Bankruptcy Outcomes in Congested Courts: Evidence from Brazil

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The views expressed in this paper are those of the authors and do not necessarily reflect those of the Banco Central do Brasil.

July 31, 2024

Abstract

In this paper we investigate the effects of the congestion of courts on the outcomes of bankruptcy procedures. Using a novel data set on bankruptcy requests filed in Brazil between 2000 and 2015, we exploit the high variation in the level of congestion of the courts across judicial districts. To establish a causal relation, we implement an instrumental variable strategy that exploits Brazilian state laws on judicial organization to create an exogenous measure that strongly predicts the level of congestion of courts. We find evidence that firms operating in municipalities with a higher level of court congestion have a lower probability of liquidation during a reorganization procedure. Presenting a simple theoretical framework, we argue that the possible mechanism is that creditors' recovery in liquidation is lower in less efficient courts, potentially increasing firms' positions on debt renegotiation, what ultimately increases their probability of overcoming the financial distress and not being liquidated. Exploiting a detailed Brazilian employer-employee dataset to create a proxy of firm closure, we find evidence in the same direction, indicating that the higher the level of congestion of the courts, the lower the probability that the firm under reorganization will exit the market. Additionally, we find that, conditional on exiting, it takes longer to a firm exit the market since a reorganization or liquidation request in municipalities with a higher level of congestion of courts.

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I Introduction

An efficient bankruptcy system has to define legal provisions to find an appropiate balance between the bargaining power that it assigns to creditors and debtors. Ex-ante, it plays an important role to give incentives to entrepreneurs to start firms and to investors to provide them with capital (La Porta et al. (1997); Djankov et al. (2003); Araujo et al. (2012)). Ex-post, once default has occured, it promotes reallocation of capital and labor through liquidation and reorganization procedures. It aims to prevent the inefficient continuation of non-viable firms and the inefficient liquidation of viable firms, preserving them as a going concern (Baird (1986); Hart (2000)); Bebchuk (2001)).

Reorganization is a bankruptcy approach present in many countries (Brazil, U.S. and Germany, for example). It gives to an insolvent firm a chance of reestructuring its financials by renegotiating in court with all its creditors. The firm has to submit a plan containing proposals of debt renegotiations, sale of assets and demand for new credit. Creditors play an active role by voting to accept or reject the plan submitted by the debtor. If the plan is accepted, the reorganization is granted and the firm has a chance to overcome from its financial distress. If it succeeds in the implementation of the plan, after two yers it is declared recovered by the court. Otherwise, if the plan is rejected (or if the firm do not accomplish the terms and conditions estbalished in the approved plan), the case is converted into a liquidation procedure, the firm shuts down and the court proceeds to sell assets to pay the creditors. To decide individually whether to accept or reject the plan, each creditor compares his expected payoff in case of reorganization granted - which includes a debt renegotiated downward and depends on the firm effective recovery - to the expected recovery in case of firm liquidation - in which there is a chance to recover all the original debt. In case of liquidation, the procedure is entirely dealt by the court, without active participation of the creditors. Inefficient courts tend to be slow on the auctions of assets in a liquidation procedure, decreasing firm liquidation value, through the depreciation of unsold non-operating assets, and, ultimately, creditor's expected recovery. Despite the documented importance of bankruptcy laws for an economy (Bergoeing et al. (2002); Araujo et al. (2012)) and of the distortionary effects ex-ante caused by low enforcement of judicial institutions (Ponticelli and Alencar (2016); Jappelli et al. (2005); Visaria (2009)), there is little empirical evidence about how this friction affects the decisions during bankruptcy procedures and, ultimately, their outcomes.

In this paper we empirically investigate the effects of the congestion of the judiciary on the resolutions of bankruptcy procedures. By affecting negatively firm liquidation value, the efficiency of the courts has direct impacts on creditors' payoff in liquidation and we want to investigate whether it affects the final outcome of a procedure. We create a novel data set extracted from state judiciary's websites containing detailed information

on Brazilian bankruptcy requests from the years 2000 to 2015. In this version of the paper, we use data extracted only from the state of São Paulo. We identify the bankrupt firms and match them with detailed information on their bank credit history and labor force. The credit information comes from the Credit Information System (SCR) of the Central Bank of Brazil. For the labor information, we use the employer-employee dataset Relacão Anual de Informações Sociais (RAIS) of the Brazilian Ministry of Labor, which records detailed information on firm employees over time. Additionally, to create a measure of court congestion, we collect data from monthly productivity reports submitted by Brazilian courts to the National Council of Justice (CNJ). We show that the level of congestion of civil courts is highly correlated to the time in court for liquidation cases in a municipality, indicating that it is a good predictor for the efficiency of the courts on dealing with firms' liquidation. Our empirical strategy relies on two main aspects: (i) there is a significant variation in terms of court congestion across municipalities in the state of São Paulo; (ii) the law establishes that a bankruptcy request must be filed where the debtor's headquarters, or most of his operations, are located.

We start by documenting a set of descriptive statistics about the behavior of bank credit of bankrupt firms before and after the filing date. First, the decreasing tendency of total debt together with an increasing number of new contracts suggest that renegotiations with debt haircut take place during the reorganization procedures. Second, comparing firms that end up recovered to firms that end up liquidated, we find that, at the moment of filing, the recovered firms are bigger, have larger debt, lower share of unsecured debt and lower share of delinquent debt. Additionally, after around 1.5 year after the request, the share of delinquent debt of recovered firms starts a decreasing tendency, what might reflect the success of the firm at overcoming the financial distress. In the other hand, for the liquidated firms, the share of delinquent debt has an increasing tendency during all the period analyzed, reaching close to 100%.

In the main empirical analysis we exploit the high variation on the congestion of courts across municipalities of the state of São Paulo to analyze the effects of court congestion on the resolution of reorganization cases. First, exploiting the judges' final decisions for a sample of the cases, we do not find significant effects of court congestion on the probability that a firm ends up recovered in a reorganization case. However, these results cannot be conclusive that there is no causal relation between these two variables. The congestion of civil courts is not randomly assigned across the municipalities, what generates concerns that other characteristics related to an endogeneous sorting of better firms to municipalities wiht less congested courts might drive the results. If that's the case, it would be more likely that firms located in municipalities with less congested courts overcome the financial distress that made them request the reorganizaton and, utlimately, have the recovery granted by the court as resolution of the case.

In order to attempt to assess causality, we implement an instrumental variable ap-

proach, based on Ponticelli and Alencar (2016), that exploits the organization of the Brazilian judiciary to create a measure of potential extra jurisdiction of each judicial district. It corresponds to the number of neighboring municipalities that do not meet the requirements by state law to become a seat of an independent judicial district. The cases originated in their boundaries are assigned to one of its neihgboring judicial districts, potentially increasing the level of congestion of its courts. This measure of potential extra jurisdiction is strongly correlated to the average level of congestion of the courts of a judicial district and is not correlated to characteristics of firms that requested reorganization. For these reasons, we argue that it is a good candidate for instrument.

Exploiting this measure as a proxy of the level of congestion of the courts, we find that firms operating in municipalities with a higher potential extra jurisdicition have a lower probability of being liquidated in a reorganization case. One possible mechanism is that the lower liquidation payoff in those municipalities might lead the creditors to be less prone liquidating the firm and, for that reason, more prone to accept a reorganization plan with higher haircuts of the original debt. The lower renegotiated debt, by its side, increases the chances that the firm overcomes from its financial distress and end up recovered in the procedure. In section III we present a theoretical framework discussing this mechanism.

For a larger sample of reorganization requests, we exploit the RAIS dataset to create an alternative measure as a proxy for the resolution of reorganization cases. We track the firms until five years after the bankruptcy request and check whether it is still found or not in RAIS. If the firm exits from RAIS, we use this information as a proxy for its liquidation. We also do not find significant effects of court congestion on the probability of exit from RAIS. Using our instrument for court congestion, we find that firms operating in municipalities with a higher potential extra jurisdiction have a lower probability of exit the RAIS up to five years after the reorganization request. This result goes in the same direction as the effect estimated for probability of liquidation.

Additionally, we create a third measure related to the resolution of bankruptcy cases and that exploits, once more, the RAIS dataset. Conditional on the firm exiting from RAIS, we compute (for both reorganization and liquidation requests) the number of years that it took since the bankruptcy request until the exit. We interpret this measure as a proxy for the time it takes, on average, to effectively liquidate a firm in a municipality. Applying the instrumental variable approach, we find that, for firms that exit from RAIS after a reorganization or liquidation request, it takes longer to exit since the request in municipalities with more congested courts.

The results found in this paper suggests that the lower expected recovery in liquidation caused by the congestion of the judiciary affects the resolutions of bankruptcy cases. Firms are more successul in avoiding liquidation if the courts are more congested. In this sense, this paper brings evidence of one of the possible mechanisms on how the quality of court enforcement affects the outcomes of bankruptcy systems.

This paper is more directly related to an extensive theoretical and empirical literature that studies the optimal design and frictions of bankruptcy systems. This literature has found evidence that, in the presence of frictions that affect the sale of assets, liquidation of a firm may be suboptimal and a reorganization procedure can lead to more efficient ex-post outcomes[1]. Bernstein et al. (2019) exploit the random assignment of judges to reorganization cases in U.S. and invetigate the consequences of liquidating or granting the reorganization to a firm on the allocation and utilization of real estate assets. They find that the long-run utilization of assets of liquidated firms is lower relative to assets of reorganized firms and that these effects are concentrated in thin markets with few potential users, in areas with low access to finance, and in areas with low economic growth. These results suggest that, particularly in the presence of frictions - specifically, search and financial frictions -, the resolution of a reorganization case may affect the asset allocation and utilization[2]. This paper brings evidence that the presence of frictions can affect the resolution itself. Exploiting variation in one type of friction that affects the sale of assets - the level of inefficiency of the courts -, we find that the resolution of a reorganization procedure will less likely be the liquidation of the firm where the courts are less efficient.

This paper is also related to the incomplete contracting literature, which brings evidence on the role of liquidation values on financial negotiation. Shleifer and Vishny (1992), focusing on the potential buyers of assets as one of the determinants of liquidation values of assets and exploring variation across U.S. industries and over the business cycles, find evidence that higher liquidation values of assets increase debt capacity ex-ante[3]. Benmelech and Bergman (2008) investigate the relation between liquidation values and debt renegotiation by analyzing lease contracts of U.S. publicly traded airlines and exploring measures of fleet redeployability as a source of variation in liquidation values. They find evidence that airlines are able to renegotiate their lease obligations downward when the liquidation value of their fleet is low and their financial position is poor. In this paper we explore the quality of couert enforcement as a source of variation in liquidation values and we find that the lower liquidation values in less efficient courts lead to a lower probability of liquidation of a firm under reorganization. We argue that the main driver of this result is via the higher debtors' bargaining power ex-post reorganization request.

This paper is also related to the literaure on the relationship between law and finance, which brings evidence of negative effects of low court enforcement on credit access. Jappelli et al. (2005) find that credit is less widely available in the Italian provinces where the time in court of legal procedures or the backlog of pending procedures are higher.

[1]Examples in the theoretical literature: Bebchuk (2001)); Aghion et al. (1999); Shleifer and Vishny (1992); Araujo and Funchal (2013); Araujo and Ferreira (2017).

[2]Other examples in the empirical literature: Chang and Schoar (2013); Benmelech and Bergman (2011); Strömberg (2000).

[3]See also: Aghion and Bolton (1992); Hart and Moore (1998); Benmelech and Bergman (2008).

Ponticelli and Alencar (2016) also exploited variation on the backlog per judge across municipalities to analyze heterogeneous effects of the Brazilian bankruptcy law reform. They find that firms operating in municipalities with less congested courts experienced, after the reform, larger increase in secured loans to manufacturing firms, as well as larger increase in investment and value of output[4]. This paper contributes to this literature by bringing evidence of one mechanism ex-post defult of how judicial inefficiency affects the effectiveness of the protection brought by the bankruptcy law. As the liquidation payoff is lower in less efficient judicial districts, firms operating in those places are less often liquidated.

This paper is organized as follows. Section II describes the Brazilian bankruptcy system. Section III presents a theoretical framework to describe how judicial inefficiency can affect the debt renegotiation and the resolution of a reorganization procedure. Section IV describes the data sources and presents a set of descriptive analysis. Section V presents the empirical strategy and the results. Section VI concludes.

II The Brazilian Bankruptcy System

Bankruptcy procedures can be broadly classified into two main categories: liquidations and reorganizations. The Brazilian Bankruptcy Law of 2005 contains both procedures.

Liquidations are usually requested by creditors (although rare, they can also be requested by the debtors). Following the filing, the request can be dismissed by the court and there are mainly four situations in which this can occur: (i) the debtor pays the claim; (ii) the creditor and the debtor come to an agreement; (iii) the creditor gives up of the claim; or (iv) the court accepts a reorganization request by the debtor. In the case that the request is not dismissed, the court accepts it and a liquidation procedure starts. The firm is, then, shut down, its assets are sold in auctions promoted by the court and the creditors are paid following the absolute priority rule established by law: (i) labor claims (up to 150 minimum wages); (ii) secured credits; (iii) tax claims; and (iv) unsecured credits.

Reorganizations, introduced by the bankruptcy law reform of 2005 and much inspired in the Chapter 11 of U.S. Bankruptcy Code, are an attempt to allow viable firms in financial distress to stay as going concerns, to restructure their financials and to overcome their liquidity and solvency problems. The law establishes time frames for the procedure, as shown in figure I. First, following the filing of the reorganization request, the judge decides to accept or to reject it. The decision should be mainly based on the compliance or not to minimum requirements established by law to file for reorganization, not on economic viability - which should be evaluated in a later stage with the participation

[4]Other examples are: Chemin (2012); Visaria (2009).

of creditors. The creditors do not participate of this first decision. If the request is accepted, to avoid a run on the assets and enable an effective recovery, the law establishes an automatic stay on the assets of the firm, what prevents creditors from collecting the debt from the bankrupt firms[5].

[Insert Figure I Here]

Second, the firm has 60 days to present a detailed reorganization plan to avoid the automatic liquidation. The plan must contain: (i) a detailed strategy for the recovery of the firm (debt renegotiation offers to all its creditors, divestment of assets, payment of past due labor costs, labor force downsizing, new credit demands (*Debtor-in-Possession* (DIP) Finance) with details on how it will be invested etc.); (ii) economic and financial estimates of its long term economic viability under the proposed terms; and (iii) the presentation of an independent appraisal report with the estimated value of the existing assets. The credits under reorganization, and with voting rights about the reorganization plan, are classified in four classes: (i) labor claims; (ii) secured credits (subject to automatic stay); (iii) unsecured credits; (iv) micro and small businesses[6]. The renegotiation offers in the reorganization plan cannot favor differently creditors of the same class[7].

