus on the reorganization process for distressed firms, it is important to examine guidance provided regarding the power of law. In this regard, Platt and Platt (2008) examine factors that seem to predict financial distress in the US, Europe and Asia: they find that differences in accounting rules, legal practices, environmental laws and business practices between regions may limit the degree of convergence in the area of financial distress. Indeed, bankruptcy law varies considerably around the world.

Several studies have examined the main characteristics of restructuring processes around the world. According to Hotchkiss et al. (2008), who specifically focus on the restructuring of distressed firms in the UK, Sweden, France, Germany and Japan, the degree to which companies' business is protected from creditors also varies considerably.

Moreover, Franks, Nyborg, and Torous (1996) describe the restructuring process on the UK and argue that creditors who receive some company assets as collateral generally have an interest in acquiring such assets. Thus, legislation that provides broad protection for lenders can permit the restructuring of viable enterprises. As one can see, a wide variety of papers have discussed the bankruptcy law of countries around the world, where some have focused on similarities and others, on differences.

In studying the primary effects of the new Brazilian bankruptcy law, Araujo and Funchal (2009) find that the new law has had a rapid and strong impact on the number of bankruptcies in Brazil. According to these authors, expansion of the credit market is observable. Moreover, Kadiyala (2011) investigates the impact of bankruptcy law reform on capital markets in Brazil and, based on an empirical analysis of four different stock indexes (*Bovespa, IBX, IGCX and ITAG*), shows that aggregate stock market indexes reacted positively by the time that new rules were signed into law. These results are consistent with those of La Porta et al. (1997), who find that better bankruptcy laws lead to increased equity values.

Following Quian and Straham's (2007) argument that the quality of the legal environment shapes the characteristics and terms of bank loans around the world, Araujo, Ferreira and Funchal (2012) evaluate the empirical consequences of the bankruptcy reform on credit markets by using a quasi-experimental approach to compare Brazilian firms with non-Brazilian firms (companies from Argentina, Chile and Mexico). The result shows that increased protection is responsible for both an increase in the amount of long-term debt and a reduction in the cost of capital.

Funchal and Clovis (2009) study firms' capital structure and bankruptcy law design to examine the effect of changes in priorities among creditors, and find a significant impact on firm's financial policy in line with lower costs of capital.

Exploiting the quality of court enforcement across Brazilian judicial districts, Ponticelli (2012) shows that efficient court enforcement helps sustain higher capital investment and productivity for companies. Thus, firms that face better court enforcement benefit in terms of access to external financing, investment and productivity.

Moreover, De Assis (2012) present an interesting study focused on analyzing judicial recovery proceedings immediately following the implementation of the new bankruptcy law. This paper provides some analysis of restructuring plans and shows that the average time to complete all stages of the proceedings exceeds a reasonable amount of time. However, a broad and deep analysis of restructuring plans remains necessary, and our paper intends to fill this research gap. According to the studies noted earlier, some efforts have been made to understand the impact of the new Brazilian bankruptcy law on both markets and companies. Because we decided to analyze restructuring data from courts while incorporating additional information from reorganization plans, our paper must corroborate previous work since it intends to present and analyze information provided in reorganization plans.

4.2.1. Analysis of the Approval of Reorganization Plans

Under the new Brazilian bankruptcy law, court-based restructuring permits different means of restructuring, such as a potential change in corporate control, the stipulation of special terms and conditions for payments of obligations, and the right of veto for creditors regarding restructuring plans. Results regarding the new Brazilian bankruptcy law show that many

companies have chosen to adopt a restructuring plan in order to address their financial problems. Appendix M shows the decline in bankruptcy trials after the implementation of the new Brazilian restructuring law.

Moreover, the total number of restructuring cases has increased in each year after the new law entered into force. Until 2005, bankruptcy in Brazil was ruled by Law 7,661. De Carvalho (2005) explains the reasons why this bankruptcy code was not efficient. Specifically, he suggests that law 7,661 did not offer conditions for the recovery of economically viable companies that faced financial distress. The old reorganization procedure (known as *concordata*) only postponed corporate debt. Moreover, as the main shortcomings of the previous system, the liquidation process was characterized by extensive bureaucracy, optimal recovery could generally not be achieved in situations of distress, and firms faced difficulties in obtaining new debt to restructure their business. Moreover, the insolvency process did not effectively protect credit rights after liquidation.

According to Funchal (2006), creditors play a more significant role in the restructuring procedure under the new Brazilian bankruptcy law because they are involved in the negotiation and voting on the reorganization plan. In brief, the new law imposes to two primary changes to increase the chance of a successful reorganization. First, debtors are protected by the court for a period of 180 days in which creditors cannot seize any of the firm's goods, even those provided as collateral. Second, lenders of new funding postbankruptcy enjoy absolute priority. Moreover, one can also identify some modifications regarding the new liquidation procedure.

The new Brazilian bankruptcy law states that creditors must vote on the reorganization plan, although the alternative of a court-appointed new manager was rejected. Despite the improvements of the new law, it complicates the process of resolving firms' debts by forcing heterogeneous creditors to vote together (Funchal, 2006). As noted earlier, all three classes of creditors must vote to approve the final plan. Yet, Brown (1989) finds that heterogeneous groups of creditors are more concerned with receiving guarantees, whereas homogenous creditors are primarily concerned with participating in the restructuring process.

Previous studies have examined the relation between bankruptcy law and credit and capital markets, while others have connected micro-economic issues to the Brazilian law reform.

Nevertheless, our research aims to elucidate how creditors make decisions regarding reorganization plans. We believe that through an initial analysis of reorganization plans, we can obtain interesting results.

Reorganization plans must be approved at the creditors' meeting, where creditors are divided into three classes for their vote. It is important to highlight that tax creditors and creditors holding loans supported by fiduciary alienation of assets are not subject to recovery: therefore, they do not vote on reorganization plans.

Secured creditors vote as a class and represent an amount up to the value of their collateral. Moreover, when creditors demand more than their collateral value, they can vote as both secured and unsecured creditors, and they then represent exactly the same amount they own for each category. Debtors can indicate the period that they believe to be reasonable by which to pay their secured and unsecured creditors. However, according to article 54 of Law 11.101/2005, debtors cannot stipulate a period greater than one year for labor debt in their restructuring plan.

Once a company has decided to undergo court restructuring, the process by which creditors' acceptance or rejection of the reorganization plan proceeds through the following steps:

1. The firm must present the reorganization plan in court within sixty days after deciding to undergo a restructuring process;

2. The judge communicates that the recovery plan has been received and sets a deadline for creditors to present any objection;

3. Labor, secured and unsecured creditors (or, potentially, only one or two classes) vote on the reorganization plan to accept, reject or postpone it in order to demand of additional changes. All the three classes of creditors must vote to approve the plan for it to be approved; otherwise, the firm undergoes bankruptcy.

Further, the bankruptcy law establishes the following order of debt priority when a firm opts for bankruptcy or when its restructuring plan is rejected in the creditors' meeting:
- 1. Labor debt up to the limit of 150 minimum wages per worker;
- 2. Secured debt up to the limit of the collateral;
- 3. Tax debt;
- 4. Payment for debtholders with specific and general privileges;
- 5. Unsecured debt

4.3. Data Description

We use data from different sources to create our sample. First, we collected some court restructuring plans from "*Vara de Falências e Recuperação Judicial*" in São Paulo, we then obtained a wide variety of restructuring plans from Google[®] since the data are public and usually available on the websites of firms and judicial trustees. We consider information from both private and public companies' restructuring plans.

Our sample includes 120 firms for which we have information about labor, secured and unsecured funding from banks and nonbank creditors. Since 2005, there have been only a few restructuring process for public companies: therefore, the main part of our sample comprises private firms. We collected data from 3 different documents on firms' reorganization processes, and we analyzed the reorganization plan itself, the minutes from the creditors' meeting and the relation of each creditor that presents a description of the amount of money to be recovered. As table 4.1 shows, our sample is more concentrated in the industrial and noncyclical sectors and less concentrated in the basic materials sectors.

| Sector | # Firms | % |
|-----------------------|---------|---------|
| Industrial | 44 | 36.67% |
| Consumer, Noncyclical | 38 | 31.67% |
| Consumer, Cyclical | 18 | 15.00% |
| Utilities | 14 | 11.67% |
| Energy | 4 | 3.33% |
| Basic Materials | 2 | 1.67% |
| Sum | 120 | 100.00% |

 Table 4.1 - Sector representation (total number of firms in the sample)

Source: own elaboration following the Bloomberg sector's classification.

Tables 4.2 and 4.3 summarize the basic statistics for each variable collected from the documents mentioned above.

Table 4.2 – Descriptive statistics. Summary statistics of the variables collected from restructuring plans

The table reports descriptive statistics from firms' restructuring plans. The variable Labor debt (%) is the portion of the first class of firms' debt. The variable Secured debt (%) represents the portion of the second class of firms' debt. The variable Unsecured is the portion of the third class of the firms' debt. Secured_bank_loan% shows the portion of bank loans that constitute secured debt. Unsecured_bank_loan% shows the portion of bank loans that constitute unsecured debt. Labor #, Secured # and Unsecured # are the number of labor, secured and unsecured debtholders respectively. Top 10 (%) is the proportion of the debt held by the 10 debtholders with the highest amount of debt, and Top 10 (%, no banks) is the proportion of the debt held by the 10 debtholders with the highest amount of debt, excluding banks. The variable Number_of_Banks presents the number of banks operating in the list of creditors. The variable Payment_years is the period of time stated by the firms to settle their debt. The variable Firm_Age indicates the period of time from birth to the restructuring year.

| Variable NOBS Mea | surement | Mean | Std. | | |
|--|----------|-------|--------|-------|--------|
| Variable NOBS Mea | surement | Mean | Dov | | |
| | 01. | | Dev | Min | Max |
| Labor_debt% 120 | %0 | 0.033 | 0.0685 | 0 | 0.5547 |
| Secured_debt% 120 | % | 0.178 | 0.223 | 0 | 0.9081 |
| Unsecured_debt% 120 | % | 0.789 | 0.2314 | 0.085 | 1 |
| Secured_bank_loan% 114 | % | 0.361 | 0.4138 | 0 | 1 |
| Unsecured_bank_loan% 114 | % | 0.408 | 0.321 | 0 | 1 |
| Labor_debt # 112 Nu | umerical | 349.5 | 1064 | 0 | 7,278 |
| Secured_debt # 115 Nu | umerical | 2.852 | 4.3774 | 0 | 31 |
| Unsecured_debt # 115 Nu | umerical | 306.7 | 472.73 | 2 | 2,754 |
| Concentration of top 10 creditors 109 | % | 0.682 | 0.1891 | 0.173 | 0.994 |
| Concentration of top 10 creditors (no Banks) 109 | % | 0.329 | 0.2211 | 0.003 | 0.924 |
| Number_of_Banks 110 Nu | umerical | 6.51 | 3.6086 | 0 | 18 |
| Firm_Age 111 | Years | 31.33 | 23.22 | 4 | 120 |
| Payment_years 114 | Years | 11 | 4.14 | 3 | 22 |

Source: own elaboration

Approved Std. NOBS Measurement Mean Variable Dev. Min Max 0.0314 0.0423 Labor_debt% 25 Ratio 0 0.168 25 Secured_debt% Ratio 0.1637 0.2355 0 0.745 25 Ratio 0.8048 0.2432 0.139 $Unsecured_debt\%$ 1 Secured_bank_loan% 25 Ratio 0.3744 0.4233 0 1 Unsecured_bank_loan% 25 Ratio $0.3358 \quad 0.2975$ 0 0.99 25 342.45 700.61 Labor_debt # Number 0 2,509 25 Number 2 3.041 0 13 Secured_debt # Unsecured_debt # 25 Number 336.84 423.93 18 1,521 25 0.6789 **Top 10 creditor's concentration** Ratio 0.1667 0.25 1 Top 10 creditor's concentration (No 25 0.3274 0.2516 0.003 0.914 Banks) Ratio 25 origal f D . 5 00 . 1 000 2 10

