

# **Bank Responses to Corporate Reorganization**

Evidence from Brazil

## **ABSTRACT**

We analyze how bank creditors vote on corporate reorganization filings. By employing a unique dataset on 125 reorganization filings in Brazil from 2006 to 2016, we find evidence that the unified creditors' framework does not apply and that senior creditors have come to dominate the Chapter 11 process. We also provide evidence on the conflict between bank creditor classes by demonstrating that conflict exists when senior bank creditors are in the money, whereas the opposite holds for junior bank creditors. Furthermore, conflict is closely linked to banks voting in favor of liquidation regardless of creditor class.

Keywords: bankruptcy; reorganization; conflict between creditors; creditors' bargain model

JEL codes: D74, G21, K22, M10, M20

### **1. Introduction**

According to Jackson (1982), most of the bankruptcy process concerns creditor distribution questions rather than discharge of the debtor. Along these lines, reaching a common agreement between creditors and debtors is crucial to reorganization filings. Because banks and secured institutional lenders are those creditors who are typically able to influence corporate policies (James, 1995), our goal is to assess the role of financial creditors during corporate reorganizations. The question under investigation is, "how do bank creditors vote on corporate reorganization filings?" The secondary question involves how creditors vote based on seniority.

This study adds to the bankruptcy literature by offering important insights into the creditors' bargain model and by analyzing a unique dataset that was not previously available and that contains bankruptcy court documents from 125 corporate reorganization filings in Brazil from 2006 to 2016. Following the trend in the finance literature, this study is a hybrid between law and financial distress issues. We focused on the descriptive statistics of the data collected and performed parametric and nonparametric average tests to understand the role of the conflict between bank creditors in the final outcome of reorganizations. We used this procedure because the sample bias does not allow the use of statistical inference tools commonly used in studies of this nature. Despite the extensive available information, the use

of linear regressions is not adequate due to the amount of missing information and the frequency distribution of the observations. We also examine the types of interventions made during creditors' meetings.

In sum, our analysis demonstrates that conflict between bank creditor classes is positively associated with the proportion of senior bank debt and the proportion of labor debt. Contract terms also seem to be highly correlated with disagreements between bank creditors: in cases of conflict, the debt of senior bank creditors received higher interest rates, and these creditors had to wait 3 times longer before receiving any payment. In this sense, our results corroborate the idea that senior creditors have come to dominate the Chapter 11 process.

This research is timely for a variety of reasons. First, recent bankruptcy studies have shifted the focus away from equity and managerial control to creditor behavior. These studies demonstrate that senior lenders use several strategies to limit the bargaining position of holders of subordinated debt during reorganizations (Branch and Ray (2007), Ayotte (2009)), which reinforces the need to study the conflicts between creditor classes. Second, the number of corporate reorganization filings in Brazil increased from 252 to 828 between 2006 and 2014, which amounts to an increase of approximately 14% per year. In 2015, due to Brazil's economic crisis, this number has jumped to 1287, which represents an increase of 55% in only one year. Although some practitioners argue that some of these filings are only precautionary measures, the increase is significant. Most of this huge increase comes from filings of small companies, as illustrated in **Graph 1**.

The paper proceeds as follows: the next section reviews the previous literature, and we present our data analysis in the third section. We analyze the role of conflict between bank creditor classes in Section 4. The conclusion and references follow.

## **2. Prior Literature**

Many authors argue that reorganization is a two-stage game (Bulow and Shoven (1978), White (1981), Fama (1985), Fisher and Martel, 1995)). In the first stage, firms decide whether to file for reorganization. Once a reorganization procedure is chosen over liquidation, "there is a conflict between the secured creditors' right to claim their collateral versus the goal of reorganizing the firm" (Araujo and Funchal, 2005). In stage two, creditors bargain and vote in favor or against the reorganization.

We identified several approaches in the literature to modeling creditor responses to corporate reorganizations. Some studies view the bargaining between creditors as a non-cooperative game (Annabi, Breton and Français, 2010), while others argue that this process can be depicted as a collective action problem or as a larger scale prisoner's dilemma (Jackson (1982), Li and Li (1999), Fan and Sundaresan (2000)). A more recent study addresses the bankruptcy decision as the exercise of a real option, as claimholders have incentives to withhold information due to the length of the process (Baird and Morisson, 2001).

The conflict of interest lies in the fact that when a company files for bankruptcy, its market value is lower than the total amount of its debt. Hence, the creditors know that their best interest will be maximized as long as they cooperate. Moreover, covering all aspects of negotiations, such as the future use of the firm's assets or how much and what type of securities the various creditors will receive, can result in a lengthy and costly procedure (Hotchkiss et al., 2008).