Third, following the plan submission, the creditors have 30 days to declare, individually, their agreement or disagreement with the terms of the proposed plan. To make his decision, each creditor compares his expected recoveries in the two scenarios. The trade-off is between accepting a debt renegotiated downward, and expecting the firm effective recovery, and reject it for a chance to recover all the original debt in a liquidation procedure. In case the plan is not approved unanimously by all creditors, a Creditors' Committee meeting is scheduled to vote on the plan[8]. If rejected by the Committee, the judge declares the liquidation of the firm. If approved, the judge grants the reorganization to the firm and the implementation of the plan starts[9]. If, after a period of two years,

[5]There are some exceptions that, according to the law, are not subject to the automatic stay of the reorganization procedure, with its previously contracted conditions prevailing. That's the case of leasings, fiduciary alienations (*alienações fiduciárias*) of collaterals and lines of credit secured by accounts receivables (such as discounts of bonds, advances on currency exchange contracts and advances in credit card bill). Nevertheless, in the first 180 days the creditors holding these types of credit are forbidden to sell assets considered 'productive capital goods' essential to the operations of the firm, such as a productive plant or an essential equipment for its effective recovery.

[6]Creditors not subjetc to the automatic stay don't have right to vote on the reorganization plan submitted by the debtor, but have veto powers in the case it proposes the sale of collaterals supporting their credits.

[7]The exceptions admitted are in the cases of creditors that keep supplying the firm during the reorganization.

[8]In principle, the law regulates that the time between reorganization request and the Creditors' Committee, as well as the period of protection of essential productive assets that are collaterals of credits not subject to the automatic stay, should be at most of 180 days. However, in practice these deadline is frequently extended and the procedures last much longer.

[9]In order to be granted the reorganization to the firm after the submission of the plan, the plan must be approved by majority in all of the four classes with right to vote. The law establishes some specific

all the specified terms in the plan are accomplished (although new renegotiations with the creditors in the future are possible), the judge declares the end of the reorganization and the firm is considered 'recovered'. Otherwise, the firm is liquidated during the implementation.

Hence, after submitted the reorganization plan by the debtor, each creditor decides to approve it, with the debt renegotiation, or reject it, with a chance of recovering all the original debt in a liquidation procedure. However, in case of liquidation, the firm stops operating and the procedure is entirely dealt by the court, without active participation of the creditors. Inefficient courts tend to be slow on the auctions of assets in a liquidation procedure, decreasing firm liquidation value, through the depreciation of unsold non-operating assets, and, ultimately, creditors' expected recovery in firm liquidation. A crucial point is that it is not possible to choose in which court to file for a bankruptcy request. The law establishes that it must be filed in the municipality where the debtor's headquarters, or most of his operations, are located.

In section III we present a simple theoretical framework illustrating the expected effects of inefficient courts on the resolutions of a reorganization procedure. Exploring the data sources presented in section IV, we analyze empirically this relationship in section V.

III Theoretical Framework

This section presents a simple theoretical framework illustrating the effects of liquidation values on debt renegotiation during a reorganization procedure and on its consequent probability of recovery in the end of the procedure. In this framework we introduce heterogeneity in liquidation values through variation in the efficiency of local judicial institutions on the procedures of liquidation. We focus at analyzing the decisions of debtor and creditors concerning the renegotiation offers contained in the reorganization plan, when it is held the main negotiation in a reorganization procedure. From this framework, we derive implications to be tested empirically.

Consider a firm that requested the reorganization and has to submit a plan to its J creditors. The firm's total debt is denoted by the vector $D_t = (D_{1t}, ..., D_{Jt})$, where t indexes the year of the reorganization request. The reorganization plan contains offers of renegotiations to the J creditors, denoted by $D'_t = (D'_{1t}, ..., D'_{Jt})$. If the plan is rejected by the creditors, the firm is liquidated, the assets are sold by the court and the creditors are paid following the absolute priority rule and until the end of the value obtained from the assets' auctions. We assume that no value is left for the shareholders of the firm, that have a zero payoff in case of liquidation. Then, the firm submits a reorganization plan

situations in which the judge can still grant the reorganization, even if the plan has not been approved (called *cram-down*), which can happen if the plan was approved, cumulatively, by: (i) creditors present in the meeting that represent more than 50% of total credit value - independent of the class; (ii) half of the classes represented; and (iii) more than 1/3 in the classes in which it was rejected.

that maximizes the chance of approval and its expected profit. In case of approval, the expected profit of the firm under reorganization is given by:

$$E[\pi(Y_t, D'_t)] = p(D'_t)[Y_t - \sum_{j=1}^{J} D'_{jt}]$$

where Y_t denotes the present value at t of firm output net of production costs, $\sum_{j=1}^{J} D'_{jt}$ the sum of the present value of the renegotiated debt with the J creditors and $p(D'_t)$ the probability of firm recovery from the financial distress given the plan approval with the renegotiated debt D'_t. With probability $1 - p(D'_t)$, the firm does not succeed in the plan implementation and is liquidated, what gives a zero payoff to the shareholders.

Once the debtor submits the reorganization plan, each of the J creditors analyzes it and has to decide individually either to accept or reject it. The creditor j's trade-off is between the firm continuation with debt renegotiation - and expecting firm's recovery - and the firm liquidation with a chance to recover the original debt, without haircuts. The creditor decides to approve the plan if his payoff with firm continuation is higher than with firm liquidation.

As described in section II, the plan is approved by the rule of majority defined by the bankruptcy law. Conditional on the plan not having been approved by the majority of creditors, the creditor j's payoff in case of firm liquidation is given by:

$$ER_{jt}^{LIQ}(D_t, \psi_m) = Min \left\{ D_{jt}, [(1 - \psi_m) \cdot LV_t] - \sum_{h=1}^{H} D_{ht} \right\}^{+}$$

where D_t denotes the present value of the debt of the firm with creditor j, ψ_m the congestion level of courts in judicial district m - in which the reorganization procedure is conducted - and LV_t the liquidation value of the assets of the firm. The second term in braces on the right-hand side of the equation describes that the creditor j is paid after the court sells all firm's assets at market value (LV_t) and pays first all the H creditors with higher priority. The level of inefficiency of the court (ψ_m) on dealing with liquidation procedures decreases the value obtained to pay the creditors. The lower the priority of the creditor, the lower the firm liquidation value or the higher the court congestion, the lower the likelihood that the creditor will recover all the debt. The maximum the creditor expects to obtain is the total debt of the firm at t (D_{jt}) and the minimum is zero: $0 \leq ER_{jt}^{LIQ}(D_{jt}, \psi_m) \leq D_{jt}$.

From the equation above, we can derive that, the higher the court congestion, the lower the creditor's payoff in firm liquidation:

$$\frac{\partial ER_{jt}^{LIQ}(D_{jt}, \psi_m)}{\partial \psi_m} < 0$$

for given D_{jt}, LV_t and $\sum_{h=1}^{H} D_h$, and if $ER_{jt}^{LIQ}(D_{jt}, \psi_m) < D_{jt}$.

Alternatively, creditor j can decide to approve the reorganization plan submited by the firm and, conditional on the plan being approved by the majority of creditors, its payoff is given by:

$$ER_{jt}^{CONT}(D'_t, \psi_m) = p(D'_t) \cdot D'_{jt} + [1 - p(D'_t)] \cdot ER_{jt}^{LIQ}(D_t, \psi_m)$$

where, with probability $p_t(D'_t)$, the firm recovers from the financial distress and repays the renegotiated debt D'_{jt} to creditor j (at present value), and with probability $1-p_t(D'_t)$, the firm is not successful in the plan implementation, is liquidated and the creditor's expected recovery in this liquidation procedure is $ER_{jt}^{LIQ}(D_t, \psi_m)$. For ease of simplification, we consider that the creditor j's expected recovery in firm liquidation after the plan is approved and the firm is not successful in the implementation is the same as the expected recovery in the case that the firm is liquidated at the moment of the voting of the plan by the creditors. Then, creditor j votes to accept the reorganization plan if:

$$ER_{jt}^{CONT}(D'_t, \psi_m) \geq ER_{jt}^{LIQ}(D_t, \psi_m).$$

We want to analyze whether the level of inefficiency of the court affects the creditor j's choice between approving or rejecting the plan. Consider the scenario where $ER_{jt}^{LIQ}(D_{jt}, \psi_m) < D_{jt}$, in which: (i) ψ_m deteriorates $0 < ER_{jt}^{LIQ}(D_{jt}, \psi_m)$; and (ii) rejecting the plan is not strictly dominant for creditor j, as the creditor would expect to recover all the original debt in liquidation. We are interested on focusing on the cases where there is a trade-off about accepting or not the plan and the inefficiency deteriorates the firm liquidation value. Additionally, to simplify the analysis, assume that the creditor j is the only creditor of the firm. Hence, in equilibrium, the debtor makes a renegotiation offer D'_{jt} that makes creditor j indifferent between accepting or rejecting the plan. It means that the participation constraint, described by the previous equation, is binding in equlibrium:

$$p(D'_t) \cdot D'_{jt} + [(1 - p(D'_t))] \cdot ER_{jt}^{LIQ}(D_{jt}, \psi_m) = ER_{jt}^{LIQ}(D_{jt}, \psi_m)$$

Rearranging the equation above:

$$p(D'_t) \cdot [D'_{jt} - ER_{jt}^{LIQ}(D_t, \psi_m)] = 0$$

Assuming differentiability, by applying the implicit function theorem to the above equation, we can obtain the derivative of D'_{jt} with respect to ψ_m at optimum:

$$\frac{\partial D'_{jt}}{\partial \psi_m} = -\frac{-p(D'_t)\frac{\partial ER^{LIQ}_{jt}(D_t,\psi_m)}{\partial \psi_m}}{\frac{\partial p(D'_t)}{\partial D'_{jt}} \cdot [D'_{jt} - ER^{LIQ}_{jt}(D_t,\psi_m)] + p(D'_t)}$$

We now analyze each of the terms of the derivative above. First, by definition, $0 \leq p(D'_t) \leq 1$. Second, $\frac{\partial p(D'_t)}{\partial D'_{jt}} < 0$: the higher the (renegotiated) debt, the lower the probability of the firm to overcome the financial distress and be capable of repaying the debt. Third, as we assumed that $ER^{LIQ}_{jt}(D_{jt},\psi_m) < D_{jt}$, we have that $\frac{\partial ER^{LIQ}_{jt}(D_t,\psi_m)}{\partial \psi_m} < 0$. Finally, as the renegotiation offer makes the creditor exactly indifferent between accepting or rejecting the plan, we have: $D'_{jt} - ER^{LIQ}_{jt}(D_t,\psi_m) = 0$. Hence, we have that:

$$\frac{\partial D'_{jt}}{\partial \psi_m} < 0$$

All else equal, the higher the inefficiency of the court on liquidation procedures, the lower the renegotiated debt in equilibrium. This suggests that a debtor's bargaining position to lower the original debt is higher in less efficient courts. And, as described above, the lower the renegotiated debt, the higher the probability of recovery of the firm in the reorganization procedure and the lower the probability of being liquidated. Hence, we have that, in equilibrium:

$$\frac{\partial p(D'_{jt})}{\partial \psi_m} > 0.$$

In section V we test empirically the theoretical prediction from this simple framework. Next section presents the data sources used in the empirical analysis.

IV Data

IV.A Data Sources

This paper uses four main data sources. First, we build a data set containing extracted information about bankruptcy cases in the state of São Paulo between 2000 and 2015. Second, we use data on bank loans from the Credit Information System (SCR) of the Central Bank of Brazil to collect information on the credit to the bankrupt firms. Third, we use the employer-employee dataset Relação Anual de Informações Sociais (RAIS), from Brazilian Ministry of Labor (MTE), covering all formal workers in Brazil since 1985, and we collect information about the employees of the bankrupt firms. And fourth, we collect data on court productivity from CNJ to create a measure of court congestion.

IV.A.1 Bankruptcy Data

The primary source of data used in this paper comes from Tribunal de Justica de São Paulo (TJSP), which stores information about all judicial cases under the responsibility of Brazilian state courts, including updates since the day it starts. We received from TJSP a list of all 7,133 bankruptcy filings in the state of São Paulo between 2000 and 2015 and manually extracted registration information (such as firm name, claimant, judicial district, judge and filing date) and updates (until December 2017) on the cases, including judges decisions.

From the name of the bankrupt firm found in the extracted data, we match to RAIS to collect their CNPJs (Brazilian social security number). For the cases not matched (either because of spelling differences or because the firm was not found at RAIS), we manually extracted the CNPJs.

IV.A.2 Bank Credit Data

We use the Sistema de Informações de Credito (SCR) of the Central Bank of Brazil to collect information on bank loans of the bankrupt firms. This dataset includes all loans above 5,000 BRL issued by financial institutions operating in Brazil since January 2003. Information on each loan are transmitted monthly and include: type of credit, debt value (total and delinquent), interest rate, maturity, collateral, credit risk score etc.

We merged by CNPJ the data on bankrupt firms to SCR and found 83% of them at anytime in all the available years.

IV.A.3 Employer-Employee Data

We use the Relação Anual de Informações Sociais (RAIS) of the Ministry of Labor and Employment (MTE) of Brazil to collect information about the firms and their workers. RAIS is collected annually since 1985 and contains information on employer-employee relationship. The government requires it to cover the formal workers of all firms. The RAIS reports include information regarding the firm (such as sector of activity, foundation and location), the worker (gender, date of birth, educational level etc.) and the employment (such as wage, occupation type, start/ending dates and layoff reason).

We merged by CNPJ the data on bankrupt firms to RAIS and found 98% of them at anytime in all the available years. We use it to follow the evolution in firm size of the bankrupt firms and also to follow the workers from those bankrupt firms overtime.

IV.A.4 Court Productivity Data

The main court enforcement measure explored in this paper is created based on the data extracted from *Justiça Aberta* website, which records monthly reports on productivity of every court of Brazil since January 2009. For each court, following the same

definition as in Ponticelli and Alencar (2016), we compute a measure of congestion as the number of pending cases in the beginning of the year divided by the number of judges working in the court in the same year (backlog per judge). As bankruptcy cases are filed in civil courts of first instance, we focus on these courts. For judicial districts with more than one civil court of first instance, we compute the average of court congestions weighted by the number of pending cases. In the judicial districts where it exists a specialized bankruptcy court, we consider only those. In the case of the state of SP, only the municipality of São Paulo has specialized bankruptcy courts. The measure of court congestion for this judicial district is computed as the weighted average of the congestion in these (three) courts, not taking into consideration the other civil courts of the district. As we can see in figure II, the judicial districts in SP are very heterogeneous in terms of court congestion .