Table 4.3 - Descriptive statistics. Summary statistics of the variables by reorganization outcome

| | Source: own elaboration. | The variable descri | ptions are presented | d in table 4.2 |
|--|--------------------------|---------------------|----------------------|----------------|
|--|--------------------------|---------------------|----------------------|----------------|

| Number_of_Banks | 25 | Numerical | 5.08 | 1.998 | 2 | 10 |
|--|------------|-------------------|----------|---------|-------|-------|
| Firm_Age | 25 | Years | 30.14 | 19.09 | 4 | 71 |
| Payment_years | 25 | Years | 10.02 | 3.45 | 4 | 17 |
| | Modifi | ed | | | | |
| Labor_debt% | 65 | Ratio | 0.0189 | 0.259 | 0 | 0.095 |
| Secured_debt% | 65 | Ratio | 0.1681 | 0.2093 | 0 | 0.908 |
| Unsecured_debt% | 65 | Ratio | 0.8128 | 0.2111 | 0.085 | 1 |
| Secured_bank_loan% | 61 | Ratio | 0.3377 | 0.4074 | 0 | 1 |
| Unsecured_bank_loan% | 61 | Ratio | 0.3683 | 0.2338 | 0 | 0.84 |
| Labor_debt # | 60 | Number | 476.81 | 1365.45 | 0 | 7,278 |
| Secured_debt # | 61 | Number | 3.57 | 5.318 | 0 | 31 |
| Unsecured_debt # | 61 | Number | 381.62 | 567.97 | 8 | 2,754 |
| Top 10 creditor's concentration | 56 | Ratio | 0.6752 | 0.1947 | 0.239 | 0.994 |
| Top 10 creditor's concentration (No | | | | | | |
| Banks) | 56 | Ratio | 0.349 | 0.2141 | 0.017 | 0.924 |
| Number_of_Banks | 58 | Numerical | 7.24 | 3.9 | 2 | 18 |
| Firm_Age | 64 | Years | 35.73 | 26.34 | 6 | 120 |
| Payment_years | 61 | Years | 11.32 | 4.5 | 4 | 22 |
| | Reject | ed | | | | |
| Labor_debt% | 29 | Ratio | 0.0655 | 0.1231 | 0 | 0.555 |
| Secured_debt% | 29 | Ratio | 0.214 | 0.2455 | 0 | 0.903 |
| Unsecured_debt% | 29 | Ratio | 0.7203 | 0.257 | 0.094 | 1 |
| Secured_bank_loan% | 28 | Ratio | 0.4 | 0.4307 | 0 | 1 |
| Unsecured_bank_loan% | 28 | Ratio | 0.56 | 0.447 | 0 | 1 |
| Labor_debt # | 28 | Number | 82.82 | 228.2 | 0 | 1,157 |
| Secured_debt # | 29 | Number | 2.06 | 2.658 | 0 | 11 |
| Unsecured_debt # | 29 | Number | 123.31 | 129.14 | 2 | 511 |
| Top 10 creditor's concentration | 28 | Ratio | 0.6966 | 0.2022 | 0.173 | 0.97 |
| Top 10 creditor's concentration (No | • • | | | | | |
| Banks) | 28 | Ratio | 0.2915 | 0.209 | 0.03 | 0.897 |
| Number_of_Banks | 28 | Numerical | 6.25 | 3.73 | 0 | 16 |
| Firm_Age | 26 | Years | 21.46 | 13.43 | 5 | 48 |
| Payment_years | 28 | Years | 9.37 | 3.632 | 3 | 19 |
| Source: own elaboration. The variable descri | iptions ar | e presented in ta | able 4.2 | | | |

The definitions of the variables are also provided in the notes to the tables. As shown, firms' average age (from birth to the restructuring date) is about 31 years. Regarding the number of banks, the statistics show that approximately seven banks are involved in the restructuring process per firm. The descriptive statistics also show that one firm received funding from 18 different banks (the maximum number of banks involved in the process).

4.3.1. Sample Selection Issues

The data in our sample were not provided by a quasi-experiment. Since we collected our data by searching for information provided on the websites of firms, lawyers and judge trustees, our sample may present some kind of bias. Because we have a nonrandom sample, we can only analyze the possible direction of the bias rather than completely eliminate it. One possible type of bias may be related to the region as we have a higher concentration of firms in the South and Southeast and only a few firms in the North and Northeast.

However, this distribution of firms is in line with the populations of the judicial districts in Brazil. The State of *São Paulo* has the higher number of civil courts. Further, in his analysis of judicial districts in Brazil, Ponticelli (2012) finds that the country is divided into 2,738 judicial districts, with a higher concentration of judicial districts and courts dealing with bankruptcy in Southeast and a higher concentration of companies in the South and Southeast of Brazil. The characteristics of our sample are in line with these characteristics.

While we cannot conclude that any bias related to region is completely eliminated, the concentration of reorganization cases in our data is nevertheless consistent with the concentration of reorganization cases of Brazilian companies.

There may also be some kind of bias related to the electronic collection of the data. For example, the data can be easily found on large firms' websites. Although information for such firms is public and thus available to courts, private and smaller companies might not face the same pressure to disclosure the details of their reorganization to all stakeholders.

Larger private or public companies usually display all information and archives related to reorganization on their websites. Moreover, larger firms can hire more structured law firms that do the job for them. However, the greatest number of reorganizations in Brazil involves small and private companies. In appendix O, we present the characteristics of our sample by separating firms in our sample by type. These data were collected from the websites of lawyers or judicial trustees where we collected information about the restructuring plan, the minutes of the creditors' meeting and the list of claims from creditors. In Brazil, judicial trustees are appointed by the court, but a specific lawyer may receive more complicated cases based on his reputation or knowledge about bankruptcy situations.

Fortunately, we can check the minutes of the Assembly to determine whether a lawyer represented the recovering firm or a judicial trustee was in charge of the case. With such information, we can determine whether there is a pattern related to lawyers in our sample data. Our cases are spread out among different lawyers, which reduces the possibility that a specific lawyer is driving our result. Nevertheless, there may still be the possibility that a specific lawyer has more complex or easier recovering cases.

Although we have shown the characteristics of our data to analyze the potential for bias in our data we cannot made definitive conclusions since we do not have a random sample. We are quite confident that any bias in our sample is related the concentration of cases handled by lawyers and belonging to particular regions.

4.4. Empirical Strategy of Analysis

This paper involves both a descriptive and an econometric analysis of the main characteristics of reorganization plans by type of vote. It is important to highlight that we do not intend to identify a causal relation between the variables since we are not conducting a controlled experiment provided by an exogenous shock. We provide an initial analysis of reorganization plans by type of vote, and we then conduct an econometric analysis to calculate controlled correlations between the independent variables and the likelihood that creditors initially accept the plan (i.e., without modification).

For this purpose, we divide the study into two parts: a) a descriptive analysis of the characteristics of the reorganization process and, b) a relational analysis of reorganization plans by type of vote involving econometric regressions.

4.4.1. Descriptive Analysis

This part of the paper aims to provide empirical evidence of the characteristics of the reorganization plans by separating the reorganization plans according to the Assembly results. Specifically, since plans can be approved, modified or rejected, we decided to capture the characteristics of each plan and compare them according to the possible results of the Assembly. We first provide an analysis based on the characteristics of the quorum required to vote on the reorganization plan, which indicates the portion of creditors that attended the creditors' meeting to vote on the plan and the portion of creditors that accepted the plan.

We further conduct a descriptive analysis on the proposal that debtors presented to claimholders regarding payment. This part of the analysis examines the portion of debt discounted from the original debt value, the grace period suggested by debtors to postpone the first payment and the correction form of the debt payment provided during the reorganization period.

We also perform a descriptive analysis of disparities in payment proposals among creditors. It is important to identify all cases in which the debtor presented a different payment proposal for both the same and different classes of claimholders. The last part of the analysis provides a descriptive measurement of firms' financial distress. For this purpose, we use a financial distress proxy that gives us some insight about differences between more or less complex situations of distress when creditors may be able to evaluate whether the reorganizing firms' asset are sufficient to settle the debt. In addition, we use an economic distress proxy to captures the conditions surrounding a firm, which may affect the firm's ability to generate cash and thus relate to more or less complex reorganization cases.

4.4.2. Econometric Regressions

To identify which kind of outcome one can expect for a restructuring plan, we decided to adopt a probit regression. Our model aims to determine the likelihood that a firms' restructuring plan is accepted when creditors do not demand additional changes. Therefore, our research question is as follows: What are the main determinants of reorganization plan acceptance for each class of creditors? At a first glance, we would like to evaluate the factors that affect creditors' decision about the reorganization plan. How do heterogeneous creditors behave in the decision process for reorganization plans? Does the decision to accept reorganization plans lies with banks? Does it concern specifying collateral?

Giambona, Lopes-de-Silanes, and Matta (2013) argue that because there are different classes of debt, reorganization plans are often rejected in Chapter 11 proceedings. Previous works have also stressed that the allocation of resources to different claimholders that is specified in a recovery plan is as important as the potential value that the restructuring will engender. Further, Brown (1989) argues that problems can rise in the presence of heterogeneous creditors.

Following these studies, we evaluate the likelihood of approval according to the categories of creditors. Accordingly, as explanatory variables in our regressions we adopt the ratio of each debt category to the total debt and the number of creditors.

Concerning the restructuring process, Senbet and Wang (2010) state that creditors generally prefer asset liquidation, since such a procedure facilitates their ability to receive cash. Moreover, Giambona, Lopes-de-Silanes, and Matta (2013) show that higher asset verifiability increases both the probability of Chapter 11 filings and the debt capacity of firms. In our empirical model, we examine the effect of asset disposal when a collateral asset for debt payment is specified in the reorganization plan.

It is important to highlight that we are considering only variables from the reorganization plans, the minute of the creditors' meetings and the list of creditors presented by the judicial trustee. Ultimately, we aim to determine the likelihood that a firm's reorganization plan is accepted by its claimholders during the creditors' meeting.

For this purpose, we run regressions with labor, secured and unsecured debt as the explanatory variables and we model each regression while controlling for a group of variables that each category of creditors should consider in voting on the reorganization plan.

In addition to the amount of debt from heterogeneous creditors mentioned above, we also consider the amount of secured and unsecured bank loans with claims at the creditors' meeting as a control measure. There is no consensus based on empirical evidence about the role of banks in the approval of reorganization plans. According to Gilson (1990), Brown

(1989) and James (1996), banks help reduce holdout and information problems in private restructuring. However, Helwege (1999) argues that bank debt is related to a slower debt restructuring process. Although we cannot specify the expected sign for bank debt in our empirical investigation, bank debt nevertheless seems to be necessary to include as a control variable in our regressions.

Finally, we also control for the period of time stated by the firms by which to settle their debt, the type of firm, disparities in payment proposals among creditors and modifications in corporate ownership. Since the reorganization plan is made before creditors vote, all explanatory variables are specified for the period before the acceptance, requested modification or rejection of the plan.

Our first empirical model is designed for labor creditors. As specified earlier, such creditors are the first category of creditors to receive any amount of money if a plan is rejected. According to law, this category of creditors must receive payment from debtors within a one-year period. Hence, we do not need to run a regression that controls for the period of time stated by the firm to pay its debtholders for this group of creditors. Since we include many of the same variables in subsequent equations below, we avoid repeating the definition of each variable for all the equations. Therefore, for each equation, we repeat the definition for the dependent variable and provide the definitions for the control variables that were not mentioned for previous equations.