Despite the fact that bankruptcy law is designed to avoid coordination problems and contract incompleteness, Jackson (1982) argues that "bankruptcy law's beguiling slogan has been little more than a banal reminder that equals are to be treated equally in bankruptcy: the important determination of who those equals are is often not resolved under bankruptcy law." Thus, in his view, bankruptcy proceedings are at the back end of the creditors' bargain model. In fact, several studies have demonstrated that deviations from the absolute priority rule occur in practice (Franks and Torous (1989), Eberhart et al. (1990), Weiss (1990)). In Germany, a financial institution is appointed to mitigate the risk of uncoordinated creditor action (Bankenpool). However, we find no documentation of such an instrument in Brazil or the United States. In this sense, bank creditors' bargaining is a coordination problem (Brunner and Kahnen, 2008).

Branch and Ray (2007) argue that subordinate debtholders have considerable leverage in the bankruptcy negotiation process due to courts' bias toward obtaining consensual plans and their ability to block or delay confirmation of a plan that provides subordinate debtholders with little or no recovery. Secured debtholders, on the other hand, can obtain a recovery in liquidation, which provides nothing for junior creditors. Despite the fact that bankruptcy laws are written in such a way that the Absolute Priority Rule should not be violated, senior creditors can use several strategies to limit the bargaining position of junior creditors, such as vote dilution, the enforcement of indenture provisions or by exercising control through stringent covenants. This bargaining between secured and unsecured creditors can distort the reorganization process. Ayotte (2009) argues that creditors with senior, secured claims have come to dominate the Chapter 11 process. These recent findings are contrary to Welch (1997), who proposes that bank debt is universally

senior because if they [the banks] were unsecured, they would be better organized and could more strongly contest priority in cases of financial distress.

Studying how bank creditors behave during the reorganization process is useful for several reasons. First, companies do not rely on public issuance in some countries because their bond markets are stunted, making bank financing more important (Allen, Chui and Maddaloni, 2008). Second, some articles highlight the potential problems faced by distressed firms that have bank debt because banks can not only create regulatory difficulties to scale down the firms' claims but can also be more difficult to obtain concessions from (James, 1995). Asquith and Scharfstein (1994) also argue that banks "do not play much of a role in resolving financial distress", and real debt relief comes from subordinated creditors. The authors, however, rely on the same assumption made by Welch, namely that banks are predominantly senior and thus have an advantage in these negotiations.

Third, some studies provide evidence that banks and secured institutional lenders are the creditors who are usually able to influence corporate policies, rather than public bondholders or trade creditors (Gilson and Veytsupens, 2004). Finally, because firms usually have more than one bank as a creditor, one stream of literature highlights the issue of the size of the group of creditors and their role in a reorganization as a whole: Brunner and Krahen (2008) demonstrate that while coordination among a smaller group of banks is associated with a higher probability of reorganization success, the opposite holds for an increased number of bank lenders because inefficiencies arise from the inability to renegotiate multiple debts. Franks and Sussman (2005), for their part, argue that debt dispersion can lead to coordination failures.

On the one hand, Chen, Weston and Altman (1995) hypothesize that when there is a group of "bank-type" lenders, "the parties will function according to a Coase Theorem [1937]", which holds that they will work as *one party* seeking to maximize investment returns in their joint interest. Here, we understand that an agreement between parties implies an efficiency gain because it involves lower financial distress costs, as proposed by Bebchuk and Chang (1992). Thus, one should expect banks to display the same voting profile during creditors' meetings. Kirschbaum (2009), on the other hand, argues that secured creditors will usually prefer to value the assets of a corporation being reorganized at something close to an amount that is sufficient to cover their own claims, without regard for other parties, which would make one assume that secured creditors do not necessarily cooperate. Gertner and Scharfstein (1991), for their part, offer a theoretical explanation for the mixed positions in the literature: when financial distress hampers operating performance, financial renegotiation is inefficient and the Coase Theorem fails. In this sense, one should expect non-

successful reorganizations to be related to diminished coordination among lenders. We will address this debate empirically.

Bank behavior is a topic that is subject to considerable controversy, and the recent literature on bankruptcy has shifted the focus away from equity and managerial control and demonstrated that the unified, single-creditor framework is far from universal. Conflict therefore occurs because of the fundamental inefficiency of the bankruptcy process: resource allocation questions (sell versus reorganize) are ultimately confounded with distributional questions (how much each creditor will receive) (Ayotte, 2009).