[Insert Figure II Here]

In this paper, as we don't have information on court productivity before 2009 and we explore bankruptcy requests since 2000, we focus on the measure of court congestion at the beginning of 2009 (as in Ponticelli and Alencar (2016)). We show in collumns 3 and 4 of table I that it is highly correlated to the court congestion measure of 2016 - even after controlling for other municipality characteristics (average income per capita, bank branches per 100,000 inhabitants and industry share in local GDP) -, indicating that it ranks the judicial districts in terms of court congestion similarly in both periods. The coefficient of the relationship between the two measures is positive and significant at 1%

[Insert Table I Here]

The measure of court congestion at 2009 is also highly correlated to years in court of liquidation cases, as shown in collumns 1 and 2 of table I and in figure III. The relationship between the two variables is positive and significant at 1%, indicating that the average court congestion of a judicial district is a good predictor of the average number of years that a court of this district deals with a liquidation procedure until conclude it. The relationship remains significatn at 1% after controlling for municipality characteristics. The measure of years in court can be considered as a proxy of the level of efficiency of the courts of a judicial district on liquidation procedures.

[Insert Figure III Here]

To create the measure of years in court, we followed the judges decisions of each liquidation request since the filing date until December 2017 (the date of last update of downloading the decisions), identified if it was concluded and computed how many years it lasted. The measure presented above considers only the requests filed before 2009 (or

until December 2008). The main reason we don't use the measure of years in court as the measure of quality of court enforcement in our empirical analysis is because many of the judicial districts represented in our bankruptcy data do not have any request (or have very few) filed before 2009 and concluded by December 2017.

IV.B The Resolutions Outcomes

IV.B.1 Resolution of a Reorganization Procedure

From the text of judges decisions extracted from the website of TJSP, we are able to track the timeline of the reorganization procedures, as described in section II. In particular, we are interested in identifying their resolutions and the time it took to end the case. In this version of the paper, we have the resolutions identified for a sample of 370 reorganization requests, filed between June 2005 and January 2010 and with the judges decisions tracked until December 2017. We are currently in the process of extending the identification of the resolutions (as well the whole timeline of events of the procedure) for the rest of the requests in the dataset.

In figure **??** we show the frequencies of each possible resolution or status (at December 2017) for this sample, and the average years in court until the conclusion of the case. The figure shows that: (i) 10.8% of the requests ended with the firm having the recovery granted; (ii) 27.3% with the firm being liquidated; (iii) 12.43% were rejected at filing by the judges; (iv) 19.73% were dropped out by the requester or ended without a resolution; (v) 18.11% had the plan approved by the creditors and are in the stage of implementation; and (vi) 11.63% are in a the stage before the plan voting. Considering only the requests concluded, in 15% the firm had the recovery granted and in 39% was liquidated. And if we take just the requests concluded with the recovery or the liquidation of the firm, in 28% of them the firm had the recovery granted and in 72% was liquidated. In our empirical analysis, in section V, we use both the whole sample and the restricted sample only with recoveries and liquidations.

[Insert Figure **??** Here]

Additionally, we can notice in figure **??** that the cases take, in average, much longer than the stipulated by law, as described in section II. In principle, if the deadlines of all stages were accomplished without extensions, it shouldn't take longer than 2.5 years to conclude a case, being the firm recovered or liquidated. In the case of rejected filings or dropouts, it shouldn't be longer than six months.

IV.B.2 Firm Exit from RAIS

We exploit the RAIS dataset to create an alternative measure for the resolution of the reorganization cases. We track the firms since one year before the reorganization request

until the last year available, 2016. If the firm *disappears* from the RAIS dataset (i.e., if it can't be found at year 2016), we say that it exited from RAIS. We are going to exploit this measure as an *imperfect* proxy of the liquidation or not of the firm after a bankruptcy request (either reorganization or liquidation).

It is imperfect, because, if the firm is out of RAIS, not necessarily it shuts down and is out of market. It is common that firms in financial distress do not report to RAIS for one or more years, even if they are operating. And we see this behaviour in our dataset on bankrupt firms. So, to mitigate this limitation, we create an alternative measure considering that the firm exited if five years after the bankruptcy request it didn't report to RAIS. It means that it considers that it exited if the last report was at any year between the year of request and five years later. We test both in approaches in the empirical section.

As the last year observed at RAIS is 2016, the second approach restricts our sample to the bankruptcy requests filed up to 2011 and the variable exit from RAIS assumes the value of 1 if the last report of the bankrupt firm was up to five years after the request. We have 524 reorganization and 3090 liquidation requests filed until 2011. The shares of firms that exited from RAIS up to five years after the request are of 33%, for reorganizations, and 68%, for liquidations[10].

IV.B.3 Years between Bankruptcy Request and Exit from RAIS

We create a third measure related to the resolution of bankruptcy cases and exploiting, once more, the RAIS dataset: conditional on the firm exiting from RAIS, we compute the number of years it took since the bankruptcy request. We use data not only on reorganization requests, but also on liquidation requests. We interpret this measure as an *imperfect* proxy for the time in court that it took to liquidate and shut down a firm following a bankruptcy request.

IV.C Descriptive Analysis

In this section we document the characteristics of firms that filed for bankruptcy in the state of São Paulo between 2005 and 2015, showed in table II. In panel A we consider the entire sample; in panel B only the firms identified as recovered; and in panel C the firms identified as liquidated.

[Insert Table II Here]

Next we document the behavior overtime of bank debt and delinquency rate of firms that request reorganization since 15 months before until 42 months after filing. Figure

[10] As described in section II not all liquidation requests end up with the liquidation of the firm. The request may be resolved with the payment of the claim by the debtor or an agreement between creditor and debtor, for example.

IV shows the average evolution of two indicators of bank debt: total debt (all contracts active each month relative to filing date) and new debt (only contracts started after filing). Regarding total debt, the graph indicates that around 12 months before filing the debt of these firms starts to decrease and remains decreasing until 42 months after the filing - with a steeper drop closer to filing. In the other hand, new debt is continuously increasing, indicating an increasing number of new contracts signed. Most of renegotiations between debtors and banks - specially related to haircuts of the original value - lead to the extinction of original loan contracts and the generation of new ones. These situations are in principle not directly identifiable in the SCR data, what makes renegotiations and DIP Finance (new credit during the reorganization) indistinguishable within the new debt. The decisions of banks to renegotiate original debt and to give new credit during reorganization might have different drivers and be affected differently by firm-level frictions, such as local judicial inefficiency. And, ultimately, those decisions have important impacts on the bankruptcy outcomes, such as the resolution of the case. But, the combination of declining total debt and increasing new debt may indicate that renegotiations with haircuts are taking place during the period.

[Insert Figure IV Here]

Restricting the analysis only to recovered and liquidated firms, we can see in figure **??** that the debt also decreases overtime for the liquidated firms, but, for the recovered, it seems to stabilize at around 18 months after filing. One possible explanation is that the firms that end up recovered have access to new credit.

[Insert Figure **??** Here]

Analyzing the behavior separately for the three credit types (secured not subject to automatic stay, secured subject to automatic stay and unsecured), figure **??** exhibits a different behavior for the unsecured credit: differently from the two types of secured credit, the unsecured debt stops decreasing close to filing, starts to increase after it and starts to decrease again around two years later.

One possible explanation for this behavior is that new credit of this type is granted by banks to the bankrupt firms after the filing. Distressed firms typically need new money to be successful in their recovery. Collateralized debts are usually prefered, as they are cheaper, but it is very likely that these firms do not have any available assets to use as collaterals at the time of bankruptcy request. The more expensive unsecured credit may be the only alternative, specially in the short term, before the end of negotiations with the creditors and the beginning of the implementation of the recovery plan.

[Insert Figure **??** Here]

Figures V, VI and VII exhibit, for the three types of credit, the trajectories of the original debt at the time of filing relative to the total debt (they are equivalent before the filing date). In the three cases the original debt follows a similar tendency as the total debt. For the secured credits, the decreasing tendency and the increasing distance between the two curves for around the first 18 months of the procedure might suggest that old contracts are liquidated during this period and new renegotiated ones are generated. For the unsecured credit, as total debt, the original debt has an increasing tendency for about 18 months, but also an increasing distance from its trajectory for this period.

[Insert Figure V Here]

[Insert Figure VI Here]

[Insert Figure VII Here]

Figures **??**, **??** and **??** compare the debt overtime between recovered and liquidated firms for the three types of credit. Analyzing the secured credit not subject to automatic stay, in figure **??**, we can notice a steeper decrease in total debt close to reorganization filing and a stronger decresing tendency during the reorganization procedure for the firms that end up liquidated. The firms that end up recovered might be more able to keep the collaterals underlying these credits. For the secured credit subject to automatic stay, as shown in figure **??**, both recovered and liquidated firms have a decreasing tendency of the debt of this type. In the case of unsecured credit, as shown in figure **??**, the behavior of the debt is very different. For the liquidated, it is the only type of credit that do not have a decreasing tendency. It is stable over the period prior to bankruptcy filing, has an increasing tendency until around two after and then stabilizes. For the recovered firms, it has a decreasing tendency prior to filing and increasing until two years after. The increasing tendency of this type of credit for both recovered and liquidated firms might be consequence of either the higher interest rates of the unsecured credit, making increase the original debt, or new money that these firms are borrowing. However, for the recovered firms, after two years the unsecured credit decreses. This might be caused by these firms starting to have acess again to secured credit over time, as they evolve in the restructuring of their financial, and become less dependent of this more expensive type of credit.

[Insert Figure **??** Here]

[Insert Figure **??** Here]

[Insert Figure **??** Here]

Finally, figures **??**, **??** and **??** shows the evolution of the share of delinquent debt for, respectively, all firms under reorganization, the recovered and the liquidated firms. The share of delinquent debt exhibits, on average, an incresing tendency over time, with a steeper increase in the first six months after filing, what might me as consequence of the automatic stay after the reorganization request and the suspension of collection by creditors. For the liquidated firms, we observe the same tendency, but at a higher level, reaching close to 100% of delinquent debt. In the case of the recovered firms, after around 1.5 year after the request, we obsrve a reversal in the tendency of the share of delinquent debt. It starts a decreasing tendency, what might reflect the success of the firm at overcoming the financial distress.

[Insert Figure **??** Here]

[Insert Figure **??** Here]

[Insert Figure **??** Here]

V Empirical Analysis

In this section we investigate empirically whether the congestion of courts affects the resolution of a bankruptcy case. In section V.A we describe the empirical design. Section V.B discusses endogeneity concerns about the measure of court congestion. Section V.C describes an instrumental variable approach to attempt to assess causality. Section V.D presents the results of the estimation for the three resolution outcomes. Finally, section V.E presents robustness analyses.

V.A Empirical Design

In this section we describe the empirical design to investigate the effects of court congestion on bankruptcy resolutions.

For reorganization requests, we explore three different outcomes. First, for the subsample of requests filed between June 2005 and January 2010, we extract judges decisions up to December 2017 and identify whether the case is concluded and its resolution. In particular, we are interested in whether the firm is liquidated or not. Second, as a *proxy* for liquidation and firm closure, exploring the RAIS dataset for the full sample of reorganization requests from June 2005 until December 2015, we identify whether the firm exited from RAIS or not up to five years after filing for reorganization. And third, for the firms that exited from RAIS, we compute the number of years it took to exit since the reorganization request.

For liquidation requests, we also explore this third outcome for the firms that exited from RAIS up to five years after filing. To mitigate selection, we analyze them separately from reorganization requests. Firms that have the liquidation requested by a creditor may have worst prospects and this might affect the time it takes for firm closure and exit of the market, even conditioning on firms that exited at some point. Firms that request reorganization have a chance to restructure their financials. For those that do not succeed and end up exiting the market, it might take longer than for firms that have the liquidation requested.

To estimate the impact of court congestion on the three outcomes described above for bankruptcy resolutions, we use the following baseline specification:

$$Y_{jmt} = \alpha + \beta \cdot \psi_m + \theta \cdot Z_m + \gamma \cdot X_{jt} + \epsilon_{jmt},$$

where j indexes a firm, m the judicial district where the firm i is located and t the year when the firm i files for reorganization. The dependent variable Y_{jmt} is one of the three outcome variables: (i) it equals to 1, if the case ends with the liquidation of the firm, and 0 otherwise; (ii) it equals to 1, if the firm exits from RAIS up to five years after filing, and 0 otherwise; or (iii) it equals, conditional on the firm exiting from RAIS, to the years between the bankruptcy request and the firm exit. The variable ψ_m denotes the average congestion level of courts in judicial district m. We also run specifications adding as controls: firm characteristics at filing (such as number of employees, share of delinquent debt and total debt), denoted by X_{jt}; municipality characteristics (such as income per capita, bank branches per 100,000 inhabitants and share of manufacturing sector in total GDP), denoted by Z_m; and fixed effects (filing year and 2-digit CNAE sector), denoted by α. We are interested in estimating β, which captures the impact of the average court congestion in a judicial district on the bankruptcy resolution outcomes, after controlling for a set of firm and judicial district characteristics.

The 645 municipalities in the state of São Paulo are organized in 320 judicial districts, each of them with at least one civil or specialized bankruptcy court[11]. A bankruptcy request must be filed where the firm in financial distress has its headquarters or most of its business. Once the filing is made in a particular judicial district, court and judge assignment is random[12]. In all regressions we cluster standard errors at the judicial district level to account for any correlation within the cases dealt by the courts of the district.

[11]Many of the 320 judicial districts do not have register of any bankruptcy request filed between 2000 and 2015. For reorganization requests, we observe in the data 145 different judicial districts; for liquidation requests, 185.

[12]For example, the municipality of São Paulo (capital and largest city of the state of São Paulo) is the only one in the state to have specialized bankruptcy courts; it has three and the bankruptcy request filed is randomly assigned to one of these courts. The municipality of Barueri does not have specialized courts; it has six civil courts and the bankruptcy request is assigned to one of them.

V.B Endogeneity Concerns

There are some endogeneity concerns related to the use of court congestion as a measure of the quality of court enforcement. The congestion of civil courts is not randomly assigned across Brazilian judicial districts and might be unobservables correlated to it that can affect the estimates of its impacts on bankruptcy resolutions.