Since the vote for approval must meet both value and number criteria, we run separate regressions for creditors' portion of debt and the number of creditors with claims. After presenting the results for each case, we run a regression with both the portion of debt and number of creditors as explanatory variables for the classes of creditors. Our first equation is specified as follows:

 $y_{t} = \beta_{0} + \beta_{1}Labor_{t-1} + \beta_{2}Type_{t-1} + \beta_{3}Asset _Disposal_{t-1} + \beta_{4}Total _Debt(ln)_{t-1} + \beta_{5}Dif _Classes_{t-1} + \beta_{6}Ownership _reorg + u_{t}$

80

(2)

 y_t = Dummy variable that equals 1 if the reorganization plan is accepted without changes and 0 if it is either accepted with modifications suggested by the creditors or rejected.

Labor = Ratio of labor debt to total debt. The variable Labor is the first class of the firm's debt.

Type = Dummy variable that equals 1 for corporations (S.A firms).

Asset_Disposal = Dummy variable that equals 1 if the firm chooses a collateral asset for debt payment in the restructuring plan.

 $Total_Debt(ln) = The variable is measured as the logarithm of the firm's total debt.$

Diff_Classes = Dummy variable that equals 1 for disparities in the payment proposals among the three classes of claimholders.

Ownership_Reorg = Dummy variable that equals 1 for changes in corporate control.

To separate the value criteria from the number criteria, we repeat equation 2 by changing the variable labor above to the number of labor creditors that a firm must pay. We further run a regression in which both the value and number criteria are considered in the same equation.

In the second equation, we are interested in the sign of the variables labor and asset disposal. It is difficult to determine how labor creditors should behave with respect to reorganization plans, since there are no observable conditions for which to control in the plan analysis, such as employment. Labor creditors are the first category of creditors to receive payment in the case of bankruptcy: therefore, they have incentives to reject the plan when creditors are perceived to have an advantage. Nevertheless, if workers believe in their firm and if they fear that they may face problems when returning to the labor market, they have incentives to approve the plan. In this equation, we expect only asset disposal to have a positive sign owing to the guarantee of cash, as noted in Senbet and Wang (2010) and Giambona, Lopes-de-Silanes, and Matta (2013).

According to Brown, James, and Mooradian (1994), evidence indicates that asset sales benefit creditors more than equityholders in cases of distress. Moreover, Asquith, Gertner, and Scharfstein (1994) show that asset sales represent an important means for firms to avoid bankruptcy.

The null hypothesis of our equations is that none of the variables mentioned below influences the acceptance of the restructuring plan. Based on previous works, we propose the following hypotheses:

Hypothesis H1: Asset disposal may influence creditors to accept the reorganization plan. Therefore, we expect to find a positive sign for asset disposal in our regressions (β >0).

Hypothesis H1 must hold for all regressions in this paper. With regard to secured creditors, we believe that our task is easier. Equation 3 is specified as follows:

 $y_{t} = \beta_{0} + \beta_{1}Secured_{t-1} + \beta_{2}SBL_{t-1} + \beta_{3}Type_{t-1} + \beta_{4}Asset _Disposal_{t-1} + \beta_{5}Total _Debt(ln)_{t-1} + \beta_{6}Dif _Classes_{t-1} + \beta_{7}Dif _Same _Class + \beta_{8}Ownership _reorg + \beta_{9}P_{t-1} + u_{t}$

(3)

 y_t = Dummy variable that equals 1 if the reorganization plan is accepted without changes and 0 if it is either accepted with modifications suggested by creditors or rejected.

Secured = Ratio of secured debt to total debt.

SBL = Variable that specifies the portion of bank loans that constitute secured debt.

Dif_Same_Class = Dummy variable that equals 1 for disparities in payment proposals within the same class of claimholders.

P = The variable Payment_years is the period of time stated by the firm to settle its debt.

For equation 3, we again separate the value criteria from the number criteria. For his purpose, we repeat equation 3 by changing the variable Secured above to the number of secured creditors that a firm must pay. We further run a regression in which both the value and number criteria are considered in the same equation.

Secured creditors own assets as collateral and receive payment after labor debtors in the case of bankruptcy. Therefore, we believe that this category of creditors also has incentives to reject the reorganization plan. According to Brouwer (2006), some countries attempt to attenuate the conflict that arises from secured creditors' right to claim their collateral by applying an automatic stay. However, such a measure may not be sufficient to convince creditors to accept the reorganization plan. In addition to the control variables included in the first equation, we added two more variables related to secured creditors' decision to accept the plan. For this kind of creditor, we believe that the period of time stated by a firm to settle its debt and the amount of secured bank loans can influence the likelihood that the restructuring plan is accepted. In addition, using equation 3, we run a regression focused on secured debt by controlling for labor debt as well as all other control variables included in equation 3.

Therefore, we specify our second hypothesis as follows:

Hypothesis H2: Secured creditors have incentives to reject the reorganization plan. Therefore, we expect to find a negative sign for the coefficient of this variable (β <0).

Finally, we analyze the same decision with respect to unsecured creditors. As these creditors are the last group of creditors to receive any value from liquidation, they have incentives to accept the reorganization plan. The incentives of this class of creditors are clearly more aligned with shareholders than those of the other classes. Junior creditors are out of the money in most cases, and the decision to continue the business (even if it is inefficient) can provide an upside for this class according to Gertner and Scharfstein (1991). Focusing on unsecured creditors, equation 4 is specified as follows:

 $y_{t} = \beta_{0} + \beta_{1}Un \sec ured_{t-1} + \beta_{2}UBL_{t-1} + \beta_{3}Type_{t-1} + \beta_{4}Asset _Disposal_{t-1} + \beta_{5}Total _Debt(ln)_{t-1} + \beta_{6}Dif _Classes_{t-1} + \beta_{7}Dif _Same_Class + \beta_{8}Ownership _reorg + \beta_{9}P_{t-1} + \upsilon$

 y_t = Dummy variable that equals 1 if the reorganization plan is accepted without changes and 0 if it is either accepted with modifications suggested by creditors or rejected.

Unsecured = Ratio of unsecured debt to total debt.

UBL = Unsecured bank loan indicates the portion of bank loans that constitute unsecured debt.

We impose the same modification in equation 4 regarding the separation of the value and number criteria specified for the previous equations. We present our third hypothesis as follows:

Hypothesis H3: Unsecured creditors have incentives to approve the reorganization plan. Therefore, we expect to find a positive sign for the coefficient of this variable (β >0).

We also run more regressions in which we use the different classes as explanatory variables in the same equation.

4.5. Empirical Results and Discussion

This section reports the empirical results from our descriptive and econometric analyses. Table 4.4 presents results regarding the quorum of creditors who voted on the plan during the creditors' general meeting. For approved plans without modifications, the results reveal that more secured creditors were present to vote on the plan than labor and unsecured creditors. However, the rate of acceptance is higher among labor creditors than among the other classes. The results for the modified plans are similar.

Furthermore, the number of no shows at the vote is higher among unsecured creditors for approved plans, yet for modified and rejected plans, the number of no shows among labor creditors is similar to that among unsecured creditors. The analysis of rejected plans is interesting. Secured creditors show the highest portion of rejections, while labor creditors rejected the plan in only 10.42% (mean) of the cases in the sample.