## **2.1 Corporate reorganization process in Brazil**

Bankruptcy proceedings have two possible outcomes: reorganization or liquidation. Corporate reorganization is a legal tool to avoid bankruptcy and a shield with respect to the company's payment obligations. In the United States, these mechanisms are referred to as Chapter 11 and Chapter 7 of the US bankruptcy code, respectively. In Brazil, the process is fairly similar and is coded in the Bankruptcy Code of 2005. In comparison to the previous code, it "offers more transparency in terms of procedures and offers stakeholders more control of the process. It also allows unsuccessful companies to regain credibility and reorganize their activities" (Practical Guide on Corporate Reorganizations, Federal Council of Administration – Brazil, 2011).

As we write this article (2017), the Brazilian government is reviewing this code, arguing that the intention is to aid in the recovery of productivity and sustain job positions as the country faces a severe stagnation scenario. Despite the fact that we had access to only a few balance sheet figures from the companies we covered, we verify that the most important issue seems to be mismanagement and not problems with the law itself. Indeed, most of the filings come from small enterprises.

According to Article 50 of the Brazilian Bankruptcy Code (11.1001/2005), firms have at their disposal a total of 15 tools to structure a reorganization process. These tools are not exclusive and can be pursued at the same time.

According to the deadlines established by the Brazilian Bankruptcy Code of 2005, from the approval and beginning of the implementation of a reorganization plan, a company has up to 2 years to negotiate and settle its liabilities<sup>1</sup>. Similarly, in the United States, the average Chapter 11 reorganization case takes 25 months to confirm the reorganization (Branch and Ray, 2007). For more information about the determinants of delays in corporate

reorganizations, see Silva, Saito and Manoel (2015). To decide whether a company is subject to reorganization or liquidation, creditors attend creditors' meetings.

### 3. Data Analysis

#### 3.1 Data Sources

Our main sources of data are corporate reorganization filings, judicial trustees' websites and files from one of the main Brazilian courts (*Vara de Falências e Recuperação Judicial de São Paulo*). Our initial sample had more than 140 cases, but because of missing information, we discarded 15 of them; thus, our final sample contains information on 125 corporate reorganizations in Brazil from 2006 to 2016. For each case, we analyze the following documents: list of creditors, creditors' meeting minutes, corporate reorganization plans and modified plans, and reports of the valuation of assets.

Although the amount of reorganization filings in Brazil is much higher than the number in our sample, Brazil lacks data centralization. Some documents can be found at state courts, and filing companies and consulting firms often do not provide such documents on their websites. Despite this challenge, our sample contains reorganization filings from 10 different states but contains a heavier weight of south and southeast regions (41% of the companies are from São Paulo, the biggest Brazilian state in economic terms, 19% are from Rio Grande do Sul, 13% are from Santa Catarina and 11% are from Goiânia). The entire process in Brazil from registration to approval or rejection can take up to two years, which is why some recent cases might be missing in our dataset.

For the cases in which the proposed conditions were different for different banks, we noted in our files the highest bank haircut as well as the longest waiting period. In cases of foreign debt in US dollars, we used the exchange rate for the month of the approval or rejection of the plan to convert the figures to Brazilian Reais. As we lacked balance sheet figures, we also collected information on residual book values.

For each case, we gathered the following information for both the secured and unsecured classes: readjustment index, interest rate, proposed haircut, and amortization and waiting period. Because our interest lies in role of the financial institutions, we detailed each bank's credits and behavior during the creditors' meetings. In this sense, we typified bank behavior through 10 different possible interventions, which can be found in **Table 1**. To include the dimensions of the

company's size and its financial health, we collected data on the residual book values as reported in the reorganization plans and estimated by the consulting companies that prepared the legal documents.

### 3.2 Descriptive Statistics

General descriptive statistics are presented in **Table 2A**. On average, firms had a total of R\$128 million in debt, and bank debt represented 55% of this amount, or R\$71 million. Including both bank and non-bank debt, secured debt was approximately R\$13 million, and average unsecured debt was approximately R\$98 million. Companies had an average life of 32 years, and the average haircut proposed for the creditors was 43%.

Regarding bank debt (**Table 2B**), there were approximately 9 bank creditors in each case. Each bank had an average of R\$8 million in secured debt and R\$20 million in unsecured debt. On average, bank debt represented 55% of the companies' total debt. For both approved and rejected cases, the proportion of unsecured debt to companies' total debt was higher than the proportion of secured debt. Additionally, rejected cases had more secured debt than the approved cases (28.54% *versus* 16.29%). These findings suggest that the presence of secured debt creates challenges for the approval of the plan due to the negotiating power of the secured banks, which usually apply pressure for better conditions (large banks made two-thirds of the requests for better debt terms). Large banks had unsecured debt in 86% of our cases and secured debt in 40% of the cases, with an average value of R\$12.8 million and R\$3.48 million, respectively. However, if we exclude HSBC, average unsecured bank debt decreases to R\$4 million. Contrary to our expectations, in only 5% of the cases is the Brazilian Development Bank (BNDES) the creditor, with an average amount of R\$37.8 million. This may be due to the fact that the largest proportion of reorganization filings during the period we cover comes from small companies, as shown in Graph 1.