The level of congestion of courts can reflect the overall quality of local institutions. Municipalities with better institutions, composed of a more qualified judicial staff, might be more efficient, conduct faster the legal procedures and then have a lower level of congestion. And a higher quality of institutions can potentially generate an endogeneous sorting of firms over time and bias the results. Better firms can choose to settle in more favorable business environments and the quality of the institutions is a factor that affects it. As a consequence, in municipalities with less congested courts, we would observe firms more productive, better managed and with better financial statements. Thus, those firms would be more likely to recover from a financial distress and not being liquidated in a reorganization procedure - or shutting down and exiting from RAIS. This effect would, then, bias upward the estimates of the effects on the outcomes of liquidation and exiting from RAIS. Also, because these firms would be better at recovering from a financial distress, creditors might try longer to let the firm rehabilitate. That would make the reorganization procedures longer and, if the firm do not succeed and is liquidated, shuting down and exiting from RAIS, it will take more years since the request than in municipalities with more congested courts. This effect would bias downward the estimate of the effect of court congestion on the years between reorganization request and firm exit.

Table III shows the correlation between court enforcement measures and characteristics one year before filing of the firms that requested reorganization and characteristics of the municipalities seats of the judicial districts where the cases were filed. In collumn 2 we see that, after controlling for municipality characteristics related to the overall levels of local economic and financial development, the average wage per worker is lower in municipalities where the years in court for liquidation cases is higher. Additionally, in those municipalities, the number of bank branches per 100,000 inhabitants is lower, indicating a lower level of financial development. These correlations suggest that the firms that request reorganization in municipalities with less efficient courts might in fact be less productive and worst managed, what can, as discussed above, potentially bias the results through unobservable characteristics related to that and that might affect the outcomes of a bankruptcy case. In the case of the measure of court congestion, collumn 4 of table III shows also a negative correlation with average wage per worker, but it becomes insignificant after controlling for municipality characteristics, as shown in collumn 5. However, this collumn displays that municipalities with more congested courts have less bank branches per 100,000 inhabitants, in the same direction as for years

in court. This correlation reinforce the potential bias of worst firms in those municipalities.

[Insert Table III Here]

Table IV replicates the analysis of table III for firms that had the liquidation requested by some creditor. It displays correlations in the same direction than for firms that requested reorganization, but stronger and more significant for wage per worker, even after controlling for municipality characteristics. Collumns 2 and 5 indicate lower wages in muncipalities with less efficient courts, what might indicate that the bankrupt firms are less productive and worst managed in these municipalities. If that's the case, as discussed above, those firms might be less likely to be able to overcome a financial distress and, because of that, creditors might be less prone to renegotiate a delinquent debt. Once the liquidation is requested, it would be less likely that an agreement could be achieved, or even the debtor would be able to repay the original debt. Hence, more likely that the liquidation procedure would effectively start and the firm would shut down and exit from RAIS. So, this would bias downwards the time between liquidation request and firm exit.

[Insert Table IV Here]

In section V.C we present an instrumental variable approach to try to establish a causal relation between court congestion and the outcomes of bankruptcy resolutions.

V.C Instrumental Variable Approach

V.C.1 The Instrument

In this section we describe the construction of an instrumental variable to try to assess causality on the impact of court congestion on bankruptcy resolutions. We follow the approach developed by Ponticelli and Alencar (2016) and we exploit Brazilian state laws on judicial organization to construct the instrument.

The Brazilian states have laws to organize the territorial subdivision of their judiciary. Each state is divided in judicial districts and the laws establish minimum requirements to a municipality become a seat of a judicial district. Those requirements are based on observable municipality characteristics, such as: the population, number of voters in last election, the area in squared kilometers, the number of judicial cases originated in the municpality, the amount of tax revenue, or a combination of two or more of these characteristics. The state of São Paulo, for example, defines that, to become a seat of a judicial district, a municipality should have more than 10,000 voters in the past election. One important point to highlight is that, besides the minimum requirements, it is not automatic that a municipality becomes a seat of a judicial district after complying to them.

For a municipalitiy that do not satisfy the minimum requirements, the cases originated in its boundaries are assigned to courts of some judicial district that is territorially contiguous to it. However, if there is more than one neighbouring judicial district, these laws do not define a priori the rules to which one the jurisdiction of this municipality should be assigned. Then, the courts of municipalities that are seat of judicial districts are the potential recipients of the cases originated in neighboring municipalities that do not meet the minimum requirements to be an independent judicial district. Therefore potentially increasing the workload of existing courts of the judicial district and their level of congestion.

Hence, the instrumental variable that we create is the potential extra jurisdiction of a judicial district: it is the number of neighboring municipalities that do not meet the minimum requirements to become a seat of a judicial district. This measure depends directly on observable neighboring municipalities characteristics, as they define the minimum requirements to become or not a seat of a judicial district. For example, it is very likely that a municipality seat of a judicial district that has a large number of neighbors with small population - it is not likely they will be independent judicial districts - will have a larger potential extra jurisdiction. For that reason, in all specifications using this measure, we include average neighboring municipalities characteristics as controls. We also include the total number of neighbors. Coastal judicial districts, for example, will have less neighbors and potentially a lower potential extra jurisdiction.

V.C.2 Relevance

For the instrument to be valid, it must be a good predictor of the level of court congestion of a judicial district. As discussed by Ponticelli and Alencar (2016), in principle, a state could increase the number of judges of judicial districts to deal with the additional judicial demand coming from the neighboring municipalities that are not seats of independent judicial districts. If that's what happens, the number of municipalities that could potentially be added to the jurisdiction of a judicial district should not affect the congestion of its courts.

In table V we show the results, at judicial district level, of analyzing the relationship between potential extra jurisdiction and years in court, in collums 1 and 2, and court congestion, in collumns 3 and 4. The coefficient of potential extra jurisdiction is positve, indicating that a larger jurisdiction increases court congestion and years in court for liquidation cases. This relationship is still valid and becomes stronger and more significant (at 1%) after controlling for municipality and average characteristics of the neighbors of the judicial districts.

[Insert Table V Here]

We also analyze the first stage regressions for each of the two outcomes explored. Tables VI and VII report the first stage results of using as an outcome variable, respectively, the probability of liquidation and the probability of exit from RAIS of a firm under reorganization. As we can see, even after controlling for firm characteristics, municipality and neighboring municipalities average characteristics, the coefficient is significant at 1% and the F statistic is over the critical value of 10.

[Insert Table VI Here]

[Insert Table VII Here]

V.C.3 Exclusion Restriction

The identification strategy is designed to overcome the fact that the selection of firms into municipalities with more or less congested courts is endogeneous. For the instrument to be valid, it must not only strongly predict court congestion, but also satisfy the exclusion restriction. It means that potential extra jurisdiction should affect bankruptcy resolutions only via its impact on court congestion.

One concern is that potential extra jurisdiction might be correlated with firm characteristics prior bankruptcy and the overall level of economic and financial development of a municipality. To analyze this issue, we regress the measure against bankrupt firms characteristics one year before the request, municipality characteristics and neighboring municipalities average characteristics. The results are shown in tables VIII and IX for, respectively, the samples of reorganization and liquidation requests. As we can see in the collumn 3 of both tables, after controlling for neighboring municipalities average characteristics, potential extra jurisdiction is uncorrelated to bankrupt firm characteristics, what alleviates concerns about violation of the exclusion restriction condition.

[Insert Table VIII Here]

[Insert Table IX Here]

Another aspect might create concerns about the measure of potential extra jurisdiction. Municipalities with high income and highly populated can represent more vibrant economic centers and potentially more interesting markets, atracting people to its borders and its neighboring municipalities, creating a large conurbation area of densily populated cities. If that's the case, it is very likely that most of its neighbors satisfy the minimum requirements to become a judicial district, leading to a low potential extra jurisdiction. Also, these municipalities might attract the most skilled workers and have more productive and better managed firms, having a higher probability to overcome from financial distress. On the other hand, municipalities with a high number of neighbors below minimum requirements may be a less interesting economic center and not highly populated.

Tables VIII and IX help to alleviate concerns about the previous point. First, as discussed before, potential extra jurisdiction is uncorrelated to bankrupt firm characteristics after controlling for municipality and average neighboring municipalities characteristics. Second, it is positively correlated to average income per capita, even after controlling for population, suggesting a different correlation than the discussed above: richer municipalities have a higher potential extra jurisdiction. Additionally, note that, as expected, the higher the income per capita of the neighbors, the lower the potential extra jurisdiction.

The key for the exclusion restriction to hold is that the instrument must be independent from firm-level outcomes conditional on observables. In the specifications of the regressions in section V.D we include both municipality and neighboring municipalities controls. Also, for robustness check, in section V.E we run a specification in a subsample of municipalities with high income and high population to see if the results still hold.

The identification strategy relies on three main aspects: (i) a bankruptcy request can only be filed in the judicial district where the debtor has its headquarters or most its operations - it can be choses freely, neither for reorganization or reorganization request; (ii) the measure of potential extra jurisdiction strongly predicts the two measures of court enforcement of a judicial district: average court congestion and years in court for liquidation cases; (iii) after controlling for total number of neighbors and a set of neighbors characteristics, it is not correlated to bankrupt firm characteristics, mitigating concerns about violation of the exclusion restriction.

V.D Results

In this section we present the results, for each of the three outcomes explored of bankruptcy resolutions (liquidation, exit from RAIS and years between bankruptcy filing and exit from RAIS), of the estimation of different specifications of the regression described in section V.A.

V.D.1 Liquidation

In this section we analyze the relationship between court congestion and the probability of a firm under reorganization being liquidated by running different specifications of the regression described in section V.A. The results of the OLS estimations are presented in table X.

[Insert Table X Here]

Table X reports five different specifications. Collumns 1 and 2 present, respectively, the results without fixed effects and including the filing year fixed effect. In collumn 3 we add firm controls (number of employees and share of delinquent debt at filing). In collumn 4 we add sector CNAE 2-digits fixed effects. In collumn 5 we add municipality

controls (average income per capita, number of bank branches per 100,000 inhabitants and share of manufacturing sector in local GDP). As we can see, in all specifications the coefficient for court congestion is negative and insignificant, indicating that the level of congestion of the courts does not affect the probability of liquidation in a reorganization procedure.

These results cannot be considered conclusive. As discussed in section V.B, the level of congestion of courts can generate an endogenous sorting over time of better firms to municipalities where the judiciary is more efficient. If that's the case, firms in more congested municipalities will have a higher probability of overcoming from the financial distress and that effect would bias upward the expected effect of court congestion on probability of liquidation. To attempt to assess causality, we employ the IV strategy, described in section V.C. The results are shown in table XI.

[Insert Table XI Here]

Table XI reports the same five different specifications as in table X. As we can see, all the specifications display an insignificant relationship between court congestion and the probability of liquidation. This might be consequence of potential extra jurisdiction being a weak instrument for court congestion in this small sample size, as reported in section V.C.2. This should be further investigated with a larger sample of reorganization requests with the resolutions identified from the extraction of judges' decisions.

Additionally, we run reduced form regressions using potential extra jurisdiction as proxy for the level of court enforcement of a judicial district. The results. shown in table XII. As we can see in collumn 6, after controlling for firm charcteristics, municipality characteristics and neighboring municipalities average characteristics, potential extra jurisdiction exhibits a negative and significant relationship (at 10%) with the probability of liquidation.

[Insert Table XII Here]

V.D.2 Firm Exit from RAIS

In this section we run different specifications of the regression described in section V.A to analyze the relationship between court congestion and the probability of firm exit from RAIS after a reorganization request. The results of the OLS estimations are presented in table XIII.

[Insert Table XIII Here]

Table XIII reports five different specifications, the same as in section V.D.1. As we can see, as for the probability of liquidation, in all specifications the coefficient for court

congestion is insignificant, indicating that the level of inefficiency of the courts does not affect the probability of a firm exiting from RAIS (as a proxy of being liquidated and shutting down) in a reorganization procedure. For the same reasons dicussed in the previous section, these results cannot be considered conclusive.

To attempt to assess causality, we run the same specifications using potential extra jurisdiction as an intrument for court congestion. The results of the IV approach are presented in table XIV. As we can see, all the specification exhibit a negative and significant relationship between court congestion and the probability of firm exit from RAIS. These results suggest that firms in municipalities with more congested courts have a lower probability of shutting down and exiting from RAIS, as suggested by our theoretical framework. Running reduced form regressions, using potential extra jurisdiction as proxy for the level of congestion of a judicial district, the results go in the same direction, as shown in table XV.

[Insert Table XIV Here]

[Insert Table XV Here]

We can use the estimates presented above to compute the elasticity of the probability of firm exit to the judicial inefficiency measures. Consider two judicial districts that are one standard deviation apart in terms of potential extra jurisdiction (2.503, as shown in the descriptive section). From the first stage, we estimate that the courts in the judicial district with a one standard deviation lower potential extra jurisdiction are 32% less congested. And, from the IV model above, firms that request reorganization in those municipalities have 5% more chances of exiting from RAIS - our proxy for liquidation and firm closure.

V.D.3 Years between Bankruptcy Request and Exit from RAIS

In this section we analyze, for the firms that exited from RAIS, the effect of court congestion on the time (in years) it takes since the bankruptcy filing until exit. We analyze both for reorganization and liquidation requests. The results of the OLS estimations for reorganizations and liquidations are presented, respectively, in tables **??** and XVIII. They both present the same five different specifications as in the previous sections.

[Insert Table **??** Here]

[Insert Table XVIII Here]

As we can see in table **??**, in all specifications the coefficient for court congestion is insignificant, indicating that the level of congestion of the courts does not affect, conditional on exiting from RAIS, the time that it takes for a firm to exit in a reorganization

procedure. Nevertheless, as shown by table XVIII, we find positive and significant effects for liquidation requests in all five specifications. These results bring evidence that, conditional on having the liquidation requested and on exiting from RAIS, firms take longer since the first liquidation request to exit. As discussed in section II, not all liquidation requests end up into a liquidation procedure. The creditor that requested the liquidation and the firm can come to an agreement and the case is dismissed. In more efficient municipalities, as creditors' liquidation payoff, all else equal, is higher, the creditors might be less prone to come to an agreement and the firm will more likely be liquidated. If that's the case, after the first liquidation request of a firm, less time it would take to the firm be effectively liquidated and exit the market. The results of this section might indicate this effect.

To attempt to assess causality, we run the same specification applyin the IV approach described in section V.C. The results for reorganization and liquidation requests are presented, respectively, in tables **??** and XIX.

As we can see, all the specifications exhibit a positive and significant relationship between court congestion and the years between bankruptcy request and firm exit from RAIS. These results suggests that firms operating in municipalities with courts more congested and that end up exiting from the market take longer to exit, suggesting that the bankruptcy resolution takes longer in those places. Running reduced form regressions, using potential extra jurisdiction as proxy for the level of congestion of a judicial district, the results go in the same direction, as shown in tables **??** and XX.