| | Initially approved plans – Quorum of votes | | | | | | | | |
|--|--|---|---|--|--|---|---|---|--|
| | | | | | | | | | |
| | Measurement | Smallest | 25% | 50% | 75% | Largest | Mean | Std.Dev | |
| Labor | (%) | 0 | 0.64 | 0.94 | 1 | 1 | 0.7684 | 0.3145 | |
| Secured | (%) | 0.75 | 1 | 1 | 1 | 1 | 0.971 | 0.078 | |
| Unsecured | (%) | 0.1 | 0.46 | 0.575 | 0.66 | 1 | 0.588 | 0.217 | |
| | Initially app | roved plans | – Votes i | in favor | of plan a | cceptance | | | |
| | | | Pe | ercentile | s | | | | |
| | Measurement | Smallest | 25% | 50% | 75% | Largest | Mean | Std.Dev | |
| Labor | (%) | 0.96 | 1 | 1 | 1 | 1 | 0.998 | 0.0085 | |
| Secured | (%) | 0.53 | 0.68 | 1 | 1 | 1 | 0.8548 | 0.1875 | |
| Unsecured | (%) | 0.52 | 0.63 | 0.77 | 0.95 | 1 | 0.7647 | 0.1694 | |
| | | | | | | | | | |
| Modified plans - Quorum of votes | | | | | | | | | |
| | | | Р | ercentile | s | | | | |
| | Measurement | Smallest | 25% | 50% | 75% | Largest | Mean | Std.Dev | |
| Labor | (%) | 0 | 0.51 | 0.725 | 0.97 | 1 | 0.6553 | 0.3111 | |
| Secured | (%) | 0.12 | 0.9 | 1 | 1 | 1 | 0.8954 | 0.2236 | |
| Unsecured | (%) | 0.01 | 0.535 | 0.75 | 0.855 | 1 | 0.675 | 0.26 | |
| Modified plans - Votes in favor of acceptance (modified plan) | | | | | | | | | |
| Percentiles | | | | | | | | | |
| | | | | | | | | | |
| | Measurement | Smallest | 25% | 50% | 75% | Largest | Mean | Std.Dev | |
| Labor | Measurement (%) | Smallest 0.51 | 25% 1 | 50% 1 | 75% 1 | Largest 1 | Mean 0.96 | Std.Dev 0.1047 | |
| Labor Secured | Measurement (%) (%) | Smallest 0.51 0.5 | 25% 1 0.81 | 50% 1 1 | 75% 1 1 | Largest 1 1 | Mean 0.96 0.8956 | Std.Dev 0.1047 0.1623 | |
| Labor Secured Unsecured | Measurement (%) (%) (%) (%) | Smallest 0.51 0.5 0.52 | 25% 1 0.81 0.65 | 50% 1 1 0.8 | 75% 1 1 0.91 | Largest 1 1 1 | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 | |
| Labor Secured Unsecured | Measurement (%) (%) (%) (%) | Smallest 0.51 0.5 0.52 | 25% 1 0.81 0.65 | 50% 1 1 0.8 | 75% 1 1 0.91 | Largest 1 1 1 | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 | |
| Labor Secured Unsecured | Measurement (%) (%) (%) (%) | Smallest 0.51 0.5 0.52 Rejected pla | 25% 1 0.81 0.65 ans - Qu | 50% 1 1 0.8 orum of | 75% 1 1 0.91 votes | Largest 1 1 1 | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 | |
| Labor Secured Unsecured | Measurement (%) (%) (%) (%) | Smallest 0.51 0.5 0.52 Rejected pla | 25% 1 0.81 0.65 ans - Qu Pe | 50% 1 0.8 orum of ercentile | 75% 1 0.91 votes s | Largest 1 1 1 | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 | |
| Labor Secured Unsecured | Measurement (%) (%) (%) Measurement | Smallest 0.51 0.5 0.52 Rejected pla Smallest | 25% 1 0.81 0.65 ans - Qu Po 25% | 50% 1 0.8 orum of ercentile 50% | 75% 1 0.91 votes s 75% | Largest 1 1 1 Largest | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev | |
| Labor Secured Unsecured | Measurement (%) (%) (%) (%) Measurement (%) | Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 | 25% 1 0.81 0.65 ans - Qu Pe 25% 0.16 | 50% 1 1 0.8 orum of ercentile 50% 0.57 | 75% 1 1 0.91 votes s 75% 1 | Largest 1 1 1 Largest 1 | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 | |
| Labor Secured Unsecured Labor Secured | Measurement (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) | Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 0.21 | 25% 1 0.81 0.65 ans - Qu Pe 25% 0.16 0.89 | 50% 1 1 0.8 orum of ercentile 50% 0.57 1 | 75% 1 0.91 votes <u>s</u> 75% 1 1 | Largest 1 1 1 1 Largest 1 1 | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 | |
| Labor Secured Unsecured Labor Secured Unsecured | Measurement (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) (%) | Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 0.21 0.23 | 25% 1 0.81 0.65 ans - Qu Pa 25% 0.16 0.89 0.42 | 50% 1 1 0.8 orum of prcentile 50% 0.57 1 0.53 | 75% 1 1 0.91 votes s 75% 1 1 0.84 | Largest 1 1 1 1 Largest 1 1 1 1 | Mean 0.96 0.8956 0.7846 Mean 0.5475 0.8981 0.6 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 0.2379 | |
| Labor Secured Unsecured Labor Secured Unsecured | Measurement (%) | Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 0.21 0.23 d plans - Voto | 25% 1 0.81 0.65 ans - Qu Po 25% 0.16 0.89 0.42 es in favo | 50% 1 1 0.8 orum of ercentile 50% 0.57 1 0.53 or of reje | 75% 1 1 0.91 votes s 75% 1 1 0.84 ecting th | Largest 1 1 1 Largest Largest 1 1 1 e plan | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 0.2379 | |
| Labor Secured Unsecured Labor Secured Unsecured | Measurement (%) | Smallest 0.51 0.5 0.52 Rejected plate Smallest 0 0.21 0.23 d plans - Vote | 25% 1 0.81 0.65 ans - Qu Pe 25% 0.16 0.89 0.42 es in fave Pe | 50% 1 1 0.8 orum of ercentile 50% 0.57 1 0.53 or of rejercentile | 75% 1 0.91 votes s 75% 1 1 0.84 ecting th s | Largest 1 1 1 Largest 1 1 Largest 1 1 1 1 e plan | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 0.2379 | |
| Labor Secured Unsecured Labor Secured Unsecured | Measurement (%) </td <td>Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 0.21 0.23 d plans - Vote Smallest</td> <td>25% 1 0.81 0.65 ans - Qu Pe 25% 0.16 0.89 0.42 es in fave 25%</td> <td>50% 1 1 0.8 0rum of ercentile 50% 0.57 1 0.53 0r of rej ercentile 50%</td> <td>75% 1 1 0.91 votes s 75% 1 1 0.84 ecting th s 75%</td> <td>Largest 1 1 1 1 Largest 1 1 1 Largest Largest Largest Largest</td> <td>Mean 0.96 0.8956 0.7846</td> <td>Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 0.2379 Std.Dev</td> | Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 0.21 0.23 d plans - Vote Smallest | 25% 1 0.81 0.65 ans - Qu Pe 25% 0.16 0.89 0.42 es in fave 25% | 50% 1 1 0.8 0rum of ercentile 50% 0.57 1 0.53 0r of rej ercentile 50% | 75% 1 1 0.91 votes s 75% 1 1 0.84 ecting th s 75% | Largest 1 1 1 1 Largest 1 1 1 Largest Largest Largest Largest | Mean 0.96 0.8956 0.7846 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 0.2379 Std.Dev | |
| Labor Secured Unsecured Labor Secured Unsecured Labor | Measurement (%) (%) (%) (%) (%) (%) (%) (%) Measurement (%) (%) Measurement (%) (%) Measurement (%) | Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 0.21 0.23 d plans - Voto Smallest 0 | 25% 1 0.81 0.65 ans - Qu Po 25% 0.16 0.89 0.42 es in favo 25% 0 | 50% 1 1 0.8 orum of ercentile 50% 0.57 1 0.53 or of reje ercentile 50% 0 | 75% 1 1 0.91 votes s 75% 1 1 0.84 ecting th s 75% 0 | Largest 1 1 1 Largest 1 1 1 e plan Largest 1 | Mean 0.96 0.8956 0.7846 0.7846 0.5475 0.8981 0.6 0.6 Mean 0.1042 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 0.2379 Std.Dev 0.2354 | |
| Labor Secured Unsecured Labor Secured Unsecured Labor Secured | Measurement (%) | Smallest 0.51 0.5 0.52 Rejected pla Smallest 0 0.21 0.23 d plans - Voto Smallest 0 0.02 | 25% 1 0.81 0.65 ans - Qu Po 25% 0.16 0.89 0.42 es in fave 25% 0 0.99 | 50% 1 1 0.8 0rum of ercentile 50% 0.57 1 0.53 0r of rejo ercentile 50% 0 1 | 75% 1 1 0.91 votes s 75% 1 1 0.84 ecting th s 75% 0 1 1 0.84 | Largest 1 1 1 Largest 1 1 e plan Largest 1 1 1 1 1 1 1 1 1 1 1 1 1 | Mean 0.96 0.8956 0.7846 Mean 0.5475 0.8981 0.6 Mean 0.1042 0.8984 | Std.Dev 0.1047 0.1623 0.1591 Std.Dev 0.4093 0.2371 0.2379 Std.Dev 0.2854 0.2717 | |

This table presents the percentage of quorum and outcome of the votes during the creditors' general meeting for each possible result.

Table 4.4 – Quorum and vote analysis of the reorganizations

Source: own elaboration

In fact, when the plan was initially accepted the lowest portion of labor creditors to accept the plan is 96%. Thus, labor creditors approved the plan in most of the cases, even when the other classes decided to reject it.

Table 4.5 shows the proposal of payment to claimholders according to the outcome of the vote in the Assembly. The average portion of debt discounted is higher for rejected plans, while the average grace period (13.11 months) is higher for modified plans.

Table 4.5 - Proposal of payment to claimholders

This table shows the descriptive results of all payment proposals according to the results of the Assembly. Debt discount is the portion of debt discounted from the original debt value. Grace period is the period from the plan vote to the first creditor's payment. The variable N.I indicates the portion of reorganization plans that did not presented a correction form of the debt payment.

| | | Арр | roved | | | | | |
|---------------|----------------|----------|--------|---------|-------|----------|--------|----------|
| | | | Pe | ercenti | les | | _ | |
| | Measurement | Smallest | 25% | 50% | 75% | Largest | Mean | Std. Dev |
| Debt discount | (% of Debt) | 0 | 0 | 0.2 | 0.375 | 0.6 | 0.195 | 0.2092 |
| Grace period | (Months) | 0 | 12 | 24 | 24 | 48 | 20.4 | 11.357 |
| | | Mo | dified | | | | | |
| Percentiles | | | | | | | | |
| | Measurement | Smallest | 25% | 50% | 75% | Largest | Mean | Std. Dev |
| Debt discount | (% of Debt) | 0 | 0 | 0.3 | 0.5 | 0.7 | 0.27 | 0.2516 |
| Grace period | (Months) | 0 | 9 | 12 | 24 | 60 | 15.92 | 13.11 |
| | | Rej | ected | | | | | |
| | | | Pe | ercenti | les | | | |
| | Measurement | Smallest | 25% | 50% | 75% | Largest | Mean | Std.Dev |
| Debt discount | (% of Debt) | 0 | 0 | 0.4 | 0.5 | 0.8 | 0.313 | 0.2739 |
| Grace period | (Months) | 12 | 12 | 22 | 24 | 36 | 19.23 | 7.72 |
| B. Corr | ection form of | the debt | paym | ent d | uring | the reor | ganiza | tion per |

A. Debtor's proposal to claimholders

| | Corre | ection form of the debt pay | yment |
|---------------------------------|----------------|-----------------------------|----------------|
| | Approved | Modifed | Rejected |
| Correction form | % of the total | % of the total | % of the total |
| Inflation (only) | 23.08% | 10.26% | 41.18% |
| Inflation + fixed interest rate | 3.85% | 2.56% | 0.00% |
| Fixed interest rate | 19.23% | 17.95% | 5.88% |
| Floating interest rate | 23.08% | 43.59% | 35.29% |
| N.I | 30.77% | 25.64% | 17.65% |
| TOTAL | 100.00% | 100.00% | 100.00% |

Source: own elaboration

Table 4.5, part B, also reveals that inflation indexes were used as the main strategy for correcting debt payments for rejected plans, while floating interest rates were the main strategy used in the other cases.

We also examine the different means of payment that the debtor suggested for each class of creditors in the reorganization plan. Regarding the disparities in payment proposals, table 4.6 shows that plans approved with no modifications are more homogenous among claimholders. Moreover, modified plans show the greatest disparities in payment proposals among classes, whereas rejected plans show the greatest disparities in payment proposals within the same class of creditors.

Table 4.6 – Payment disparities and descriptive measurement of distress

This table shows the disparities in payment proposals in the reorganization for the same class of creditors and for the three different classes of creditors. Disparities mean the portion of different cases for each payment specification divided by the total number of cases

| | Ар | Approved | | odified | Rejected | | |
|----------------------------|--------------------------|----------|---------------|--------------------|------------|---------------|--|
| | Same class Among classes | | Same class | Among classes | Same class | Among classes | |
| Debt payment specification | | | % of all case | es in the category | | | |
| Debt discount | 0 | 36% | 11.11% | 40.74% | 14.29% | 25% | |
| Grace period | 8% | 0 | 9.26% | 25.93% | 10.71% | 21.43% | |
| Debt payment correction | 0 | 12% | 1.85% | 16.67% | 3.57% | 3.57% | |

A - Disparities among proposals of payment

Source: own elaboration

Table 4.7 presents the descriptive statistics for financial and economic distress measures. The analysis of financial distress shows that the average debt-to-asset ratio is lower for rejected plans than the accepted and modified plans. One possible explanation for this result is that creditors in senior positions prefer to reject the plan when they are at least at the money. The results regarding sector profitability are similar regardless the outcome of the vote on the plan. For our econometric regressions, we could not adopt proxies for financial and economic distress because of the limited the number of observations, as we lost more than 60 observations in our regression controlling for the debt-to-asset ratio. Therefore, we decided to exclude the variables from our econometric regressions.

Table 4.7 – Descriptive measure of financial and economic distress

This table presents descriptive results for measures of financial and economic distress. The financial distress proxy captures the portion of debt to the total assets of a firm. The economic distress proxy captures the average EBITDA for the past 3 years divided by the total book value of all listed companies as a measure of the profitability of a given sector.

| | | Appro | ved | | | | | | |
|--------------------|---------------------------------------|-------------|----------|-------|-----------|-------|---------|-------|----------|
| | | Percentiles | | | | _ | | | |
| Proxy | Measurement | N.O | Smallest | 25% | 50% | 75% | Largest | Mean | Std. Dev |
| Financial distress | Debt-to-asset ratio | 16 | 0.3969 | 0.989 | 2.879 | 6.8 | 243.00 | 21.4 | 60.19 |
| Economic distress | Past 3 years (sector's profitability) | 25 | 0.032 | 0.05 | 0.067 | 0.081 | 0.092 | 0.066 | 0.0169 |
| | | Modif | ïed | | | | | | |
| | | Percentiles | | | | | | | |
| Proxy | Measurement | N.O | Smallest | 25% | 50% | 75% | Largest | Mean | Std. Dev |
| Financial distress | Debt-to-asset ratio | 41 | 0.21 | 0.527 | 0.9701 | 3.27 | 458.51 | 24.75 | 79.72 |
| Economic distress | Past 3 years (sector's profitability) | 66 | 0.032 | 0.066 | 0.078 | 0.088 | 0.096 | 0.073 | 0.0164 |
| | | Reject | ted | | | | | | |
| | | | | Pe | ercentile | s | | _ | |
| Proxy | Measurement | N.O | Smallest | 25% | 50% | 75% | Largest | Mean | Std. Dev |
| Financial distress | Debt-to-asset ratio | 19 | 0.14 | 0.93 | 1.799 | 4.31 | 137.22 | 11.2 | 31.03 |

29

0.032

0.05

0.078 0.083

0.095

0.069

0.018

Source: own elaboration

Past 3 years (sector's profitability)

Economic distress

As shown for our first probit, regression in table 4.8, the coefficient for the variable Asset_Disposal is positive and significant. The interpretation of this result is quite simple, since having a greater amount of collateral for debt increases the likelihood that the restructuring plan will be accepted. Claimholders vote on the plan within an environment of uncertainty: therefore, it benefits all creditors to associate an asset with collateral. This result thus seems to confirm that creditors generally prefer to liquidate a portion of the firm's assets, since such a procedure facilitates their ability to receive cash. This finding supports the first hypothesis of our study.