To contrast our findings with those of Brunner and Kahnen (2008), we also compare the number of banks involved in a certain case and the plan approval rate. Our sample contains 108 banks. For the entire sample, each bank acted as a creditor in an average of 5 bankruptcy procedures. If we consider only the six largest banks in Brazil (Banco do Brasil, Bradesco, Caixa Econômica Federal, HSBC, Itaú and Santander), this number increases to 52. The correlation between the number of junior banks involved and the approval rate is minus seventeen percent (-17%). For senior banks, the number is similar, at minus fourteen percent (-14%). This result is in accordance with Brunner and Kahnen's (2008) findings: the more banks that are involved in a reorganization case, the more likely the reorganization is to be rejected

by the creditors. The average number of bank creditors is slightly higher for cases involving conflict (8 versus 5). Banco do Brasil and Itau (two of the six largest banks in Brazil) are creditors in 80% of the conflict cases, while they are creditors in only 57% of the total cases for the entire sample. Bank creditors requested that guarantees should be maintained 14% of the time, while we verified only half of this frequency for the entire sample.

Although practitioners argue that labor debt poses challenges for the negotiation of reorganizations, in our cases, labor debt represented only 1% of total debt. Despite the fact that workers have priority in payment according to the Brazilian bankruptcy code, this amount does not seem to represent a large fraction of the total pie. Indeed, there were only 2 cases in our sample in which workers voted against the reorganization plan.

Practitioners in Brazil also argue that some companies have been using the reorganization process as a means to improve their bargaining positions with both suppliers and debtholders and not necessarily because of financial distress. Indeed, the figures in our database seem to be in accordance to this hypothesis: first, the average residual book value of assets was R\$320 million, which implies that reorganizing firms had an average leverage of only 40%. Second, the costs of the entire reorganization process seem low when compared to both total debt and residual book value: some collected reports indicate that this number is approximately R\$500 thousand, which represents only 0.2% of residual book value and 0.4% of total debt. In this sense, in case of working capital mismanagement, as revealed by some financial statements we had access to, a reorganization filing seems to be a cheap strategy.

Although we lacked balance sheet figures for most of the companies we studied, we had access to some of them. It is interesting to note that most of these balance sheets reported operational losses, which seems to indicate that the reorganization filings were largely concerned with mismanagement in the first place. Indeed, most of the increase in filings during the period we covered was from small enterprises (Graph 1).

The reorganization approval rate for our sample is 78%, which is comparable to the 75% rate for Canada demonstrated by Fisher and Martel (1995), although the authors' data refer to the 1980s. Despite the high approval rate, only one in four companies survives the reorganization process in Brazil. In the United States, this proportion falls to only one in eight.<sup>3</sup>



The approved plans required a larger haircut for secured creditors than the plans that were not approved (43% versus 39%), while the contrary holds for unsecured creditors (42% versus 52%). On average, the required waiting and amortization periods were longer for the approved plans, regardless of creditor class. The fact that the average haircut is similar for both classes of creditors is contrary to international evidence demonstrating that secured creditors fare relatively well in formal bankruptcies in countries such as the United States or the United Kingdom (Franks and Sussman (2005), Davydenko and Franks (2006)).

Finally, **Table 3** presents information regarding the frequency of certain events during the reorganization process. Sales of productive units to repay debt occurred 23% of the time, which indicates the use of merger and acquisition activities after reorganization approval. Gilson, Hotchkiss and Osborn (2015) argue that the use of M&A activities during bankruptcy proceedings blurs the traditional distinctions between reorganization and liquidation. Debt conversion occurred in only 6% of the sample.

### 3.3 Bargaining power

Our first analysis regarding bank behavior consists of analyzing requests from bank creditors. The most frequent interventions were the bank requesting different payment conditions (7.8%) and bank disagreement with the listed credit or presenting a challenge (3%). All of the other interventions had a frequency of 1% or less. Large banks made two-thirds of these requests, which may indicate their negotiating power.