[Insert Table **??** Here]

[Insert Table XIX Here]

[Insert Table **??** Here]

[Insert Table XX Here]

We can use the estimates presented above to compute the elasticity of the years between liquidation request and firm exit to the judicial inefficiency measures. As in the previous section, consider two judicial districts that are one standard deviation apart in terms of potential extra jurisdiction (2.503, as shown in the descriptive section). From the first stage, we estimate that the courts in the judicial district with a one standard deviation lower potential extra jurisdiction are 32% less congested. And, from the IV model above for liquidations, firms that have the liquidation requested and end up exiting from RAIS (as a proxy for firm closure) in those municipalities take almost two months longer since the request to exit.

V.E Additional Results

In this section we run two additional reduced form specifications using potential extra jurisdiction as a proxy for court congestion. First, we analyze the relationship between this measure and the probability of exiting from RAIS , considering an alternative definition of exit. We consider that the firm exited from RAIS if it did up to three years after the reorganization request. In table XVI we report the results. As we can see, they go in the same direction as with the previous definition of exit - up to five years after the bankruptcy request. They indicate that firms under reorganization that are located in municipalities with a hogher level of potential extra jursidiction are less likely to exit from RAIS up to three years after the bankruptcy request.

[Insert Table XVI Here]

Second, one concern about our instrumental variable, potential extra jurisdiction, is that it might affect bankruptcy resolutions directly, not only through the congestion of the courts. what would violate the exclusion restriction condition. As discussed in section V.C.3, we could expect that rich and densily populated municipalities might represent vibrant economic centers, creating a large conurbation area of densily populated cities that would very likely satisfy the minimum requirements to be independent judicial districts. These municipalities would have a low potential extra jurisdiction. On the other hand, municipalities with a high number of neighbors below minimum requirements may be a less interesting economic center and not highly populated. If that's the case, potential extra jurisdiction could be capturing not only the level of congestion of courts, but also the level of development of economic activity of the judicial district, that might directly affect bankruptcy resolutions.

To analyze this issue, we run reduced form regressions to estimate the impacts of potential extra jurisdiction on the time between liquidation request and firm exit from RAIS (conditional on exiting) on a subsample of liquidation requests. We select the observations of the top 50 judicial districts in terms of of high income per capita and high population. As we can see in table XVII, in most of the specifications the coefficient estimated is positive and significant, as for the full sample; in particular, it is significant at 5% after controlling for neighboring municpalities average characteristics (collumn 6). If potential extra jurisdiction would capture the effects of a big and vibrant economy on bankruptcy resolutions, we would expect no significant effect on this subsample. Additionally, we run IV and reduced form specifications (not reported) replacing as instrument, instead of potential extra jurisdiction: (i) average income per capita; (ii) population; and (iii) both. No specification brings significant estimates.

[Insert Table XVII Here]

VI Concluding Remarks

In this paper we empirically investigate the effects of the quality of enforcement local judicial institutions on the resolutions of bankruptcy procedures. Using a novel data set on bankruptcy requests filed in Brazil between 2000 and 2015, we exploit the high variation in the level of congestion of the courts across judicial districts. In a preliminary analysis, we do not find significant effects of court congestion on the probability that a firm ends up recovered in a reorganization case. However, the congestion of the courts can generate an endogenous sorting over time of better and more productive firms to municipalities where the institutions are better. All else equal, these firm might be more able to recover from financial distress and not being liquidated in a reorganization procedure, what would bias the results. To establish a causal relation, we implement an instrumental variable strategy that exploits Brazilian state laws on judicial organization to create an exogenous measure that strongly predicts the level of congestion of courts. We find evidence that firms operating in municipalities with a higher level of court congestion have a lower probability of liquidation in a reorganization procedure. Presenting a simple theoretical framework, we argue that the possible mechanism is that creditors' recovery in liquidation are lower in less efficient courts, potentially increasing firms' position on debt renegotiation, what ultimately increases their probability of overcoming the financial distress and not being liquidated. Exploiting a detailed Brazilian employer-employee dataset to create a proxy of exit of the market, we find evidence in the same direction, indicating that the higher the level of congestion of the courts, the lower the probability that the firm under reorganization will exit the market. Additionally, we find that, conditional on exiting, it takes longer to a firm exit the market since a reorganization or liquidation request in municipalities with a higher congestion of courts.

The results found in this paper suggests that the lower expected recovery in liquidation caused by the low quality of enforcement of the judiciary affects the resolutions of bankruptcy cases. Firms are more successul in avoiding liquidation if the courts are less congested. In this sense, this paper brings evidence of one of the possible mechanisms on how the quality of court enforcement affects the outcomes of bankruptcy systems. This paper contributes mainly to the literature that studies the optimal design and frictions of bankruptcy systems by bringing evidence of one friction - the level of enforcement of judicial institutions - affecting the resolution of bankruptcy cases.

In the progress of this research, we plan a set of extensions. First, to understand better the channels, we will analyze whether the level of court enforcement leads to heteregeneous paths over time of the debt of bankrupt firms as evidence of effects on firms' bargaining positions on debt renegotiation during reorganizations. Second, we will explore heterogeneities in the results - by, for example, initial firm size and the number of potential buyers of firms' assets in liquidation. Third, we are in the process of extending

the identification of resolutions for more reorganization requests, as well as of intermediary events, such as plan approval, to analyze whether court enforcement affects them. Fourth, we are also in the process of increasing the bankruptcy dataset by extracting information on cases of other states of Brazil. And fifth, as an alternative measure of court enforcement and exploting the enforcement of the bankruptcy law, we are in the process of constructing a pro-creditor/pro-debtor bias measure by judge based on their decisions about specific motions during reorganization procedures.

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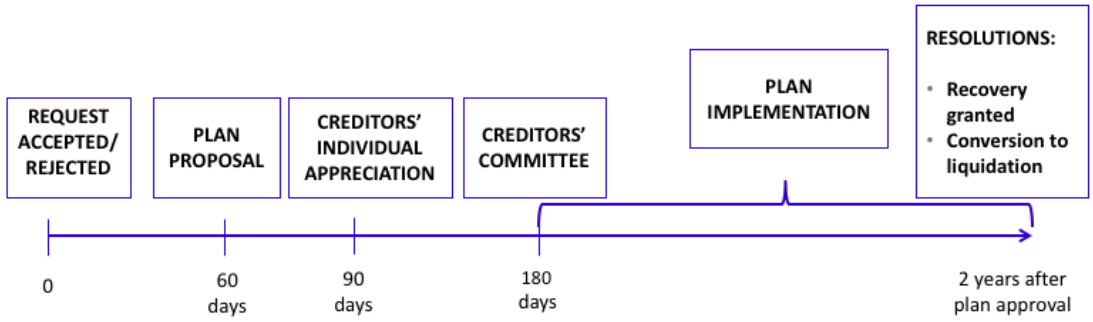
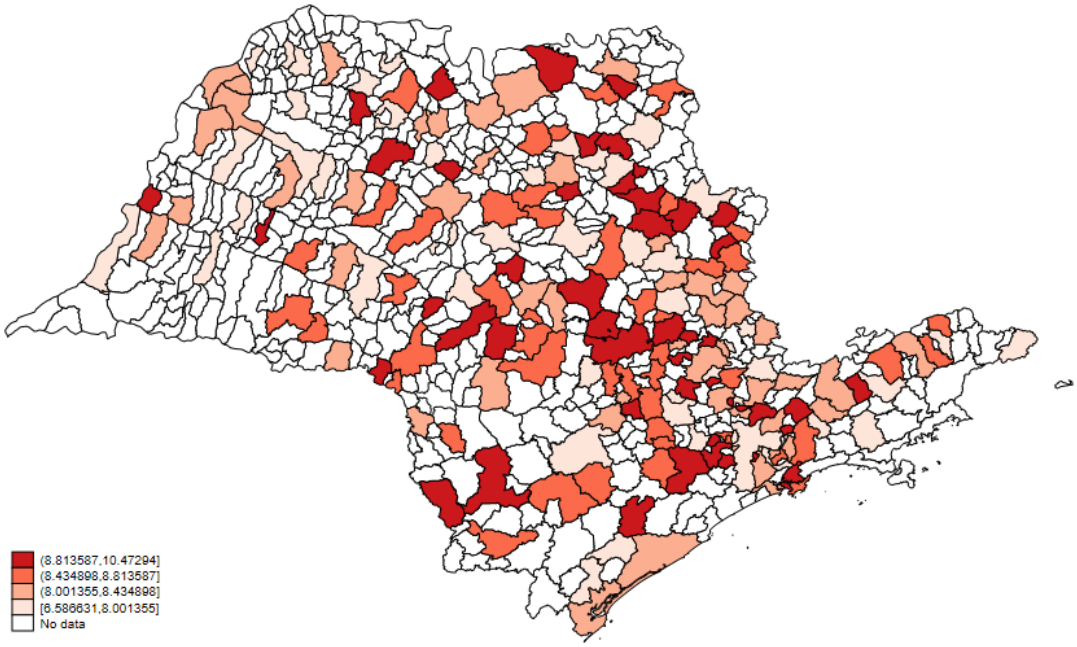
Figures and Tables

Figure I
Time Frames of a Reorganization Procedure



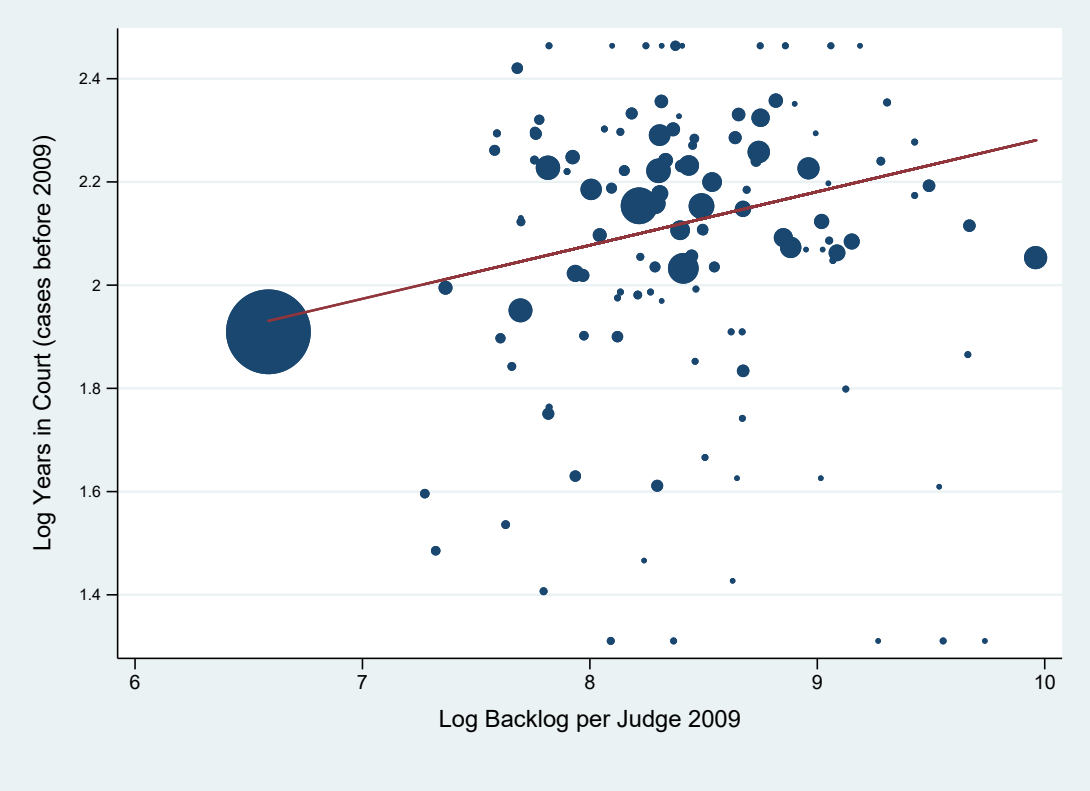
This figure illustrates the time frames - established by the Brazilian bankruptcy law - of a reorganization procedure since the request by a firm in financial distress.

Figure II
Court Congestion across Judicial Districts of the State of SP



This figure shows a map of the state of São Paulo in which the judicial districts are separated in four quartiles of average court congestion. The dark red judicial districts have the more congested courts in the state; the light red ones have the less congested; the ones in white are either districts with no bankruptcy filing during the period of our data or municipalities not seat of a judicial district.

Figure III
Backlog per Judge and Years in Court



This figure plots the relationship between the average backlog per judge (the measure of court congestion) of a judicial district in January 2009 and the average years in court of liquidation cases started between January 2000 and December 2008 and concluded until December 2020. There are 185 different judicial districts in our bankruptcy dataset. Observations are weighted by the number of concluded liquidation cases.

Table I
Backlog per Judge Jan/2009 and Other Court Enforcement Measures

This table reports OLS regression results estimating the relationship between the log of the average backlog per judge in January 2009 in a judicial district and two alternative court enforcement measures. The dependent variables are, in collumns 1 and 2, the log of the average years in court of concluded liquidation cases started between 2000 and 2008, and, in collumns 3 and 4, the log of the average backlog per judge in December 2016 of the judicial district. In collumns 1 and 3 we include only *Log backlog per judge 2009* as main independent variable; in collumns 2 and 4 we include, additionally, judicial district characteristics. The sample contains 145 judicial districts in which there was at least one reorganization request filed between 2005 and 2015. Observations are weighted by, in collumns 1 and 2, the number of concluded liquidation cases, and, in collumns 3 and 4, the number of firms in the judicial district. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variables:	Log Years in court		Log Backlog per judge 2016	
	(1)	(2)	(3)	(4)
Log Backlog per judge 2009	0.087***	0.104***	0.362***	0.273***
	(0.016)	(0.017)	(0.038)	(0.069)
Log avg. income per capita		0.193***		-1.123***
		(0.061)		(0.400)
Bank branches per 100,000 inhab.		-0.006**		0.008
		(0.003)		(0.010)
Industry share in local GDP		-0.113		-0.447
		(0.131)		(0.624)
Constant	1.368***	0.196	4.111***	11.602***
	(0.129)	(0.433)	(0.261)	(2.756)
Observations	185	185	185	185
R2	0.228	0.274	0.334	0.411

Table II
Summary Statistics

This table reports summary statistics. Panel A presents the distribution of a set of characteristics of firms that requested reorganization between 2005 and 2015 and we found in RAIS dataset one year before bankruptcy request. Panel B presents the distribution of a set of judicial district characteristics. All monetary variables are expressed in real terms (reference January 2005).