Table 4.8 - Probit results for labor debt by value and number

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses.

| | Plan_A | cceptance Eq | uation - Labor Decision | | |
|-----------------|------------|--------------|-------------------------|-------------|---------------|
| | Labor - Va | due criteria | J | Labor - Nui | nber criteria |
| Variables | % Labor | % Labor | Variables | #Labor | #Labor |
| Labor debt (%) | -2.369 | -2.621 | Labor debt (#) | -0.0001 | -0.00008 |
| | (2.8324) | (2.7866) | | (0.0001) | (0.0001) |
| Туре | 0.1183 | 0.1895 | Туре | 0.3207 | 0.3583 |
| | (0.4182) | (0.3868) | | (0.4245) | (0.3888) |
| Asset_Disposal | 0.40081 | 0.5253** | Asset_Disposal | 0.5058* | 0.6686** |
| - | (0.2825) | (0.2642) | | (0.2918) | (0.2748) |
| Ln_Total_Debt | 0.1271 | 0.1111 | Ln_Total_Debt | 0.1587 | 0.1289 |
| | (0.1034) | (0.0984) | | (0.1093) | (0.1023) |
| Dif_Classes | -0.4504 | -0.3048 | Dif_Classes | -0.5518* | -0.3388 |
| | (0.2851) | (0.2688) | | (0.3042) | (0.2805) |
| Ownership_reorg | 0.3142 | 0.4444 | Ownership_reorg | 0.2203 | 0.3672 |
| | (0.3111) | (0.2926) | | (0.3319) | (0.3078) |
| Constant | -2.5471 | -2.4411 | Constant | -3.0557 | -2.8112* |
| | (1.897) | (1.6106) | | (1.9057) | (1.6429) |
| Year FE? | Yes | No | Year FE? | Yes | No |
| Observations | 116 | 119 | Observations | 108 | 112 |
| Pseudo-R2 | 0.1501 | 0.1186 | Pseudo-R2 | 0.1847 | 0.1414 |

Source: own elaboration

The difference among classes is significant when year fixed effects are taken into account. However, we did not find significant coefficients for the remaining variables. Appendix P shows the results for labor debt (value and number together).

The empirical results for the third equation are presented in table 4.9. As shown, the relationship between the portion of secured credit debt and the likelihood of acceptance is significant and negative. This result is in agreement with Senbet and Wang (2010) and Giambona, Lopes-de-Silanes, and Matta (2013). As mentioned above, secured creditors seem to have incentives to liquidate a company and to get their money back. In addition to secured

debt, asset disposal and disparities in payment proposals among the classes are significant in the regression. The sign for asset disposal remains positive sign and disparities in payment proposals among classes shows a negative sign.

Table 4.9 - Probit results for secured debt by value and number

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses.

| | Plan_A | cceptance Equ | ation - Secured Decision | | |
|--------------------|-------------|---------------|--------------------------|--------------------|---------------|
| | Secured - V | alue criteria | | Secured - Nu | mber criteria |
| Variables | Secured | unde ernternu | Variables | <u>becureu</u> itu | |
| Secured debt (%) | -1.3496* | -1.0951* | Secured debt (#) | -0.1283 | -0.1888 |
| | (0.7727) | (0.6735) | | (0.3586) | (0.3101) |
| SBL | 0.2431 | 0.0041 | SBL | 0.05429 | -0.1603 |
| | (0.3965) | (0.355) | | (0.3753) | (0.3361) |
| Туре | 0.3001 | 0.4004 | Туре | 0.1439 | 0.2929 |
| | (0.4435) | (0.4136) | | (0.434) | (0.4086) |
| Asset_Disposal | 0.6565** | 0.7436** | Asset_Disposal | 0.5617* | 0.6626** |
| - | (0.3288) | (0.3053) | - | (0.3224) | (0.2999) |
| Ln_Total_Debt | 0.1801 | 0.1511 | Ln_Total_Debt | 0.2006* | 0.1695 |
| | (0.1097) | (0.1009) | | (0.1125) | (0.1057) |
| Dif_Classes | -0.5838* | -0.3606 | Dif_Classes | -0.6425** | -0.3984 |
| | (0.317) | (0.2853) | | (0.3107) | (0.2814) |
| Dif_Same_Class | -0.402 | -0.379 | Dif_Same_Class | -0.4011 | -0.3519 |
| | (0.35) | (0.3359) | | (0.3457) | (0.3333) |
| Ownership_reorg | 0.171 | 0.3153 | Ownership_reorg | 0.1032 | 0.2885 |
| | (0.3549) | (0.3233) | 1 - 0 | (0.35) | (0.3211) |
| Payment_time_years | -0.2336 | -0.2582 | Payment_time_years | -0.1927 | -0.2324 |
| | (0.3573) | (0.3356) | | (0.3529) | (0.0332) |
| Constant | -3.2211 | -2.686 | Constant | -3.4985* | -3.0211* |
| | (2.0196) | (1.6068) | | (1.865) | (1.664) |
| Year FE? | Yes | No | Year FE? | Yes | No |
| Observations | 105 | 108 | Observations | 105 | 108 |
| Pseudo-R2 | 0.1933 | 0.1547 | Pseudo-R2 | 0.1721 | 0.1387 |

Source: own elaboration

Regarding payment_years, one could expect a negative sign in the regression because it represents the period of time stated by the firms to settle their debt: therefore, a shorter period is better for claimholders. However, the coefficient is not statistically significant. In addition, the coefficient of the variable secured bank loan is not statistically significant. As explained earlier, this variable could show either a positive or a negative sign. Appendix Q shows the results for secured debt (value and number together).

Table 4.10 presents the same analysis for equation 4 where we focus on the role of unsecured creditors. As shown, the variable unsecured, measured as a portion of unsecured debt to total debt, is positively related to the likelihood that the reorganization plan is accepted without modifications. This result supports the third hypothesis of this paper. One can also see that the coefficient for the number of unsecured creditors has a negative sign.

Increasing the number of creditors involved in the vote on a reorganization plan can engender more coordination problems, and our results support such a statement. As explained earlier, unsecured creditors have incentives to approve the restructuring plan, since they receive payment after other creditors. The coefficient for the variable asset disposal remains positive and significant in table 4.10. Further, the coefficient for the difference among classes remains significant in the same direction, and the variable total debt is also significantly and positively related to the likelihood of acceptance.

Since higher levels of debt distance creditors from at-the-money positions in the case of liquidation, we believe that the direction of the sign is accurate.

The coefficient for the portion of unsecured bank debt has a negative and significant sign in our regressions. One possible explanation for this result is that the coordination problem among creditors is exacerbated when the portion of debt to be recovered by banks in junior classes is also higher. Moreover, in some cases the same bank had senior and junior claims, and such a situation may attenuates out-of-money positions in the case of liquidations: therefore, such creditors may have higher incentives to reject the plan. The remaining tables report the same result when additional control variables are taken into account. The variable asset disposal remains positive and significant in these tables.

Table 4.10 – Probit results for unsecured debt by value and number

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses.

| | Plan_A | cceptance Equat | ion - Unsecured Decision | | |
|--------------------|-------------|-----------------|--------------------------|----------------|----------------|
| | Unsecured - | Value criteria | | Unsecured - Nu | umber criteria |
| Variables | | | Variables | | |
| Unsecured debt (%) | 1.6466** | 1.3930** | Unsecured debt (#) | -0.0014*** | -0.0010** |
| | (0.8181) | (0.6828) | | (0.0005) | (0.0008) |
| UBL | -1.1455** | -1.1278** | UBL | -1.1320** | -1.1110** |
| | (0.539) | (0.5224) | | (0.4786) | (0.4666) |
| Туре | 0.5091 | 0.5247 | Туре | 0.5031 | 0.576 |
| | (0.4631) | (0.4315) | | (0.4945) | (0.4513) |
| Asset_Disposal | 0.6912** | 0.8114*** | Asset_Disposal | 0.6951** | 0.8064** |
| - | (0.3339) | (0.3114) | - | (0.3451) | (0.3162) |
| Ln_Total_Debt | 0.1067 | 0.08633 | Ln_Total_Debt | 0.3853** | 0.2627** |
| | (0.1149) | (0.1056) | | (0.1517) | (0.1272) |
| Dif_Classes | -0.5758* | -0.4173 | Dif_Classes | -1.0367** | -0.6482** |
| | (0.3175) | (0.2924) | | (0.3601) | (0.3015) |
| Dif_Same_Class | -0.3514 | -0.3057 | Dif_Same_Class | -0.4973 | -0.2857 |
| | (0.3549) | (0.3408) | | (0.3773) | (0.341) |
| Ownership_reorg | 0.2836 | 0.3593 | Ownership_reorg | 0.4563 | 0.2763 |
| | (0.3668) | (0.3354) | | (0.3794) | (0.3438) |
| Payment_time_years | -0.0155 | -0.2066 | Payment_time_years | -0.0116 | -0.0217 |
| | (0.03658) | (0.3444) | | (0.03721) | (0.0344) |
| Constant | -2.9885 | -2.5506 | Constant | -6.9084*** | -3.9847** |
| | (2.0642) | (1.759) | | (2.6734) | (2.023) |
| Year FE? | Yes | No | Year FE? | Yes | No |
| Observations | 105 | 108 | Observations | 105 | 108 |
| Pseudo-R2 | 0.2359 | 0.1986 | Pseudo-R2 | 0.2784 | 0.225 |

Source: own elaboration

4.6. Concluding Remarks

In this paper, we study the likelihood of acceptance of reorganization plans based on a sample of 120 Brazilian firms for the period from 2005 to 2014. Restructuring seems to provide a helpful alternative for companies in poor financial situations when they could preserve their organizational values and allow financially distressed firms to seek growth opportunities for investment after an episode of failure. To our knowledge, this is the first paper to evaluate the main drivers of the approval of reorganization plans during the creditors' meeting.

Some important results are notable in this paper. First, we show that asset disposal facilitates the approval of reorganization plans as collateral is an important determinant of recovery plan acceptance. Indeed, collateral helps reduce creditor's loss expectations during the set of challenges that a firm undergoing restructuring is facing.

Second, we confirm that secured debt creditors have lower incentives to accept reorganization plans. Since these creditors have a specific amount in collateral, they may prefer to liquidate the company rather than wait for its recovery. Third, a higher portion of unsecured creditors seems to be related to higher likelihood of acceptance. Since these creditors are more similar to equityholders and are usually out of the money, they may have incentives to approve the plan even if doing so is not best decision for creditors as a whole.

This study also has some limitations. Unfortunately, we do not examine causality in this paper. However, since our purpose in this study was to show the characteristics of reorganization plans by the type of vote, our econometric results merely corroborate our descriptive analysis by controlling for certain variables show only the relation. In addition, our sample may suffer from selection bias even though we showed possible direction of such bias.

Future research can be conducted to analyze whether firms whose reorganization plan was approved achieved success through recovery. We could not analyze this issue in this paper because most of the firms are still in recovery.