To better understand the banks' power empirically, we calculated a debt concentration index (DCI), which is similar to the Herfindahl index. The Herfindahl index goes from zero to one and is traditionally used to assess the amount of competition among firms in a certain industry. Higher values indicate more monopolistic markets. Here, we use it as a measure of the competition between banks during a certain reorganization case. The formula is:

$$DCI = \sum_{i=1}^n s_i^2$$

For each reorganization process,  $s_i$  measures the proportion of the total debt held by each bank involved in the negotiation. We do so because some authors argue that debt dispersion can often lead to coordination failures (Franks and Sussman (2005), Bolton and Scharfstein (1996)). As expected, the average DCI for secured debt is 0.7, while that for unsecured debt is 0.45. Because senior debt is more concentrated than unsecured debt in practice, this result suggests

that senior bank creditors are able to agree to terms more easily than unsecured bank creditors can. In fact, the correlation between the average debt concentration and the plan approval rate is minus thirteen percent (-13%).

#### **4. The Impact of Conflict Between Creditor Classes**

Our second analysis of bank behavior consists of observing cases in which a conflict existed between the unsecured and secured bank creditors, which represents 16% of the sample, or 20 cases. It is worth noting that the discussion of creditor conflict is relatively recent in the finance literature (Longhofer and Peters (2004), Ayotte and Morrison (2009), Jenkins and Smith (2014)). In general, studies indicate that conflict between secured and unsecured creditors can significantly impact the outcome of a reorganization process. Nevertheless, empirical analysis of this conflict is rather scarce.

While the average approval rate for the entire sample is 80%, for cases in which the secured and unsecured lenders disagree, this value falls to 75%.

Ayotte (2009) argues that when senior creditors are oversecured, i.e., when their claims are worth less than the value of the firm's assets, cases are more likely to result in liquidation, while the opposite holds when they are undersecured. In these cases, "creditor conflict is likely to be most pronounced." To see if this holds for our cases, we calculate the senior bank debt to asset valuation ratio, which averages 0.28 for the entire sample. Using a total senior debt/asset valuation ratio, the average value is 0.42. Both figures indicate that senior creditors are oversecured. This result contrasts with Ayotte's argument, as our average reorganization approval ratio is 78%. However, conflict occurs only 16% of the time.

Contrary to our expectations, the total amount of both secured and unsecured bank debt is larger in the no conflict cases. In the conflict cases, bank debt represented a much lower percentage of the total debt when compared to the no conflict cases (20% versus almost 100%). Another finding that drew our attention was that the residual book value for the conflict cases was, on average, 19 times higher than that for the no conflict cases.

Regarding haircuts, senior creditors had an average haircut of 24% in conflict cases, whereas for junior bank creditors, the haircut was 32%, which suggests that conflict is associated with a greater haircut for junior creditors and indicates that senior bank creditors may fare relatively well in these negotiations. The senior-to-junior ratio, which is the total amount of secured debt divided by the total amount of unsecured debt, was 2.6x for the entire sample and 1.0x for the

conflict cases. This result means that, on average, when there was a conflict, the amount of unsecured debt was the same as that of secured debt.

Baird and Morrison (2001) provide a useful framework to understand conflict between creditors. They model the shutdown decision as a real option. We combine their ideas with Ayotte's in **Table 4** to determine whether this approach yields additional insights. We define a conflict between bank creditors if they reach no agreement during creditors' meetings, that is, if their votes differ.

We verify that in the cases when conflict existed and plans were approved, both creditor classes were deep in the money, which justifies the struggle between the parties. In fact, these are the only cases in which junior bank creditors are in the money. In contrast, when plans were approved but there was no conflict, junior banks were so out of the money that a conflict did not seem justifiable, as their expectation of recovery was minimal.

We used the ratio between the total bank debt of the groups of creditors in comparison to the market value of these companies, understood here as the residual book value verified in the valuation reports of the assets included in the judicial recovery proceedings. Asset valuation information is available for 58 companies. The group of creditors is considered to be in the money or able to exercise their option when that ratio is less than 1 and to be out of the money otherwise. The results are shown in Table 3a.

For cases where there is conflict, both groups of lenders may be considered as in the money. Thus, the conflict seems to be justifiable since the portion to be distributed among creditors may be a subject of further discussion because these companies have a residual book value much smaller than the sample average. In these cases, if the company were liquidated at its residual book value, both groups would be able to receive the total amount of their credits without suffering any haircut. Even in cases where there was no conflict, the subordinate bank creditors were out of the money. This result is in line with Ayotte's (2009) argument that when creditors holding collateral are over-insured (that is, their debt amount represents a smaller portion than the residual value of the company), conflict is more likely.

When there was a conflict between bank creditor classes and plans were approved, both were in the money (**Table 4**). That is, there was room for negotiation. In contrast, for the cases where conflict existed but firms were liquidated, both classes were in the money, and senior bank creditors could recover almost all of their credits. It is interesting to note that

in cases where there was no conflict and the plans were approved, the amount of subordinated debt represented more than ten times the residual book value of the company.