Panel A: All reorganization requests	Mean	Std. Dev.	Min	Median	Max	N
Number of employees at t=-1	478.55	4,950.747	0.000	39.500	89,418	1198
Total Debt at t=0	10.77	1.874	5.550	10.729	15.2	1198
Share of delinquent debt	0.43	0.549	0.000	0.329	8.56	1198
Share of unsecured credit	0.34	0.272	0.000	0.264	1	1198

Panel B: Judicial district characteristics	Mean	Std. Dev.	Min	Median	Max	N
Years in court for a liquidation case	8.14	2.34	.167	8.26	14.6	145
Log backlog per judge at Jan/2009	8.44	0.626	6.587	8.399	10.5	145
Log backlog per judge at Dec/2016	7.04	0.773	4.551	6.990	9.42	145
Potential extra jurisdiction	3.35	2.503	0.000	3.000	9	145
Number of neighbors	7.08	2.422	2.000	7.000	20	145
Log monthly income per capita	5.88	0.202	5.206	5.877	6.14	145
Log population	11.43	0.931	9.230	11.446	13	145
Bank branches for 100,000 inhabitants	14.24	6.395	2.370	13.467	39.2	145

Table III
Court Enforcement Measures and the Characteristics of Bankrupt Firms and Judicial Districts
Reorganization Requests

This table reports OLS results of regressions in which the dependent variable is *Log years in court*, in columns 1 to 3, and *Log backlog per judge*, in columns 4 to 6. In all specifications we include bankrupt firms characteristics one year before filing, as well as 11 filing year and 46 sector CNAE 2-digit fixed effects. In columns 2 and 5 we include judicial district characteristics and in columns 3 and 6 we include additionally average characteristics of the neighboring municipalities. The sample contains 1,096 reorganization requests from 2005 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date and have declared to employ at least one worker (i.e., excluded *RAIS Negativa*). The sample contains 145 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variables:	Log Years in court			Log Backlog per judge		
	(1)	(2)	(3)	(4)	(5)	(6)
Bankrupt firms characteristics:						
Log Avg. Number of workers per firm	0.003	0.004	0.004	0.009	0.006	0.006
	(0.003)	(0.003)	(0.003)	(0.013)	(0.011)	(0.010)
Average Wage per Worker	-0.028	-0.032*	-0.031**	-0.217**	-0.047	-0.052
	(0.018)	(0.016)	(0.015)	(0.099)	(0.050)	(0.043)
Judicial districts characteristics:						
Log avg. income per capita		0.185*	0.150		-0.323	-0.068
		(0.102)	(0.101)		(0.452)	(0.399)
Bank branches per 100,000 inhab.		-0.016**	-0.016**		-0.081**	-0.080***
		(0.007)	(0.007)		(0.034)	(0.030)
Industry share in local GDP		0.194	0.376		1.432*	0.553
		(0.197)	(0.234)		(0.772)	(0.890)
Log population		-0.032	-0.023		-0.506**	-0.531***
		(0.037)	(0.038)		(0.201)	(0.185)
Average neighboring municipalities characteristics:						
Log avg. income per capita - neighbors			-0.034			0.185
			(0.149)			(0.680)
Log area in squared km - nieghbors			-0.053			0.362
			(0.046)			(0.264)
Industry share in local GDP - neighbors			-0.362			1.535
			(0.391)			(1.960)
Constant	2.242***	1.714***	2.364**	9.420***	17.078***	12.551***
	(0.109)	(0.405)	(0.979)	(0.428)	(2.174)	(3.558)
Filing Year FE	Y	Y	Y	Y	Y	Y
Sector 2 dig. FE	Y	Y	Y	Y	Y	Y
Observations	1,096	1,096	1,096	1,096	1,096	1,096
Judicial Districts	145	145	145	145	145	145
R2	0.000	0.186	0.206	0.066	0.515	0.541

Table IV
Court Enforcement Measures and the Characteristics of Bankrupt Firms and Judicial Districts
Liquidation Requests

This table reports OLS results of regressions in which the dependent variable is *Log years in court*, in collumns 1 to 3, and *Log backlog per judge*, in collumns 4 to 6. In all specifications we include bankrupt firms characteristics one year before filing, as well as 16 filing year and 48 sector CNAE 2-digit fixed effects. In collumn 2 we include judicial district characteristics and in collumn 3 we include additionally average characteristics of the neighboring municpalities. The sample contains 3,644 liquidation requests from 2000 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date and have declared to employ at least one worker (i.e., excluded *RAIS Negativa*). The sample contains 181 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variables:	Log Years in court			Log Backlog per judge		
	(1)	(2)	(3)	(4)	(5)	(6)
Bankrupt firms characteristics:						
Log Avg. Number of workers per firm	0.003	0.001	0.002	0.015**	0.005	0.011
	(0.002)	(0.002)	(0.002)	(0.008)	(0.008)	(0.009)
Average Wage per Worker	-0.034***	-0.027***	-0.027***	-0.287***	-0.116***	-0.121***
	(0.011)	(0.010)	(0.010)	(0.061)	(0.030)	(0.036)
Judicial districts characteristics:						
Log avg. income per capita		0.179**	0.191**		-0.588	-0.307
		(0.090)	(0.092)		(0.529)	(0.424)
Bank branches per 100,000 inhab.		-0.013*	-0.012**		-0.076**	-0.067***
		(0.007)	(0.006)		(0.035)	(0.025)
Industry share in local GDP		0.187	0.129		1.268	0.000
		(0.175)	(0.180)		(0.845)	(0.810)
Log population		-0.045	-0.042		-0.443**	-0.458***
		(0.033)	(0.034)		(0.200)	(0.166)
Average neighboring municipalities characteristics:						
Log avg. income per capita - neighbors			-0.050			-0.404
			(0.151)			(0.671)
Log area in squared km - nieghbors			0.032			0.589**
			(0.048)			(0.247)
Industry share in local GDP - neighbors			0.203			3.746**
			(0.371)			(1.883)
Constant	2.281***	1.841***	1.785*	9.785***	18.351***	14.940***
	(0.066)	(0.425)	(0.965)	(0.224)	(2.423)	(3.605)
Filing Year FE	Y	Y	Y	Y	Y	Y
Sector 2 dig. FE	Y	Y	Y	Y	Y	Y
Observations	3,644	3,644	3,644	3,644	3,644	3,644
Judicial Districts	181	181	181	181	181	181
R2	0.039	0.166	0.172	0.122	0.522	0.598

Table V
Potential Extra Jurisdiction and Court Enforcement Measures

This table reports OLS regression results estimating the relationship between *Potential extra jurisdiction* and the two court enforcement measures explored in this paper. The dependent variables are, in collumns 1 and 2, the log of the average years in court of concluded liquidation cases started between 2000 and 2008, and, in collumns 3 and 4, the log of the average backlog per judge in January 2009 of the judicial district. In collumns 1 and 3 we include only *Potential extra jurisdiction* and *Number of neighbors* as independent variables; in collumns 2 and 4 we include, additionally, judicial district characteristics and average characteristics of the neighboring municipalities. The sample contains 145 judicial districts in which there was at least one reorganization request filed between 2005 and 2015. Observations are weighted by, in collumns 1 and 2, the number of concluded liquidation cases, and, in collumns 3 and 4, the number of firms in the judicial district. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variables:	Log Years in court		Log backlog per judge	
	(1)	(2)	(3)	(4)
Potential extra jurisdiction	0.012**	0.033***	0.056*	0.138***
	(0.005)	(0.008)	(0.029)	(0.041)
Number of neighbors	-0.012***	-0.016***	-0.127***	-0.106***
	(0.002)	(0.003)	(0.009)	(0.013)
Log avg. income per capita		0.083		-1.025***
		(0.063)		(0.262)
Bank branches per 100,000 inhab.		-0.008**		-0.009
		(0.003)		(0.011)
Industry share in local GDP		0.067		0.594
		(0.150)		(0.517)
Log avg. income per capita - neighbors		0.330***		1.070**
		(0.101)		(0.527)
Log area in squared km - nieghbors		-0.084***		-0.020
		(0.030)		(0.178)
Industry share in local GDP - neighbors		-0.341*		0.818
		(0.194)		(0.989)
Constant	2.157***	0.420	9.137***	8.414**
	(0.033)	(0.683)	(0.162)	(3.386)
Observations	145	145	145	145
R-squared	0.271	0.438	0.754	0.806

Table VI
First Stage Regressions
Liquidation in a reorganization procedure

This table reports first stage results using as the dependent variable the log of the average backlog per judge of the judicial district in January 2009. The instrument we use is the number of neighboring municipalities below the requirements to become a seat of an independent judicial district - the potential extra jurisdiction. In all specifications we include the total number of neighbors of a judicial district. Collumn 1 reports results of the specification including only *Potential extra jurisdiction* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 6 filing year fixed effects; in collumn 3, bankrupt firm controls at filing; in collumn 4, 48 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. The sample contains 117 different judicial districts. F Statistics of the excluded instrument is reported in each specification. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Log backlog per judge	(1)	(2)	(3)	(4)	(5)	(6)
Potential extra jurisdiction	0.044	0.042	0.042	0.043	0.059**	0.120***
	(0.029)	(0.028)	(0.028)	(0.027)	(0.027)	(0.038)
Number of neighbors	-0.134***	-0.134***	-0.134***	-0.132***	-0.112***	-0.118***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.011)	(0.010)
Log number of employees			0.007	0.002	-0.003	-0.002
			(0.007)	(0.008)	(0.008)	(0.008)
Log avg. income per capita					-0.723***	-0.881***
					(0.250)	(0.242)
Bank branches per 100,000 inhab.					-0.004	-0.007
					(0.011)	(0.011)
Industry share in local GDP					1.078*	0.551
					(0.556)	(0.566)
Log avg. income per capita - neighbors						1.379**
						(0.562)
Log area in squared km - neighbors						-0.015
						(0.179)
Industry share in local GDP - neighbors						0.127
						(0.876)
Constant	9.269***	9.271***	9.246***	9.238***	13.074***	6.165*
	(0.165)	(0.163)	(0.166)	(0.165)	(1.395)	(3.677)
Filing Year FE		Y	Y	Y	Y	Y
Sector 2 dig. FE				Y	Y	Y
Obs.	777	777	777	777	777	777
Judicial Districts	131	131	131	131	131	131
R2	0.759	0.762	0.762	0.765	0.791	0.809

Table VII
First Stage Regressions
Exit from RAIS (Reorganizations)

This table reports first stage results on the sample of 1,198 reorganization requests from 2005 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date. The dependent variable is the log of the average backlog per judge of the judicial district in January 2009. The instrument we use is the number of neighboring municipalities below the requirements to become a seat of an independent judicial district - the potential extra jurisdiction. In all specifications we include the total number of neighbors of a judicial district. Collumn 1 reports results of the specification including only *Potential extra jurisdiction* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 11 filing year fixed effects; in collumn 3, bankrupt firm controls in the year before filing; in collumn 4, 48 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. The sample contains 150 different judicial districts. F Statistics of the excluded instrument is reported in each specification. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Log backlog per judge	(1)	(2)	(3)	(4)	(5)	(6)
Potential extra jurisdiction	0.044	0.042	0.042	0.043	0.059**	0.120***
	(0.029)	(0.028)	(0.028)	(0.027)	(0.027)	(0.038)
Number of neighbors	-0.134***	-0.134***	-0.134***	-0.132***	-0.112***	-0.118***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.011)	(0.010)
Log number of employees			0.007	0.002	-0.003	-0.002
			(0.007)	(0.008)	(0.008)	(0.008)
Log avg. income per capita					-0.723***	-0.881***
					(0.250)	(0.242)
Bank branches per 100,000 inhab.					-0.004	-0.007
					(0.011)	(0.011)
Industry share in local GDP					1.078*	0.551
					(0.556)	(0.566)
Log avg. income per capita - neighbors						1.379**
						(0.562)
Log area in squared km - neighbors						-0.015
						(0.179)
Industry share in local GDP - neighbors						0.127
						(0.876)
Constant	9.269***	9.271***	9.246***	9.238***	13.074***	6.165*
	(0.165)	(0.163)	(0.166)	(0.165)	(1.395)	(3.677)
Filing Year FE		Y	Y	Y	Y	Y
Sector 2 dig. FE				Y	Y	Y
Obs.	777	777	777	777	777	777
Judicial Districts	131	131	131	131	131	131
R2	0.759	0.762	0.762	0.765	0.791	0.809

Table VIII
Potential Extra Jurisdiction and the Characteristics of Bankrupt Firms and Judicial Districts
Reorganization Requests

This table reports OLS results of regressions in which the dependent variable is *Potential extra jurisdiction*. In the three specifications we include *Number of neighbors* and bankrupt firms characteristics one year before filing, as well as 11 filing year and 46 sector CNAE 2-digit fixed effects. In collumn 2 we include judicial district characteristics and in collumn 3 we include additionally average characteristics of the neighboring municpalities. The sample contains 1,096 reorganization requests from 2005 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date and have declared to employ at least one worker (i.e., excluded *RAIS Negativa*). The sample contains 145 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:			
Potential extra jurisdiction	(1)	(2)	(3)
Bankrupt firms characteristics:			
Number of neighbors	-0.031	-0.000	0.025
	(0.056)	(0.064)	(0.046)
Log Avg. Number of workers per firm	0.018	0.010	-0.017
	(0.037)	(0.035)	(0.028)
Average Wage per Worker	-0.357*	-0.215	-0.015
	(0.207)	(0.166)	(0.113)
Judicial districts characteristics:			
Log avg. income per capita		3.144**	2.606**
		(1.223)	(1.079)
Bank branches per 100,000 inhab.		-0.057	0.005
		(0.062)	(0.053)
Industry share in local GDP		-2.413	0.770
		(2.499)	(1.957)
Log population		-1.141***	-0.287
		(0.336)	(0.270)
Average neighboring municipalities characteristics:			
Log avg. income per capita - neighbors			-9.093***
			(1.332)
Log area in squared km - nieghbors			0.593
			(0.469)
Industry share in local GDP - neighbors			2.594
			(3.623)
Constant	4.838***	0.280	38.332***
	(1.366)	(6.336)	(11.403)
Filing Year FE	Y	Y	Y
Sector 2 dig. FE	Y	Y	Y
Observations	1,096	1,096	1,096
Judicial Districts	145	145	145
R2	0.068	0.209	0.509

Table IX
Potential Extra Jurisdiction and the Characteristics of Bankrupt Firms and Judicial Districts
Liquidation Requests