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APPENDIX A - Debt composition of Bical

Panel A – Concentration of funding

| | | Debt characteristics | | | | |
|-----------|------|---|--------|--|--|--|
| Region | Туре | Concentration of top 10 creditors Concentration of top 10 creditors (no Banks | | | | |
| Southeast | LTDA | 83.80% | 15.80% | | | |

Panel B – Classes of creditors

| Bical – creditors | | | | |
|------------------------|-----|---------------|--|--|
| Quantity Value of debt | | | | |
| Labor | 1 | 41,982.95 | | |
| Unsecured | 235 | 16,319,384.90 | | |
| Total | 236 | 16,361,367.85 | | |

| Unsecured creditors | | | | | |
|---------------------|------------------------|---------------|--|--|--|
| | Quantity Value of debt | | | | |
| Banks | 5 | 11,475,371.42 | | | |
| No Banks | 230 | 4,844,013.48 | | | |
| Total | 16,319,384.90 | | | | |

Panel C - Quorum and vote percentiles

| | Plai | n Vote |
|--|--------------------------------------|--------------------------------------|
| Number of meetings to vote on the plan | Labor Quorum (%) | Unsecured Quorum (%) |
| 2 | 100% | 56.21% |
| Delay | Labor class in favor of the plan (%) | Unsecured class in favor of the plan |
| 7 days | 100% | 53.28% |

Source: Own Elaboration. Data collected from the list of creditors and the minutes of the Assembly. Delay means the time in days from the first to the second meeting.

APPENDIX B – NTL-M8 composition of Debt

Panel A - Concentration of funding

| | | Debt characteristics | | | |
|-----------|------|-----------------------------------|--|--|--|
| Region | Туре | Concentration of top 10 creditors | Concentration of top 10 creditors (no Banks) | | |
| Southeast | LTDA | 61.3% | 42.3% | | |

Panel B - Classes of creditors

| | | MD8 | NTL | Total |
|-----------|----------|---------------|---------------|---------------|
| | Quantity | Value of debt | Value of debt | |
| Labor | 162 | 80,630.89 | 522,490.98 | 603,121.87 |
| Secured | 1 | 3,000,000.00 | 7,284,961.01 | 10,284,961.01 |
| Unsecured | 231 | 1,334,802.61 | 21,752,806.75 | 23,087,609.36 |
| Total | 394 | 4,415,433.50 | 29,560,258.74 | 33,975,692.24 |
| | | | | |
| | Banke | | | |

| | Banks | |
|-----------------|----------|---------------|
| | Quantity | Value of debt |
| Secured Banks | 1 | 4,904,844.39 |
| Unsecured Banks | 4 | 2,273,794.13 |
| Total | 5 | 7,178,638.52 |

Panel C - Quorum and vote percentiles

| | Plan Vote | | | |
|--|--------------------------------------|--------------------------------------|--|--|
| Number of meetings to vote on the plan | Labor Quorum (%) | Unsecured Quorum (%) | | |
| 2 | 0.331 | 0.232 | | |
| Delay | Labor class in favor of the plan (%) | Unsecured class in favor of the plan | | |
| 7 days | 100% | 78.17% | | |
| | Secured Quorum (%) | Secured class in favor of the plan | | |
| | 100% | 0 | | |

Source: Own Elaboration. Data collected from the list of creditors and the minutes of the Assembly. Delay means the time in days from the first to the second meeting.

APPENDIX C – The X's group composition of debt

Panel A - Concentration of funding

| | | Debt characteristics | | | |
|-----------|------|-----------------------------------|--|--|--|
| Region | Туре | Concentration of top 10 creditors | Concentration of top 10 creditors (no Banks) | | |
| Southeast | S.A | 84% | 76.10% | | |

Panel B - Classes of creditors

| The X's group – creditors (consolidated) | | | | |
|---|-----|------------------|--|--|
| Quantity Value of debt | | | | |
| Unsecured creditors (value in US dollars) | 67 | 2,230,394,000.00 | | |
| Unsecured creditors (value of votes in Reais) | 201 | 5,835,110,986.00 | | |
| Unsecured bank creditors (value of votes in US dollars) | 1 | 102,600,000.00 | | |
| Unsecured bank creditors (value of votes in Reais) | 4 | 1,768,834,779.15 | | |

Panel C - Quorum and vote percentiles

| | Plan Vote | | |
|--|--------------------------------------|--|--|
| Number of meetings to vote on the plan | Unsecured Quorum (%) | | |
| 1 | 62.79% | | |
| Delay | Unsecured class in favor of the plan | | |
| 0 | 81.59% | | |

Source: Own Elaboration. Data collected from the list of creditors and the minutes of the Assembly. Delay means the time in days from the first to the second meeting.

| Statistic | N | Mean | St. Dev. | Min | Max |
|----------------|-----|----------------|----------------|-------|------------------|
| N meetings | 119 | 1.90 | 0.85 | 0 | 4 |
| debt to assets | 76 | 20.66 | 66.16 | 0.00 | 458.52 |
| round1 S | 109 | 0.86 | 0.27 | 0.00 | 1.00 |
| round2 S | 70 | 0.91 | 0.22 | 0.00 | 1.00 |
| round2_U | 69 | 0.57 | 0.26 | 0.03 | 1.00 |
| round3_S | 25 | 0.89 | 0.29 | 0.00 | 1.00 |
| round3_U | 25 | 0.65 | 0.24 | 0.10 | 1.00 |
| round4_L | 4 | 0.45 | 0.50 | 0.00 | 1.00 |
| round4_S | 4 | 1.00 | 0.00 | 1 | 1 |
| round4_U | 4 | 0.76 | 0.16 | 0.63 | 0.99 |
| T_suspension | 118 | 4.45 | 17.92 | 0 | 120 |
| Qtd_Labor | 111 | 342.25 | 1,066.03 | 0 | 7,278 |
| Qtd_Security | 114 | 2.83 | 4.39 | 0 | 31 |
| Qtd_Unsecurity | 114 | 306.29 | 474.80 | 2 | 2,754 |
| Qtd_Total | 117 | 625.90 | 1,360.65 | 0 | 9,906 |
| DELAY | 119 | 19.47 | 27.77 | 0 | 129 |
| X10_banks | 110 | 0.69 | 0.19 | 0.17 | 1.00 |
| X10_no_banks | 110 | 0.34 | 0.23 | 0.003 | 1.00 |
| Reorg_year | 119 | 2,010.71 | 2.14 | 2,005 | 2,014 |
| Labor_I | 119 | 2,771,084.00 | 11,377,512.00 | 0.00 | 108,545,963.00 |
| Secured_II | 119 | 18,420,805.00 | 47,403,693.00 | 0.00 | 286,942,841.00 |
| Unsecured_III | 119 | 139,681,989.00 | 542,888,708.00 | 0.00 | 5,047,800,816.00 |
| N_banks | 109 | 6.49 | 3.61 | 0 | 18 |
| trade_credit | 114 | 81,999,519.00 | 322,983,212.00 | 0.00 | 3,278,966,037.00 |
| bank_loan | 119 | 67,489,485.00 | 272,337,024.00 | 0.00 | 2,262,094,199.00 |
| Birth | 111 | 1,979.36 | 23.29 | 1,892 | 2,008 |
| Age | 111 | 31.32 | 23.23 | 4 | 120 |
| sector_rent | 119 | 0.07 | 0.03 | 0.01 | 0.12 |
| sector_rent3y | 119 | 0.07 | 0.02 | 0.03 | 0.10 |
| Total | 119 | 160,873,879.00 | 557,276,467.00 | 0.00 | 5,047,800,816.00 |
| Max | 119 | 143,089,142.00 | 542,516,946.00 | 0.00 | 5,047,800,816.00 |
| Conc | 118 | 0.83 | 0.16 | 0.44 | 1.00 |
| bank_loan_p | 118 | 0.41 | 0.25 | 0.00 | 0.99 |

APPENDIX D - Summary of covarities

Source: The authors' delineation; the variables descriptions are presented in table 3.1

| Characteristics by sector | | | | | | |
|------------------------------|------------------------|----------|--------------|--------|------------|-----------|
| Bloomberg Sector: | Basic Materials | Cyclical | Non-cyclical | Energy | Industrial | Utilities |
| Delay | 35 | 22 | 18 | 50 | 19 | 11 |
| NOBS | 2 | 17 | 38 | 4 | 44 | 14 |
| % | 2% | 14% | 32% | 3% | 37% | 12% |
| # Meetings | 2.5 | 2.1 | 1.7 | 2.5 | 1.9 | 2.0 |
| # Banks | 5.5 | 4.5 | 6.4 | 9.5 | 5.9 | 5.7 |
| Assets (M) | 2339 | 72 | 47 | 1423 | 59 | 5 |
| Age | 10 | 49 | 32 | 28 | 28 | 22 |
| Debt/Assets | 1 | 10 | 8 | 1 | 22 | 63 |
| Labor Debt (%) | 2% | 2% | 2% | 2% | 5% | 4% |
| Sec Debt (%) | 19% | 10% | 23% | 5% | 13% | 27% |
| Unsec Debt (%) | 79% | 87% | 72% | 93% | 82% | 69% |
| Labor # | 20 | 477 | 662 | 11 | 129 | 91 |
| Sec # | 2 | 2 | 5 | 2 | 2 | 3 |
| Unsec # | 54 | 181 | 589 | 252 | 169 | 157 |
| Top 10 (%) | 78% | 74% | 67% | 73% | 68% | 65% |
| Top 10 (%, no banks) | 62% | 37% | 36% | 25% | 32% | 27% |
| Characteristics by geographi | c region | | | | | |
| Region: | Center West | North | Northeast | South | Southeast | |
| Delay | 23 | 55 | 0 | 19 | 19 | |
| NOBS | 21 | 1 | 2 | 36 | 59 | |
| % | 18% | 1% | 2% | 30% | 50% | |
| # Meetings | 2.3 | 3.0 | 0.5 | 1.9 | 1.8 | |
| # Banks | 5.5 | 18.0 | 2.0 | 5.3 | 6.4 | |
| Assets (M) | 6 | 3201 | 0 | 34 | 198 | |
| Age | 21 | 50 | 42 | 39 | 30 | |
| Debt/Assets | 61 | 1 | Missing | 16 | 12 | |
| Labor Debt (%) | 2% | 5% | 5% | 6% | 2% | |
| Sec Debt (%) | 23% | 9% | 27% | 12% | 19% | |
| Unsec Debt (%) | 75% | 87% | 68% | 80% | 79% | |
| Labor # | 374 | 4 | 3728 | 263 | 259 | |
| Sec # | 3 | 2 | 4 | 2 | 3 | |
| Unsec # | 236 | 259 | 1381 | 175 | 371 | |
| Top 10 (%) | 70% | 55% | 70% | 63% | 71% | |
| Top 10 (%, no banks) | 34% | 12% | 55% | 31% | 35% | |

APPENDIX E - Summary statistics (sectors and regions)

Source: own elaboration. Variables are defined in table 2. We divided the sample based on the delay (first part), and the Bloomberg sector (second part).



APPENDIX F – Median participation by class and round.