#### **4.1 Hypothesis Tests – parametric and non-parametric average tests**

To understand how conflict between bank creditors impacts the outcome of reorganizations, we used parametric and non-parametric average tests to determine whether there is any difference between the cases in which bank creditors disagreed and those in which they reached common ground.

**Table 5a** presents the parametric average tests for the variables we collected. For all the tests, our null hypothesis is that there is no difference between the groups (conflict versus no conflict).

First, the average test for the ratio of senior bank debt to total debt is significant, which indicates a difference between the groups. This result is in line with the findings of the more traditional bankruptcy studies, which suggest that senior creditors have more bargaining power during reorganization negotiations (Ayotte and Morrison (2009)).

Second, the tests demonstrate that there is a significant difference between the groups in terms of the amount of labor debt in relation to the total debt involved in the conflict cases. In addition to representing a higher percentage of total debt, we verify that in cases of conflict, companies had a much smaller residual book value. Due to discrepancy of data, however, we cannot conclude that labor debt imposes negotiation barriers.

Our third highlight concerns the interest rate and haircut offered to different groups of bank creditors, as both differences are statistically significant (with 95% confidence). These results show that, on average, bank creditors with secured and unsecured guarantees received larger haircuts in cases where there was conflict. Interestingly, the interest rate offered to secured bank creditors was greater in cases where there was a conflict.

Contrary to the results found by Brunner and Kahnen (2008), the number of banks involved does not seem to be associated with the existence of conflicts between banks since we did not find a significant difference between the samples. In fact, the correlation between the number of banks and the existence of conflict is low, at 12.63%.

Although there is no statistically significant difference for the waiting period, it is interesting to note that in cases where there was a conflict, the average waiting period for both classes was approximately 20 months, whereas for cases in which there was no conflict, the waiting period was significantly reduced.

Finally, there was a statistically significant difference for the sale of productive units, which occurred in 15% of the conflict cases, on average, and in 23% of the cases in which there was no conflict. Debt conversion, share repurchase or new debt issues occurred only in cases in which there was no conflict.

The non-parametric tests support the null hypothesis that there is no significant difference between the groups (conflict versus no conflict). **Table 5b** reports the Wilcoxon test results (Mann-Whitney). Most tests show that there is no difference in means between the cases in which there was conflict and those without conflict except for the variable number of banks.

## **5. Conclusion**

The goal of this study was to analyze how bank creditors respond to corporate reorganization filings. The literature presents mixed findings on whether senior creditors have come to dominate the negotiation process. We hand collected data on 125 reorganization filings in Brazil from 2006 to 2016. The methodology for this study consisted of detailed descriptive statistics as well as average tests, both parametric and non-parametric. We use these tests to identify which factors are associated with the conflict between creditor classes.

In general, our analysis demonstrates that senior creditors have come to dominate the Chapter 11 process, as some of the recent literature on bank creditor behavior proposes. Specifically, we provide insights on the conflict between bank creditor classes, a topic with very scarce evidence in the literature. If we re-examine the bargain as the exercise of a real option, it is clear that conflict exists when senior bank creditors are in the money, but the opposite holds for junior bank creditors. Despite mixed evidence, we demonstrate that conflict is closely linked to banks voting in favor of liquidation, regardless of creditor class.

As this study is a hybrid between law and corporate distress issues, we also note that most of the reorganization filings in Brazil during the period we cover came from small companies. We had access to some of their financial statements,

which indicated that the problem has much more to do with mismanagement than to difficulties with the bankruptcy code itself.

To deepen our analysis, future research should include balance sheet information and data on post-reorganization performance.

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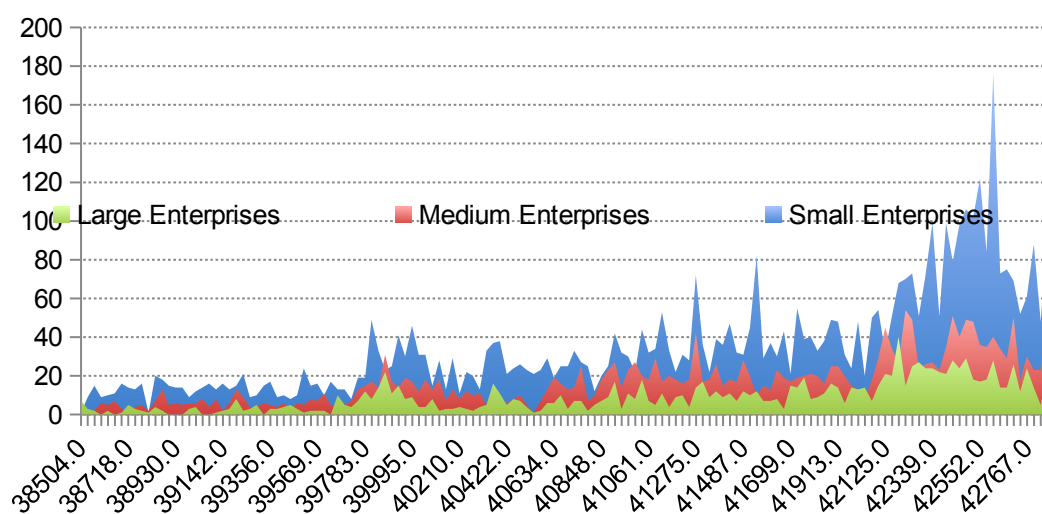
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## **Tables, Lists and Figures**