This table reports OLS results of regressions in which the dependent variable is *Potential extra jurisdiction*. In the three specifications we include *Number of neighbors* and bankrupt firms characteristics one year before filing, as well as 16 filing year and 48 sector CNAE 2-digit fixed effects. In collumn 2 we include judicial district characteristics and in collumn 3 we include additionally average characteristics of the neighboring municpalities. The sample contains 3,644 liquidation requests from 2000 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date and have declared to employ at least one worker (i.e., excluded *RAIS Negativa*). The sample contains 181 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:			
Potential extra jurisdiction	(1)	(2)	(3)
Bankrupt firms characteristics:			
Number of neighbors	-0.022	0.004	0.014
	(0.053)	(0.057)	(0.051)
Log Avg. Number of workers per firm	0.021	0.012	-0.003
	(0.026)	(0.023)	(0.016)
Average Wage per Worker	-0.463**	-0.242*	-0.114
	(0.225)	(0.133)	(0.079)
Judicial districts characteristics:			
Log avg. income per capita		3.934***	2.879**
		(1.207)	(1.159)
Bank branches per 100,000 inhab.		-0.084	-0.014
		(0.055)	(0.046)
Industry share in local GDP		-2.997	0.574
		(2.222)	(1.934)
Log population		-1.386***	-0.404*
		(0.280)	(0.233)
Average neighboring municipalities characteristics:			
Log avg. income per capita - neighbors			-9.781***
			(1.267)
Log area in squared km - nieghbors			0.130
			(0.482)
Industry share in local GDP - neighbors			1.478
			(3.580)
Constant	5.314***	-0.722	46.215***
	(1.238)	(6.861)	(11.658)
Filing Year FE	Y	Y	Y
Sector 2 dig. FE	Y	Y	Y
Observations	3,644	3,644	3,644
Judicial Districts	181	181	181
R2	0.049	0.239	0.537

Table X
Court Congestion and Liquidation
OLS

This table reports OLS regression results estimating the relationship between court congestion in a judicial district and the probability of liquidation of a firm that requested reorganization. The dependent variable is equal to 1 if the firm is liquidated in the end of the reorganization procedure and 0 otherwise. Court congestion is measured as the log of the average backlog per judge in the courts of the judicial district. The sample contains 346 reorganization requests from June 2005 to January 2010 for which we have identified the resolutions from the judges' decisions extraction. Collumn 1 reports results of the specification including only *Log backlog per judge* as independent variable. From collumn 2 to 5 we add, successively, new control variables: in collumn 2, 6 filing year fixed effects; in collumn 3, bankrupt firm controls at filing; in collumn 4, 48 sector CNAE 2-digit fixed effects; and in collumn 5, judicial district characteristics. The sample contains 117 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:					
Liquidation	(1)	(2)	(3)	(4)	(5)
Log backlog per judge	-0.040***	-0.032**	-0.030**	-0.030**	-0.039*
	(0.012)	(0.013)	(0.013)	(0.014)	(0.022)
Log number of employees			-0.027***	-0.025***	-0.026***
			(0.008)	(0.008)	(0.008)
Log avg. income per capita					-0.043
					(0.095)
Bank branches per 100,000 inhab.					-0.003
					(0.005)
Industry share in local GDP					-0.101
					(0.220)
Constant	0.709***	0.645***	0.730***	0.719***	1.127*
	(0.091)	(0.095)	(0.090)	(0.110)	(0.661)
Filing Year FE		Y	Y	Y	Y
Sector 2 dig. FE				Y	Y
Obs.	777	777	777	777	777
Judicial Districts	131	131	131	131	131
R2	0.005	0.024	0.036	0.056	0.053

Table XI
Court Congestion and Liquidation
IV

This table reports IV 2SLS regression results estimating the relationship between court congestion in a judicial district and the probability of liquidation of a firm that requested reorganization. The dependent variable is equal to 1 if the firm is liquidated in the end of the reorganization procedure and 0 otherwise. Court congestion is measured as the log of the average backlog per judge in the courts of the judicial district. The excluded instrument for *Log backlog per judge* in the first stage is *Potential extra jurisdiction*. The sample contains 346 reorganization requests from June 2005 to January 2010 for which we have identified the resolutions from the judges' decisions extraction. Collumn 1 reports results of the specification including only *Log backlog per judge* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 6 filing year fixed effects; in collumn 3, bankrupt firm controls at filing; in collumn 4, 48 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. The sample contains 117 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Liquidation	(1)	(2)	(3)	(4)	(5)	(6)
Log backlog per judge	-0.511	-0.504	-0.515	-0.488	-0.374*	-0.232**
	(0.342)	(0.336)	(0.348)	(0.318)	(0.207)	(0.112)
Number of neighbors	-0.064	-0.065	-0.066	-0.061	-0.040	-0.025*
	(0.048)	(0.047)	(0.049)	(0.044)	(0.027)	(0.015)
Log number of employees			-0.025***	-0.024***	-0.026***	-0.025***
			(0.008)	(0.009)	(0.008)	(0.008)
Log avg. income per capita					-0.258	-0.201*
					(0.168)	(0.113)
Bank branches per 100,000 inhab.					-0.004	-0.004
					(0.006)	(0.005)
Industry share in local GDP					0.192	0.030
					(0.288)	(0.288)
Log avg. income per capita - neighbors						0.177
						(0.161)
Log area in squared km - neighbors						-0.040
						(0.061)
Industry share in local GDP - neighbors						-0.078
						(0.399)
Constant	5.130	5.609*	5.841*	5.546*	5.902**	3.476*
	(3.225)	(3.155)	(3.247)	(3.163)	(2.803)	(1.805)
Obs.	777	777	777	777	777	777
Judicial Districts	131	131	131	131	131	131
R2	.	.	.	.	-0.046	0.019
F Stat First Stage	2.259	2.254	2.274	2.491	4.850	10.275

Table XII
Potential Extra Jurisdiction and Liquidation
Reduced Form

This table reports OLS reduced form regression results estimating the relationship between potential extra jurisdiction in a judicial district and the probability of liquidation of a firm that requested reorganization. The dependent variable is equal to 1 if the firm is liquidated in the end of the reorganization procedure and 0 otherwise. The sample contains 346 reorganization requests from June 2005 to January 2010 for which we have identified the resolutions from the judges' decisions extraction. Collumn 1 reports results of the specification including only *Potential extra jurisdiction* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 6 filing year fixed effects; in collumn 3, bankrupt firm controls at filing; in collumn 4, 48 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. The sample contains 117 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable: Liquidation	(1)	(2)	(3)	(4)	(5)	(6)
Potential extra jurisdiction	-0.022***	-0.021***	-0.022***	-0.021***	-0.022***	-0.028**
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.011)
Number of neighbors	0.004**	0.003	0.003	0.003	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Log number of employees			-0.028***	-0.025***	-0.025***	-0.025***
			(0.008)	(0.008)	(0.008)	(0.008)
Log avg. income per capita					0.012	0.003
					(0.087)	(0.102)
Bank branches per 100,000 inhab.					-0.002	-0.002
					(0.005)	(0.004)
Industry share in local GDP					-0.211	-0.098
					(0.209)	(0.241)
Log avg. income per capita - neighbors						-0.142
						(0.171)
Log area in squared km - neighbors						-0.037
						(0.054)
Industry share in local GDP - neighbors						-0.107
						(0.302)
Constant	0.396***	0.405***	0.511***	0.497***	0.528	1.635
	(0.042)	(0.043)	(0.053)	(0.051)	(0.493)	(1.093)
Filing Year FE		Y	Y	Y	Y	Y
Sector 2 dig. FE				Y	Y	Y
Obs.	777	777	777	777	777	777
Judicial Districts	131	131	131	131	131	131
R2	0.011	0.030	0.043	0.062	0.059	0.057

Table XIII
Court Congestion and Firm Exit from RAIS
OLS

This table reports OLS regression results estimating the relationship between court congestion in a judicial district and the probability that a firm that requested reorganization exits from RAIS after filing. The dependent variable is equal to 1 if the firm exits from RAIS between the year of the reorganization request and five years after and 0 otherwise. Court congestion is measured as the log of the average backlog per judge in the courts of the judicial district. The sample contains 1,198 reorganization requests from 2005 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date. Column 1 reports results of the specification including only *Log backlog per judge* as independent variable. From collumn 2 to 5 we add, successively, new control variables: in collumn 2, 11 filing year fixed effects; in collumn 3, bankrupt firm controls one year before filing; in collumn 4, 48 sector CNAE 2-digit fixed effects; and in collumn 5, judicial district characteristics. The sample contains 150 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:					
Firm exit from RAIS	(1)	(2)	(3)	(4)	(5)
Log backlog per judge	0.005	0.013	0.015	0.004	0.004
	(0.016)	(0.015)	(0.015)	(0.016)	(0.019)
Log number of employees			-0.019***	-0.017***	-0.017***
			(0.005)	(0.006)	(0.006)
Log avg. income per capita					0.116
					(0.096)
Bank branches per 100,000 inhab.					-0.006
					(0.004)
Industry share in local GDP					-0.009
					(0.204)
Constant	0.187	0.120	0.177	0.261**	-0.351
	(0.115)	(0.112)	(0.113)	(0.122)	(0.611)
Filing Year FE		Y	Y	Y	Y
Sector 2 dig. FE				Y	Y
Obs.	777	777	777	777	777
Judicial Districts	131	131	131	131	131
R2	-0.001	0.046	0.053	0.064	0.064

Table XIV
Court Congestion and Firm Exit from RAIS
IV

This table reports IV 2SLS regression results estimating the relationship between court congestion in a judicial district and the probability that a firm that requested reorganization exits from RAIS after filing. The dependent variable is equal to 1 if the firm exits from RAIS between the year of the reorganization request and five years after and 0 otherwise. Court congestion is measured as the log of the average backlog per judge in the courts of the judicial district. The excluded instrument for *Log backlog per judge* in the first stage is *Potential extra jurisdiction*. The sample contains 1,198 reorganization requests from 2005 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date. Columns 1 reports results of the specification including only *Log backlog per judge* and *Number of neighbors* as independent variables. From column 2 to 6 we add, successively, new control variables: in column 2, 11 filing year fixed effects; in column 3, bankrupt firm controls one year before filing; in column 4, 48 sector CNAE 2-digit fixed effects; in column 5, judicial district characteristics; and in column 6, average characteristics of the neighboring municipalities. The sample contains 150 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Firm exit from RAIS	(1)	(2)	(3)	(4)	(5)	(6)
Log backlog per judge	-0.468	-0.518	-0.525	-0.519	-0.391*	-0.207*
	(0.314)	(0.353)	(0.361)	(0.350)	(0.225)	(0.109)
Number of neighbors	-0.065	-0.072	-0.073	-0.070	-0.046	-0.026*
	(0.044)	(0.049)	(0.050)	(0.047)	(0.028)	(0.014)
Log number of employees			-0.016**	-0.016**	-0.018***	-0.017***
			(0.007)	(0.007)	(0.007)	(0.006)
Log avg. income per capita					-0.147	-0.047
					(0.185)	(0.125)
Bank branches per 100,000 inhab.					-0.006	-0.006
					(0.006)	(0.005)
Industry share in local GDP					0.349	0.012
					(0.288)	(0.247)
Log avg. income per capita - neighbors						0.218
						(0.148)
Log area in squared km - neighbors						0.002
						(0.055)
Industry share in local GDP - neighbors						0.171
						(0.357)
Constant	4.630	4.860	5.006	5.033	4.581	0.966
	(2.953)	(3.303)	(3.361)	(3.492)	(3.079)	(1.843)
Obs.	777	777	777	777	777	777
Judicial Districts	131	131	131	131	131	131
R2	.	.	.	.	.	0.008
F Stat First Stage	2.259	2.254	2.274	2.491	4.850	10.275

Table XV
Potential Extra Jurisdiction and Firm Exit from RAIS
Reduced Form

This table reports OLS reduced form regression results estimating the relationship between potential extra jurisdiction in a judicial district and the probability that a firm that requested reorganization exits from RAIS after filing. The dependent variable is equal to 1 if the firm exits from RAIS between the year of the reorganization request and five years after and 0 otherwise. The sample contains 1,198 reorganization requests from 2005 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date. Collumn 1 reports results of the specification including only *Potential extra jurisdiction* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 11 filing year fixed effects; in collumn 3, bankrupt firm controls one year before filing; in collumn 4, 48 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. The sample contains 150 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Firm exit from RAIS	(1)	(2)	(3)	(4)	(5)	(6)
Potential extra jurisdiction	-0.020***	-0.022***	-0.022***	-0.023***	-0.023***	-0.025***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.009)
Number of neighbors	-0.002	-0.003	-0.003	-0.001	-0.002	-0.002
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Log number of employees			-0.019***	-0.017***	-0.016**	-0.017***
			(0.005)	(0.006)	(0.006)	(0.006)
Log avg. income per capita					0.136	0.135
					(0.092)	(0.095)
Bank branches per 100,000 inhab.					-0.005	-0.004
					(0.004)	(0.004)
Industry share in local GDP					-0.072	-0.102
					(0.186)	(0.202)
Log avg. income per capita - neighbors						-0.067
						(0.151)
Log area in squared km - neighbors						0.005
						(0.055)
Industry share in local GDP - neighbors						0.145
						(0.270)
Constant	0.293***	0.308***	0.380***	0.352***	-0.368	-0.041
	(0.049)	(0.046)	(0.049)	(0.053)	(0.516)	(1.084)
Filing Year FE		Y	Y	Y	Y	Y
Sector 2 dig. FE				Y	Y	Y
Obs.	777	777	777	777	777	777
Judicial Districts	131	131	131	131	131	131
R2	0.009	0.058	0.066	0.075	0.076	0.072

Table XVI
Court Congestion and Firm Exit from RAIS
Alternative Exit Definition

This table reports regression results exploring an alternative measure of exit from RAIS. The dependent variable is equal to 1 if the firm exits from RAIS between the year of the reorganization request and three years - and not five - after and 0 otherwise. The sample contains 1,198 reorganization requests from 2005 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date. In collumns 1 to 3 we report the results, respectively, of: (1) the OLS regression using *Log backlog per judge* as the main independent variable; (2) the IV 2SLS regression using *Log backlog per judge* as the main independent variable and instrumented by *Potential extra jurisdiction* in the first stage; and (3) the OLS reduced form regression using *Potential extra jurisdiction* as the main independent variable. In all specifications we include characteristics of the bankrupt firm and the judicial district, as well as 11 filing year and 48 sector CNAE 2-digit fixed effects. In collumns 2 and 3 we include, additionally, *Number of neighbors* and a set of average characteristics of neighboring municipalities. The sample contains 150 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:	OLS	IV	Reduced Form
Firm exit from RAIS	(1)	(2)	(3)
Log backlog per judge	-0.012	-0.133*	
	(0.020)	(0.079)	
Potential extra jurisdiction			-0.017**
			(0.008)
Number of neighbors		-0.018*	-0.002
		(0.010)	(0.003)
Log number of employees	-0.031***	-0.031***	-0.031***
	(0.004)	(0.004)	(0.004)
Log avg. income per capita	0.102	-0.013	0.089
	(0.087)	(0.087)	(0.077)
Bank branches per 100,000 inhab.	-0.006*	-0.005	-0.004
	(0.003)	(0.004)	(0.003)
Industry share in local GDP	0.021	0.016	-0.075
	(0.180)	(0.216)	(0.196)
Log avg. income per capita - neighbors		0.275***	0.107
		(0.103)	(0.123)
Log area in squared km - neighbors		-0.047	-0.033
		(0.045)	(0.045)
Industry share in local GDP - neighbors		0.031	0.033
		(0.291)	(0.254)
Constant	-0.085	0.211	-0.488
	(0.601)	(1.313)	(0.766)
Filing Year FE	Y	Y	Y
Sector 2 dig. FE	Y	Y	Y
Obs.	1,198	1,198	1,198
Judicial Districts	150	150	150
R2	0.070	0.061	0.079
F Stat First Stage	-	10.123	-