Source: own elaboration



APPENDIX G – Median delay between meetings

Source: own elaboration
APPENDIX H - Delay regression estimated in the subsamples divided by the cause of the delay

The symbols ***, ** and * denote significance at the 1% level, 5% level and 10% level, respectively. Class concentration is the maximum debt (as a proportion of the total debt) held by a single class of debtholders. Con. Top 10 is the concentration of the proportion of debt held by the debtholders with the highest amount of debt. Delay is the time interval (in days) between the first meeting and the conclusion of the reorganization. Subsamples are defined in terms of the cause of the delay. Robust standard errors are shown in parentheses.

| | Dependent Variable: Delay (Days) | | | | | | |
|-------------------------|----------------------------------|------------|--------------|-------------|--|--|--|
| | Cause of the Delay: | | | | | | |
| | Group | Demand | Quo | orum | | | |
| | (1) | (2) | (3) | (4) | | | |
| Class Concentration | -67.024** | -72.740*** | 16.764 | 30.531 | | | |
| | (25.759) | (26.695) | (16.673) | (18.444) | | | |
| Conc. Top 10 | 26.626 | 37.794 | 8.239 | 2.207 | | | |
| - | (22.884) | (23.407) | (15.292) | (16.651) | | | |
| # of Banks | 1.378 | 1.323 | 0.210 | 0.221 | | | |
| | (1.124) | (1.094) | (1.026) | (1.315) | | | |
| # of Labor Debtholders | 0.0004 | 0.001 | -0.005^{*} | -0.004 | | | |
| | (0.005) | (0.005) | (0.003) | (0.003) | | | |
| # of Sec. Debtholders | -0.236 | 0.349 | 0.872 | 1.612^{*} | | | |
| | (0.977) | (1.020) | (0.762) | (0.906) | | | |
| # of Unsec. Debtholders | -0.014 | -0.021** | 0.023^{*} | 0.010 | | | |
| | (0.010) | (0.011) | (0.013) | (0.015) | | | |
| | | | | | | | |
| Year FE? | No | Yes | No | Yes | | | |
| Observations | 64 | 64 | 39 | 39 | | | |
| \mathbb{R}^2 | 0.168 | 0.381 | 0.216 | 0.409 | | | |

APPENDIX I - Delay probit estimated in the subsamples divided by the cause of the delay

The symbols ***, ** and * denote significance at the 1% level, 5% level and 10% level, respectively. Class concentration is the maximum debt (as a proportion of the total debt) held by a single class of debtholders. Con. Top 10 is the concentration of the proportion of debt held by the debtholders with the highest amount of debt. Delay is the time interval (in days) between the first meeting and the conclusion of the reorganization. Subsamples are defined in terms of cause of the delay. High delay is defined as a variable taking the value of one when the delay is above the median and zero otherwise.

| | Dependent | pendent Variable: Probability of High Delay | | | | | | |
|-------------------------|-------------|---|-------------|----------|--|--|--|--|
| - | | Cause of t | he Delay | 7 | | | | |
| | Group | Demand | Que | orum | | | | |
| | (1) | (2) | (3) | (4) | | | | |
| Class Concentration | -2.929** | -1.061*** | -1.145 | 0.128 | | | | |
| | (1.339) | (0.392) | (1.910) | (0.439) | | | | |
| Conc. Top 10 | 1.432 | 0.676^{*} | 0.491 | 0.122 | | | | |
| - | (1.047) | (0.347) | (2.112) | (0.400) | | | | |
| # of Banks | 0.095^{*} | 0.027^{*} | 0.211* | 0.038 | | | | |
| | (0.056) | (0.016) | (0.116) | (0.028) | | | | |
| # of Labor Debtholders | -0.0002 | -0.00002 | -0.018* | -0.0001 | | | | |
| | (0.0003) | (0.0001) | (0.010) | (0.0001) | | | | |
| # of Sec. Debtholders | -0.079 | -0.004 | -0.050 | 0.009 | | | | |
| | (0.095) | (0.015) | (0.080) | (0.020) | | | | |
| # of Unsec. Debtholders | -0.0003 | -0.0002 | 0.007^{*} | 0.0003 | | | | |
| | (0.0004) | (0.0001) | (0.004) | (0.0003) | | | | |
| | | | | | | | | |
| Year FE? | No | Yes | No | Yes | | | | |
| Observations | 64 | 64 | 39 | 39 | | | | |
| Log Likelihood | -37.872 | -64.024 | -13.702 | -41.575 | | | | |
| Akaike Inf. Crit. | 89.745 | 146.048 | 41.405 | 101.149 | | | | |
| Bayesian Inf. Crit. | | 165.478 | | 116.121 | | | | |

| | Dependent Variable: Participation of Each Class in Each Round | | | | | | | | |
|--------------------------------|---|--------------------------------|----------------------------------|---------------------------------|---------------------------------|--------------------------------|------------------|----------------------|-------------------|
| | R1 Lab. (1) | R2 Lab. (2) | R3 Lab. (3) | R1 Sec. (4) | R2 Sec. (5) | R3 Sec. (6) | R1 Uns. (7) | R2 Uns. (8) | R3 Uns. (9) |
| Class Concentration | 0.505* | 0.317 | 0.530 | 0.447** | 0.352* | 0.274 | 0.367** | 0.286 | 0.600* |
| Conc. Top 10 | 0.403 | (0.329) 0.614 ^{**} | (0.400) 1.410 ^{****} | 0.109 | 0.078 | -0.093 | 0.048 | 0.072 | 0.283 |
| # of Banks | 0.009 | 0.026 | 0.034* | -0.002 | -0.010 | -0.006 | 0.001 | 0.007 | 0.024* |
| # of Labor Debtholders | -0.00002 (0.0001) | -0.0001 | -0.001 ^{**} (0.0002) | (0.009) 0.00002 (0.00003) | (0.009) 0.00002 (0.00003) | (0.020) 0.00001 (0.0003) | -0.00003 | -0.0001 (0.00004) | 0.0003 |
| # of Sec. Debtholders | -0.004 (0.012) | 0.0005 (0.017) | 0.054 (0.033) | -0.010 (0.007) | -0.010 (0.010) | -0.053 (0.036) | 0.005 (0.007) | 0.007 (0.012) | -0.016 (0.024) |
| # of Unsec. Debtholders | 0.0002 | 0.00003 | 0.0001 | 0.0001 | 0.00001 | 0.0003 | 0.0001 | 0.00001 | 0.0001 (0.0002) |
| Constant | -0.233 (0.321) | -0.212 (0.345) | -0.945 ^{**} (0.403) | 0.419 ^{**} (0.205) | 0.641 ^{***} (0.201) | 0.846 (0.485) | 0.113 (0.194) | 0.202 (0.238) | -0.203 (0.320) |
| Observations R ² | 91 0.097 | 61 0.176 | 21 0.675 | 93 0.119 | 63 0.148 | 22 0.204 | 91 0.080 | 62 0.086 | 22 0.469 |

APPENDIX J - Regression of participation on the covariates

The symbols ***, ** and * denote significance at the 1% level, 5% level and 10% level, respectively. The dependent variable is the participation (%) of each class in each round. Robust standard errors are shown in parentheses.

APPENDIX K – Characteristics of delays segregated by quartiles

This table reports the characteristics of all no quorum delays segregated by quartiles. Panel A presents the average delay in days for each quartile. Claim concentration reports the concentration of money held by the top 10 creditors considering both cases with banks and no banks. The same creditor in two classes is the percentage of cases in which the same claimholder voted in both secure and unsecure classes. The variable approved plans reports the percentage of plans approved in each quartile segregation.

Panel B reports the percentage of modifications for different payment proposals according to the delays. Debt discount is the portion of debt discounted from the original debt value. Grace period is the period from the plan vote to the first creditor's payment. Interest rate reports the correction form of debt payment. The payback period is the period of time stated by the firms to settle their debt. Divestment is an offer of asset sale. Claims exchange shows the number of cases that creditors did not agree with the firm regarding the value of debt to be paid and requested certain changes during the general meeting.

| Panel A | _ | Claim Concent | ration Average | _ | | |
|---------------|---------------|-------------------|---------------------|------------------------------|----------------|-----------------|
| Delays | Average_Delay | Considering Banks | No Banks | Same Creditor in Two Classes | _ | |
| | | Top 10 Creditors | Top 10 Creditors | | | |
| Quartiles | Days | (%) | (%) | (% of Cases) | Approved Plans | s (%) |
| >75% | 100.67 | 72 | 31 | 43 | 75 | |
| >50% and <75% | 57 | 67 | 24 | 55 | 77 | |
| >25% and <50% | 38.63 | 67 | 33 | 54 | 72 | |
| <25% | 16.7 | 69 | 16 | 50 | 70 | |
| | | | | | | |
| Panel B | _ | | | | | |
| Delays | | | | | | |
| Quartiles | | | Proposal of Payment | to Claimholders (% of Cases) | | |
| | Debt Discount | Grace Period | Interest Rate | Payback Period | Divestment | Claims exchange |
| >75% | 25 | 0 | 25 | 8.33 | 33.33 | 33.33 |
| >50% and <75% | 22.22 | 33.33 | 44.44 | 55.56 | 33.33 | 22.22 |
| >25% and <50% | 9.09 | 18.18 | 18.18 | 27.27 | 18.18 | 0 |
| <25% | 10 | 0 | 40 | 20 | 0 | 10 |
| | | | | | | |

APPENDIX L - Characteristics and consequences of delays

This table reports the justifications for the delays by segregating the analysis by quartiles.

Main Characteristics of Delaying the Vote of the Plan

Delay_Quartile >75%

a) There were rounds of discussion to determine the assets that should be sold to generate cash during the reorganization;

b) The company had to obtain secure creditors' permission to sell assets that were used as collateral before the reorganization;

c) Certain banks requested changes of claims to vote the reorganization plan and indicated that the amount of money specified by the company was incorrect;

d) Debt discounts decreased and interest rates increased when the discussion focused on the proposal of payments to claimholders.

Delay_Quartile >50% and <75%

a) There were rounds of discussion to determine the assets that should be sold to generate cash during the reorganization;

b) The company needed to obtain secure creditors' permission to sell assets that were used as collateral before the reorganization;

c) The firm requested time to prepare several modifications in the reorganization plan, with the modifications related to the cash flow projections;

d) Issues addressing the payment proposal corrections were presented, and grace and payback periods were decreased and interest rates were increased.

Delay_Quartile >25% and <50%

a) The firm started the general meeting by requesting time to prepare modifications that were in accordance with the creditors' demands;

b) Creditors requested time after receiving an additional proposal during the meeting;

c) Creditors requested modifications in the payment proposals; however, a higher portion of firms did not accept them, and the plan was rejected.

Delay_Quartile < 25%

a) Cases have shown changes in the interest rate, and the main modifications were related to inflation and fixed interest rate specifications, with interest rates increasing;

b) The firm presented different payment proposals for creditors in the same class; after negotiation, the plan was rejected.



APPENDIX M - Number of bankruptcy and restructuring cases after Law 11,101/05

Source: Own elaboration. Data collected from Serasa[®].