### **Graph 1: Reorganization Filings in Brazil**

## Reorganization Filings in Brazil



Source: Serasa Experian

**Table 1: Bank behavior – bank intervention during creditors’ meetings**

Code	Bank Intervention
0	No Intervention / Bank did not hand in required documents on time / Bank arrived late to the Committee / Bank was absent
1	Bank did not agree with listed credit or credit classification or presented a Challenge Procedure. In Portuguese, this is called <i>Impugnação de Crédito</i>
2	Bank requested longer period for analysis or requested Meeting Suspension
3	Bank requested conditions other than those presented by the company or presented an Alternative Plan
4	Bank assigned receivables to a Receivables Investment Fund
5	Bank requested that guarantees not be suspended or that it will maintain execution against guarantors or co-obligors, as a creditor is defined as a person or entity who promises to pay back a loan if the original borrower does not pay it back, and a co-obligor is defined as one who is bound together with one or more others to fulfill an obligation
6	Unsecured Bank did not agree with conditions proposed to Secured Banks or vice-versa
7	Bank did not agree with Reorganization request or stated that proposed Plan lacks legal certainty
8	Bank stated that it has Priority Credit. In Portuguese, this is called <i>Crédito Extraconcursal</i>
9	Bank did not agree with conditions proposed to Banks in the same group
10	Bank was against sale of fixed assets

**Table 2A – Descriptive Statistics – General**



<i>In BRL millions</i>	<b>Total</b>	<b>Senior</b>	<b>Junior</b>	<b>Labor</b>	<b>Asset</b>	<b>Haircut</b>	<b>Haircut</b>	<b>Age</b>
	<b>Debt</b>	<b>Debt</b>	<b>Debt</b>	<b>Debt</b>	<b>Valuation</b>	<b>(Senior</b>	<b>(Junior</b>	
						<b>Debt)</b>	<b>Debt)</b>	
n. obs	114	74	110	114	58	39	78	109
Average	127.9	13.9	98.056	1.9	319.8	42%	45%	32
St. dev	336.6	37	281.9	4.9	1,068	23%	23%	23
Max	2,325	204.5	2,012	51.6	4,426	90%	85%	113
Min	0.4	0	0	0	0,1	0%	0%	1

**Table 2B – Descriptive Statistics – Bank Debt**

<i>In BRL millions</i>	<b>Bank Debt</b>	<b>Bank Senior Debt (per</b>	<b>Bank Junior Debt (per</b>	<b># Banks</b>
		<b>bank)</b>	<b>bank)</b>	
n. obs	124	113	123	125
average	71.4	7.9	19.9	9
st. dev	251.2	20.6	311.3	5
max	2,262	130.8	8,291	24
min	0	0	0	1

**Table 3: Frequency of events during reorganizations**

<b>Event</b>	<b>Frequency</b>
Capital Subscription, Raising Capital or Spin-Off	13%
Debt Conversion	6%
Debt Issue	5%
Share Buyback	1%
Productive Unit Sale	23%
Creditor as a Special Partner*	19%

\*By Special Partner, we mean creditors who agree to better conditions for debt payment and/or offer new lines of credit.

**Table 4 – Reorganization as the exercise of a real option**

This table presents the total debt/book residual value ratio for both creditor classes. Creditors are in the money if the ratio is equal or larger than 1. For the computation of the senior debt ratio, we subtract the amount of labor debt, as workers have priority in payment according to the Brazilian bankruptcy code. For the computation of the junior debt ratio, we subtract the amount of senior debt for the same reason. The sample contains 125 cases, and conflict occurs in 20 of them.