Table XVII
Potential Extra Jurisdiction and Years between Request and Firm Exit
Liquidations
Subsample of Judicial Districts

This table reports OLS reduced form regression results estimating the relationship between potential extra jurisdiction in a judicial district and the years between liquidation request and firm exit from RAIS - for the firms that exited. The sample contains 1,784 liquidation requests from 2000 to 2015 for which: (i) we have found the bankrupt firm in RAIS dataset one year before filing date; (ii) the firm has exited from RAIS in the years after filing; and (iii) the request was originated in the top 50 judicial districts in the state of São Paulo in terms of a combination of average income per capita and population. Collumn 1 reports results of the specification including only *Potential extra jurisdiction* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 16 filing year fixed effects; in collumn 3, bankrupt firm controls one year before filing; in collumn 4, 47 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Years between request and exit from RAIS	(1)	(2)	(3)	(4)	(5)	(6)
Potential extra jurisdiction	0.039*	0.040*	0.041*	0.042*	0.021	0.066**
	(0.021)	(0.022)	(0.022)	(0.024)	(0.023)	(0.027)
Number of neighbors	-0.021***	-0.021***	-0.021***	-0.021***	-0.015**	-0.016**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
Log number of employees			0.013	0.003	0.004	0.007
			(0.016)	(0.020)	(0.021)	(0.022)
Log avg. income per capita					-1.088	-0.940
					(0.908)	(0.983)
Bank branches per 100,000 inhab.					-0.027**	-0.031**
					(0.012)	(0.014)
Industry share in local GDP					-1.044	-1.216**
					(0.626)	(0.551)
Log avg. income per capita - neighbors						1.170**
						(0.488)
Log area in squared km - neighbors						0.090
						(0.126)
Industry share in local GDP - neighbors						-0.713
						(0.708)
Constant	1.958***	1.955***	1.927***	1.951***	9.283*	1.311
	(0.128)	(0.127)	(0.131)	(0.128)	(5.430)	(6.504)
Filing Year FE		Y	Y	Y	Y	Y
Sector 2 dig. FE				Y	Y	Y
Observations	1,784	1,784	1,784	1,784	1,784	1,784
Judicial Districts	50	50	50	50	50	50
R2	0.011	0.052	0.052	0.050	0.053	0.054

Table XVIII
Court Congestion and Years between Request and Firm Exit from RAIS Liquidations
OLS

This table reports OLS regression results estimating the relationship between court congestion in a judicial district and the years between liquidation request and firm exit from RAIS - for the firms that exited. Court congestion is measured as the log of the average backlog per judge in the courts of the judicial district. The sample contains 2,402 liquidation requests from 2000 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date and the firm has exited from RAIS in the years after filing. Collumn 1 reports results of the specification including only *Log backlog per judge* as independent variable. From collumn 2 to 5 we add, successively, new control variables: in collumn 2, 16 filing year fixed effects; in collumn 3, bankrupt firm controls one year before filing; in collumn 4, 49 sector CNAE 2-digit fixed effects; and in collumn 5, judicial district characteristics. The sample contains 152 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:					
Years between request and exit from RAIS	(1)	(2)	(3)	(4)	(5)
Log backlog per judge	0.102**	0.127***	0.127***	0.124***	0.196***
	(0.046)	(0.037)	(0.037)	(0.043)	(0.047)
Log number of employees			-0.003	-0.009	-0.010
			(0.016)	(0.018)	(0.018)
Log avg. income per capita					0.452**
					(0.223)
Bank branches per 100,000 inhab.					-0.000
					(0.012)
Industry share in local GDP					-0.608
					(0.502)
Constant	0.948***	0.753***	0.759***	0.796**	-2.292
	(0.345)	(0.275)	(0.276)	(0.318)	(1.393)
Filing Year FE		Y	Y	Y	Y
Sector 2 dig. FE				Y	Y
Observations	2,402	2,402	2,402	2,402	2,402
Judicial Districts	152	152	152	152	152
R2	0.004	0.044	0.043	0.040	0.042

Table XIX
Court Congestion and Years between Request and Firm Exit from RAIS Liquidations
IV

This table reports IV 2SLS regression results estimating the relationship between court congestion in a judicial district and the years between liquidation request and firm exit from RAIS - for the firms that exited. Court congestion is measured as the log of the average backlog per judge in the courts of the judicial district. The excluded instrument for *Log backlog per judge* in the first stage is *Potential extra jurisdiction*. The sample contains 2,402 liquidation requests from 2000 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date and the firm has exited from RAIS in the years after filing. Collumn 1 reports results of the specification including only *Log backlog per judge* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 16 filing year fixed effects; in collumn 3, bankrupt firm controls one year before filing; in collumn 4, 49 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. The sample contains 152 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Years between request and exit from RAIS	(1)	(2)	(3)	(4)	(5)	(6)
Log backlog per judge	1.235	1.189	1.188	1.276	0.890**	0.447**
	(0.893)	(0.773)	(0.771)	(0.798)	(0.435)	(0.198)
Number of neighbors	0.150	0.142	0.142	0.153	0.081	0.030
	(0.126)	(0.110)	(0.109)	(0.113)	(0.057)	(0.025)
Log number of employees			-0.005	-0.007	-0.010	-0.010
			(0.017)	(0.019)	(0.018)	(0.017)
Log avg. income per capita					0.800*	0.720***
					(0.447)	(0.267)
Bank branches per 100,000 inhab.					0.003	-0.000
					(0.011)	(0.010)
Industry share in local GDP					-1.109	-0.255
					(0.746)	(0.549)
Log avg. income per capita - neighbors						-0.440
						(0.331)
Log area in squared km - neighbors						-0.055
						(0.121)
Industry share in local GDP - neighbors						-1.223
						(0.774)
Constant	-9.605	-8.709	-8.686	-9.032	-9.769	-2.286
	(8.414)	(7.242)	(7.204)	(7.325)	(6.089)	(3.614)
Filing Year FE		Y	Y	Y	Y	Y
Sector 2 dig. FE				Y	Y	Y
Observations	2,402	2,402	2,402	2,402	2,402	2,402
Judicial Districts	152	152	152	152	152	152
R2	0.000	0.000	0.000	0.000	0.002	0.038

Table XX
Potential Extra Jurisdiction and Years between Request and Firm Exit
Liquidations
Reduced Form

This table reports OLS reduced form regression results estimating the relationship between potential extra jurisdiction in a judicial district and the years between liquidation request and firm exit from RAIS - for the firms that exited. The sample contains 2,402 liquidation requests from 2000 to 2015 for which we have found the bankrupt firm in RAIS dataset one year before filing date and the firm has exited from RAIS in the years after filing. Collumn 1 reports results of the specification including only *Potential extra jurisdiction* and *Number of neighbors* as independent variables. From collumn 2 to 6 we add, successively, new control variables: in collumn 2, 16 filing year fixed effects; in collumn 3, bankrupt firm controls one year before filing; in collumn 4, 49 sector CNAE 2-digit fixed effects; in collumn 5, judicial district characteristics; and in collumn 6, average characteristics of the neighboring municipalities. The sample contains 152 different judicial districts. Standard errors are clustered at the judicial district level and shown in parentheses. *, ** and *** denote statistical significance at, respectively, the 10%, 5% and 1% levels.

Dependent variable:						
Years between request and exit from RAIS	(1)	(2)	(3)	(4)	(5)	(6)
Potential extra jurisdiction	0.063***	0.061***	0.061***	0.067***	0.061***	0.064**
	(0.019)	(0.019)	(0.019)	(0.020)	(0.020)	(0.027)
Number of neighbors	-0.012***	-0.015***	-0.015***	-0.015***	-0.021***	-0.022***
	(0.005)	(0.004)	(0.004)	(0.004)	(0.007)	(0.007)
Log number of employees			-0.002	-0.007	-0.008	-0.008
			(0.016)	(0.018)	(0.018)	(0.018)
Log avg. income per capita					0.264	0.313
					(0.216)	(0.222)
Bank branches per 100,000 inhab.					-0.001	-0.002
					(0.012)	(0.012)
Industry share in local GDP					-0.353	-0.251
					(0.505)	(0.501)
Log avg. income per capita - neighbors						0.178
						(0.403)
Log area in squared km - neighbors						-0.003
						(0.099)
Industry share in local GDP - neighbors						-0.553
						(0.699)
Constant	1.762***	1.799***	1.803***	1.803***	0.418	-0.732
	(0.098)	(0.081)	(0.079)	(0.084)	(1.198)	(2.559)
Filing Year FE		Y	Y	Y	Y	Y
Sector 2 dig. FE				Y	Y	Y
Observations	2,402	2,402	2,402	2,402	2,402	2,402
Judicial Districts	152	152	152	152	152	152
R2	0.009	0.048	0.047	0.045	0.045	0.044

Figure IV
Bank Debt Behavior Over Time

This figure plots the average evolution since 15 months before until 42 months after the reorganization request of the total debt (all contracts active each month) and new debt (only contracts started after filing). We explore the 1198 firms that requested reorganization between June 2005 and December 2015 and were found in SCR dataset (83% of all requests).

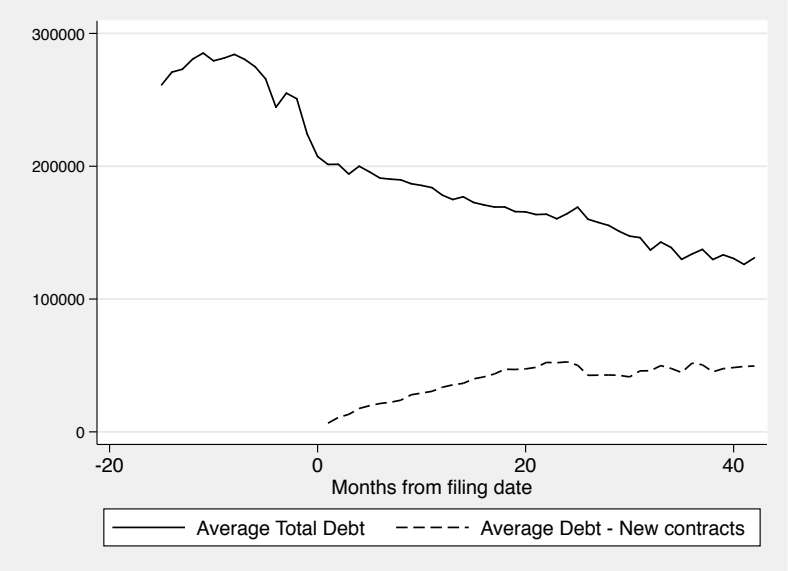


Figure V
Secured Credit not Subject to Automatic Stay
Total Debt x Original Debt

This figure plots the average evolution since 15 months before until 42 months after the reorganization request of the total debt (all contracts active each month) and original debt (only contracts active at the filing month) of secured credits not subject to automatic stay. We explore the 1198 firms that requested reorganization between June 2005 and December 2015 and were found in SCR dataset (83% of all requests).

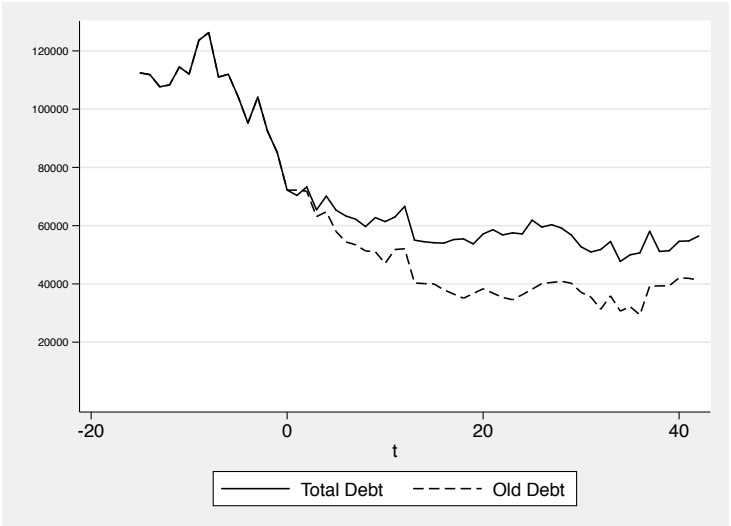


Figure VI
Secured Credit Subject to Automatic Stay
Total Debt x Original Debt

This figure plots the average evolution since 15 months before until 42 months after the reorganization request of the total debt (all contracts active each month) and original debt (only contracts active at the filing month) of secured credits subject to automatic stay. We explore the 1198 firms that requested reorganization between June 2005 and December 2015 and were found in SCR dataset (83% of all requests).

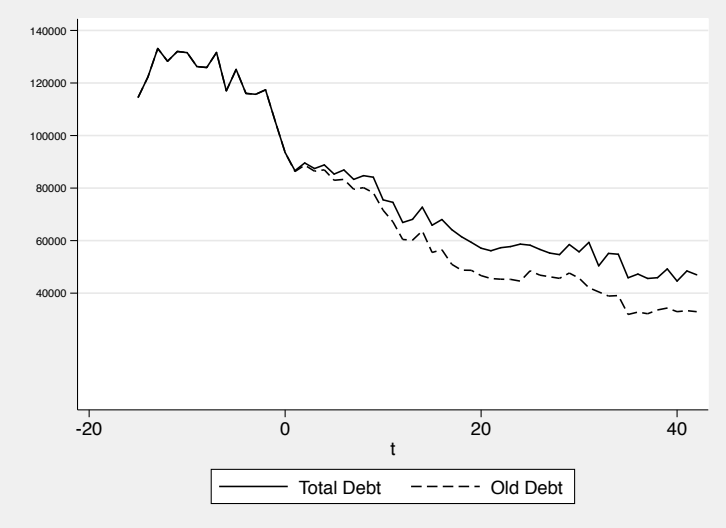


Figure VII
Unsecured Credit
Total Debt x Original Debt

This figure plots the average evolution since 15 months before until 42 months after the reorganization request of the total debt (all contracts active each month) and original debt (only contracts active at the filing month) of unsecured credits. We explore the 1198 firms that requested reorganization between 2005 and 2015 and were found in SCR.