APPENDIX N - Distribution of debt

SBL means Secured Bank Loan and STC means Secured Trade Credit. UBL means Unsecured bank loan and UTC means Unsecured trade credit. Source: Own elaboration



C. Kind of debt

D. Bank loan (BL) and trade Credit (TC) to total debt



APPENDIX O - **Distribution of the sample per year and per type**



A. Portion of firms in the sample per year

B. Portion of firms in the sample per type



APPENDIX P - Probit results for labor debt (value and number together)

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses.

| Plan Acceptance Equation - Labor Decision | | | | | | |
|---|-----------|-----------------|--|--|--|--|
| | | | | | | |
| Variables 07 and # | | | | | | |
| | <u> </u> | 110 # 2 2078 | | | | |
| Labor debt (%) | (3.023) | (3.0049) | | | | |
| Labor debt (#) | -00011 | -0.0004 | | | | |
| | (0.00013) | (0.0001) | | | | |
| Туре | 0.4516 | 0.5273 | | | | |
| | (0.2953) | (0.4167) | | | | |
| Asset_Disposal | 0.4674 | 0.5253** | | | | |
| - | (0.2953) | (0.2642) | | | | |
| Ln_Total_Debt | 0.1182 | 0.0833 | | | | |
| | (0.1183) | (0.1103) | | | | |
| Dif_Classes | -0.5173* | -0.3218 | | | | |
| | (0.3078) | (0.2849) | | | | |
| Ownership reorg | 0.2927 | 0.4297 | | | | |
| 1- 8 | (0.3452) | (0.3179) | | | | |
| Constant | -2.2241 | -1.998 | | | | |
| | (2.1135) | (1.7945) | | | | |
| Year FE? | Yes | No | | | | |
| Observations | 108 | 112 | | | | |
| Pseudo-R2 | 0.1904 | 0.1506 | | | | |

APPENDIX Q - Probit results for secured debt

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses .

| Soured Value on | d number eriter | io | | |
|--------------------|-----------------|----------|--|--|
| | | | | |
| variables | 70 and # | | | |
| Secured debt (%) | -1.6489* | -1.2868 | | |
| | (0.9109) | (0.8255) | | |
| Secured debt (#) | 0.2671 | 0.0153 | | |
| | (0.421) | (0.0377) | | |
| SBL | 0.2911 | 0.0245 | | |
| ~ | (0.4044) | (0.3587) | | |
| Type | 0 3615 | 0.4368 | | |
| Турс | (0.4563) | (0.4230) | | |
| | (0.4505) | (0.4237) | | |
| Asset_Disposal | 0.6389* | 0.7346** | | |
| | (0.3306) | (0.3062) | | |
| Ln Total Debt | 0.1543 | 0.1347 | | |
| | (0.1167) | (0.1085) | | |
| Dif Classes | -0.5834* | -0.3559 | | |
| _ | (0.3164) | (0.2853) | | |
| Dif Same Class | -0.3957 | -0.3741 | | |
| | (0.3509) | (0.3365) | | |
| Ownership reorg | 0.1657 | 0.3228 | | |
| 1 - 0 | (0.3552) | (0.3238) | | |
| Payment_time_years | -0.0212 | -0.02441 | | |
| · | (0.036) | (0.338) | | |
| Constant | -2.7797 | -2.449 | | |
| | (1.9251) | (1.7047) | | |
| Year FE? | Yes | No | | |
| Observations | 105 | 108 | | |
| Pseudo-R2 | 0.1962 | 0.1558 | | |

APPENDIX R - Probit results for unsecured debt

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses

| | Unsecured - Value and number criteria | | | |
|--------------------|--|------------|--|--|
| Variables | | | | |
| Unsecured debt (%) | 1.7764** | 1.5624** | | |
| | (0.8433) | (0.7017) | | |
| Unsecured debt (#) | -0.0015*** | -0.0011*** | | |
| | (0.0005) | (0.00044) | | |
| UBL | -1.2891*** | -1.2354** | | |
| | (0.5548) | (0.5386) | | |
| Туре | 0.7974 | 0.8046 | | |
| | (0.5167) | (0.4732) | | |
| Asset_Disposal | 0.8123** | 0.9548*** | | |
| | (0.3591) | (0.3318) | | |
| Ln_Total_Debt | 0.3729** | 0.2716** | | |
| | (0.1601) | (0.4733) | | |
| Dif Classes | -0.9174** | -0.5668* | | |
| | (0.3746) | (0.3132) | | |
| Dif Same Class | -0.6023 | -0.4493 | | |
| | (0.3891) | (0.3548) | | |
| Ownership_reorg | 0.2293 | 0.3628 | | |
| 1- 0 | (0.3972) | (0.3572) | | |
| Payment_time_years | -0.1793 | -0.0306 | | |
| | (0.3799) | (0.0357) | | |
| Constant | -7.5088*** | -5.348** | | |
| | (2.8419) | (2.2522) | | |
| Year FE? | Yes | No | | |
| Observations | 105 | 108 | | |
| Pseudo-R2 | 0.312 | 0.2588 | | |

APPENDIX S - Probit results for labor and secured variables and for labor and unsecured variables

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses.

| Plan_Acceptance - Labor, Secured and Unsecured Decision | | | | | | | | |
|---|---------------|-------------|------------------------------------|--------------------|------------|--|--|--|
| Labor and secured – Va Variables | alue and numb | er criteria | Labor and unsecured · Variables | · Value and number | r criteria | | | |
| Secured debt (%) | -1.4368 | -1.08 | Unsecured debt (%) | 1.5580* | 1.3649* | | | |
| | (0.9592) | (0.8806) | | (0.8945) | (0.7401) | | | |
| Secured debt (#) | 0.02634 | 0.1478 | Unsecured debt (#) | -0.0015** | -0.0013** | | | |
| | (0.0444) | (0.3905) | | (0.0006) | (0.0005) | | | |
| SBL | 0.2116 | -0.3306 | UBL | -1.0718* | -1.0632* | | | |
| | (0.4323) | (0.3778) | | (0.6493) | (0.6056) | | | |
| Labor debt (%) | -2.3059 | -3.1524 | Labor debt (%) | -1.4243 | -2.2062 | | | |
| | (3.28) | (3.0985) | | (3.6838) | (3.6377) | | | |
| Labor debt (#) | -0.0001 | -0.00007 | Labor debt (#) | 0.0003 | 0.0001 | | | |
| | (0.0001) | (0.00013) | | (0.0001) | (0.0001) | | | |
| Туре | 0.6244 | 0.7027 | Туре | 0.9197 | 0.9818* | | | |
| | (0.4905) | (0.4537) | | (0.5465) | (0.5105) | | | |
| Asset_Disposal | 0.6428* | 0.7577** | Asset_Disposal | 0.7778** | 0.9134*** | | | |
| | (0.3414) | (0.3161) | | (0.3731) | (0.3422) | | | |
| Ln_Total_Debt | 0.1517 | 0.1029 | Ln_Total_Debt | 0.3466** | 0.2285 | | | |
| | (0.1363) | (0.1252) | | (0.1676) | (0.1416) | | | |
| Dif_Classes | -0.5837* | -0.3213 | Dif_Classes | -0.85704 | -0.4745 | | | |
| | (0.3421) | (0.304) | | (0.3886) | (0.3243) | | | |
| Dif_Same_Class | -0.3941 | -0.3791 | Dif_Same_Class | -0.6033 | -0.4573 | | | |
| | (0.3664) | (0.3484) | | (0.3961) | (0.36) | | | |
| Ownership_reorg | 0.2073 | 0.3424 | Ownership_reorg | 0.2023 | 0.3414 | | | |
| | (0.3828) | (0.3439) | | (0.4119) | (0.3722) | | | |
| Payment_time_years | -0.2254 | -0.0292 | Payment_time_years | -0.0197 | -0.032 | | | |
| | (0.3568) | (0.3401) | | (0.37755) | (0.03591) | | | |
| Constant | -2.8387 | -1.8292 | Constant | -7.031084** | -4.4917* | | | |
| | (2.4916) | (1.9934) | | (2.8714) | (2.398) | | | |
| Year FE? | Yes | No | Year FE? | Yes | No | | | |
| Observations | 102 | 105 | Observations | 102 | 105 | | | |
| Pseudo-R2 | 0.2157 | 0.1692 | Pseudo-R2 | 0.3034 | 0.2522 | | | |

APPENDIX T - Probit results for secured and unsecured debt

Plan_Acceptance is a dummy variable that takes the value of 1 if the reorganization plan is accepted without changes and 0 if the reorganization plan is either accepted with modifications suggested by the creditors or rejected. ***, ** and * denote significance at the 1% level, 5% level and 10% level respectively. Standard errors are shown in parentheses.

| Plan_Acceptance - Sec | cured and Unsecure | ed Decision | | | | | | | | |
|--------------------------------------|---|-------------|--|--|--|--|--|--|--|--|
| Secured and unsecure | Secured and unsecured - Value and number criteria | | | | | | | | | |
| Variables | | | | | | | | | | |
| Secured debt (%) | -1.6345 | -0.197 | | | | | | | | |
| | (3.4578) | (3.2719) | | | | | | | | |
| Secured debt (#) | 0.8398 | 0.04966 | | | | | | | | |
| Secured debt (#) | (0.0525) | (0.04352) | | | | | | | | |
| | (0.0525) | (0.01332) | | | | | | | | |
| SBL | 0.2561 | 0.0732 | | | | | | | | |
| | (0.468) | (0.3932) | | | | | | | | |
| | 1 2101 | 0.0115 | | | | | | | | |
| Unsecured debt (%) | 1.2181 | 2.0115 | | | | | | | | |
| | (3.1877) | (3.0221) | | | | | | | | |
| Unsecured debt (#) | -0.0018*** | -0.0013*** | | | | | | | | |
| | (0.0006) | (0.0004) | | | | | | | | |
| | | · | | | | | | | | |
| UBL | -1.2987** | -1.2446** | | | | | | | | |
| | (0.5705) | (0.5503) | | | | | | | | |
| Type | 1 0483 | 0 9785* | | | | | | | | |
| Type | (0.58515) | (0.5115) | | | | | | | | |
| | (| (, | | | | | | | | |
| Asset_Disposal | 0.8033** | 0.9389*** | | | | | | | | |
| | (0.3771) | (0.3385) | | | | | | | | |
| | 0.2000** | 0.00(0* | | | | | | | | |
| Ln_1otal_Debt | 0.3608** | 0.2369* | | | | | | | | |
| | (0.108) | (0.1402) | | | | | | | | |
| Dif Classes | -1.0158** | -0.5601* | | | | | | | | |
| | (0.4007) | (0.3199) | | | | | | | | |
| | | | | | | | | | | |
| Dif_Same_Class | -0.5921 | -0.4446 | | | | | | | | |
| | (0.4111) | (0.3663) | | | | | | | | |
| Ownership hooks | 0 1722 | 0 3868 | | | | | | | | |
| Ownersmp_reorg | (0.4139) | (0.3644) | | | | | | | | |
| | (0.1157) | (0.0011) | | | | | | | | |
| Payment_time_years | -0.0109 | -0.0273 | | | | | | | | |
| · | (0.0392) | (0.0362) | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Year FE? | Yes | No | | | | | | | | |
| Observations | 105 | 108 | | | | | | | | |
| Pseudo-K2 Source: own elaboration | 0.3322 | 0.2088 | | | | | | | | |
| Source. Own claboration | | | | | | | | | | |

| | | | Variance inflat | ion fact | ors | | | |
|-----------------|-------------------|-------|---------------------|----------|-------|-----------------------|------|-------|
| Variables – | Variables – labor | | Variables – secured | | | Variables - unsecured | | |
| labor debt | | | secured debt | | | unsecured debt | | |
| Variables | VIF | 1/VIF | Variables | VIF | 1/VIF | Variables | VIF | 1/VIF |
| Туре | 1.75 | 0.57 | secured_debt (#) | 1.21 | 0.82 | unsecured_debt (#) | 1.81 | 0.55 |
| log_debt | 1.84 | 0.54 | SBL | 1.59 | 0.62 | UBL | 1.57 | 0.63 |
| ownership_reorg | 1.19 | 0.83 | type | 1.84 | 0.54 | type | 1.77 | 0.56 |
| asset Disposal | 1.16 | 0.86 | Asset Disposal | 1.34 | 0.74 | asset Disposal | 1.30 | 0.76 |
| dif_classes | 1.08 | 0.92 | log_debt | 2.20 | 0.45 | log_debt | 2.84 | 0.35 |
| mean VIF | 1.40 | | Dif_classes | 1.09 | 0.91 | dif_classes | 1.12 | 0.89 |
| | | | dif_same_class | 1.09 | 0.90 | dif_same_class | 1.09 | 0.91 |
| | | | ownership_reorg | 1.34 | 0.74 | ownership_reorg | 1.35 | 0.74 |
| | | | payment_years | 1.20 | 0.83 | payment_years | 1.17 | 0.86 |
| | | | mean VIF | 1.43 | | mean VIF | 1.56 | |