	<b>Conflict</b>		<b>No Conflict</b>	
	<b>Approved</b>	<b>Rejected</b>	<b>Approved</b>	<b>Rejected</b>
Senior Bank Debt/Residual Book Value	0.27	1.10	1.19	0.58
Junior Bank Debt/Residual Book Value	0.51	2.33	10.87	4.09

**Table 5A – Parametric average tests**

This table presents parametric average tests, with the sample grouped by the existence of conflict between bank creditors. The sample contains 125 cases, and conflict occurs in 20 of them. Results are reported for a 95% confidence interval.

<b>Variables</b>	<b>Average - Conflict</b>	<b>Average – No Conflict</b>	<b>T test</b>	<b>Conclusion</b>
Number of bank creditors	8.00	6.63	0.35	Confirmed
Total Debt	R\$82.09	R\$90.03	0.00	Confirmed
Labor Debt/Total Debt	3.51%	2.77%	4.76	Rejected
Senior Bank Debt/Total Debt	15.08%	8.78%	7.90	Rejected
Junior Bank Debt/Total Debt	31.65%	35.64%	-1.02	Confirmed
Haircut – Senior Debt	24.75%	10.90%	10.40	Rejected
Haircut – Junior Debt	32.42%	26.52%	4.71	Rejected
Amortization – Senior Debt <sup>3</sup>	91 months	44 months	0.11	Confirmed
Amortization – Junior Debt <sup>3</sup>	92 months	99 months	-0.01	Confirmed
Waiting Period – Senior Debt <sup>3</sup>	21 months	7 months	0.45	Confirmed
Waiting Period – Junior Debt <sup>3</sup>	20 months	14 months	0.16	Confirmed
Debt Conversion <sup>1</sup>	0.00%	7.77%	-5.26	Rejected
Share repurchase <sup>1</sup>	0.00%	1.00%	-4.90	Rejected
New debt issue <sup>1</sup>	0.00%	5.83%	-5.15	Rejected
Productive Unit Sale <sup>1</sup>	15.00%	23.30%	-1.99	Rejected
Corporate Restructuring <sup>1</sup>	20.00%	11.65%	3.05	Rejected
Partner Lenders <sup>2</sup>	25.00%	17.48%	2.03	Rejected

<sup>1</sup> As a proportion of the total number of reorganization cases

<sup>2</sup> Partner Lenders are those willing to offer new lines of credit to the company in case the reorganization is granted.

<sup>3</sup>In months

**Table 5B – Non-parametric average tests**

This table reports the non-parametric Wilcoxon average test, with the sample grouped by the existence of conflict between bank creditors. We assume the null hypothesis that there is no difference between the groups. The sample contains 125 cases, and conflict occurs in 20 of them.

<b>Variables</b>	<b>Z test</b>	<b>Prob  z  &gt; Z</b>
Number of bank creditors	-2.12	0.03
Total Debt	-0.23	0.81
Labor Debt/Total Debt	-0.82	0.41
Senior Bank Debt/Total Debt	0.59	0.55
Junior Bank Debt/Total Debt	0.62	0.52
Haircut – Senior Debt	-0.45	0.64
Haircut – Junior Debt	-1.21	0.22
Amortization – Senior Debt <sup>3</sup>	1.24	0.21
Amortization – Junior Debt <sup>3</sup>	1.48	0.13
Waiting Period – Senior Debt <sup>3</sup>	-0.78	0.43
Waiting Period – Junior Debt <sup>3</sup>	-1.42	0.15
Debt Conversion <sup>1</sup>	1.28	0.19
Share repurchase <sup>1</sup>	0.44	0.65

New debt issue <sup>1</sup>	1.10	0.27
Productive Unit Sale <sup>1</sup>	0.81	0.41
Corporate Restructuring <sup>1</sup>	-1.01	0.31
Partner Lenders <sup>2</sup>	-0.78	0.43

<sup>1</sup> As a proportion of the total number of reorganization cases

<sup>2</sup> Partner Lenders are those willing to offer new lines of credit to the company in case the reorganization is granted.

<sup>3</sup> In months

## NOTES

<sup>1</sup> This information was provided by Deneszuk e Antonio Sociedade de Advogados and can be found at <http://dasa.adv.br/recuperacao-judicial/>.

<sup>2</sup> According to Jackson (1982), “A more profitable line of pursuit might be to view bankruptcy as a system designed to mirror the agreement one would expect the creditors to form among themselves were they able to negotiate such an agreement from an ex ante position.”

<sup>3</sup> <http://www1.folha.uol.com.br/mercado/2016/10/1820669-so-uma-em-cada-quatro-empresas-sobrevive-apos-recuperacao-judicial.shtml>; Branch and Ray (2007).

<sup>4</sup> Using a sample of 338 financial reorganization plans in Canada, they find evidence that plans with high ratios of secured debt are more likely to be accepted, which they interpret as evidence of the secured creditors having insider information about the financial viability of the firms.