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THE LABOR EFFECTS OF PRO-LABOR BIAS IN BANKRUPTCY

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The Labor Effects of Pro-labor Bias in Bankruptcy  
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### **ABSTRACT**

Judicial decisions in bankruptcy are often influenced by the goal of preserving employment. Using the text of judicial decisions and the random assignment of cases across courts in the state of São Paulo in Brazil, we construct a novel court-level measure of pro-labor bias and study its effect on labor market outcomes. Employees of distressed firms assigned to high pro-labor courts are more likely to stay with their employer; however, they experience a 4.5% decline in earnings. This effect is driven by wage adjustments, it is stronger for workers with better outside options, and concentrated in periods of economic expansion.

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# I INTRODUCTION

Bankruptcy institutions play an important role in the reallocation of production factors of distressed firms and have broader implications for economic growth and aggregate productivity. The objective of a well-functioning bankruptcy system is to prevent the exit of viable firms and the inefficient continuation of non-viable ones, while facilitating the reallocation of resources from distressed firms to more productive ones. However, numerous frictions tend to characterize the reallocative efficiency of the bankruptcy process, especially in developing countries. Courts are often congested, judges lack the specialized knowledge necessary to deal with complex cases, and – in some instances – are subject to political influence. A friction that, especially in the context of developing countries, has received little attention is judicial bias in the interpretation of the law. In particular, judges may favor the continuation of a non-viable firm – even if doing so means deviating from the actual wording of the law – in order to protect workers’ jobs. Although this type of bias in bankruptcy is considered widespread, there is scarce direct empirical evidence on how it affects workers’ employment and earnings.<sup>1</sup>

In this paper, we study the labor market effects of pro-labor bias in bankruptcy. We focus on Brazil, which provides a well-suited setting for a number of reasons. First, Brazil has relatively strict labor-protection laws, similar to the ones observed in several developing and EU countries (Botero, Djankov, Porta, Lopez-de Silanes, and Shleifer, 2004), and a judicial system often described by local observers as biased in favor of debtors and workers (Arida, Bacha, and Lara-Resende, 2005). Second, according to the data collected for this paper, large variation exists in the degree of pro-labor bias across Brazilian courts dealing with bankruptcy cases; whereas some courts consistently follow the wording of bankruptcy regulations, others routinely deviate from it when adjudicating cases, often with the declared intent of protecting workers’ employment. Finally, this setting allows us to combine manually-collected information on judicial decisions in bankruptcy cases with a comprehensive employer-employee dataset in which we can follow all formal workers over time.

We start by constructing a measure of pro-labor bias using a new dataset covering the universe of bankruptcy cases filed in the state of São Paulo, the largest state in Brazil, between 2005 and 2017. For each case, we collect information on all intermediate decisions taken by the judges in charge of the case, thus allowing us to observe whether judges deviate from the letter of specific articles of the bankruptcy code in order to facilitate the continuation of an insolvent firm. Although these decisions are effectively pro-debtor, we

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<sup>1</sup>Blazy, Chopard, Fimayer, and Guigou (2011) shows that in French bankruptcy courts, “social considerations prevail in the arbitration,” with the preservation of employment being a key consideration. In the US, reorganization under Chapter 11 is viewed as favoring debtors and the continuation of the firm (Franks, Nyborg, and Torous, 1996; Skeel, 2001). Pro-labor bias is evident outside of bankruptcy as well. For example, Cahuc, Carcillo, and Patault (2019) analyzes the impact of pro-labor bias in labor courts in France.

use the term “pro-labor” because judges frequently justify them on the basis of preserving employment. We aggregate these intermediate decisions to create a measure of pro-labor bias at the court level.

Using this measure, we study how pro-labor bias in bankruptcy affects bankruptcy resolution as well as the continuation of insolvent firms and of firm-employee relationships. Moreover we examine how pro-labor bias shapes the earnings dynamics of workers of financially distressed firms. The main identification challenge we face is the potential correlation between pro-labor bias and the characteristics of a given region or the firms operating in it. For example, regions with more pro-labor courts could also be characterized by poorly functioning local labor markets. In this case, differences in workers’ outcomes after bankruptcy could be driven by differences in the characteristics of the local labor market that workers face, rather than being the effect of judicial bias. To deal with these challenges, we rely on two characteristics of our institutional setting. First, Brazilian law requires bankruptcy cases to be filed in the judicial district where a firm’s primary establishment is located. Second, bankruptcy cases in the state of São Paulo are randomly assigned across courts within a judicial district. These characteristics ensure firms cannot choose which court will handle their case, and the degree of judicial bias they face is plausibly orthogonal to their initial characteristics. Exploiting this feature, our identification strategy compares the labor market outcomes of workers whose firms filed for bankruptcy in the same judicial district and year, and whose cases were assigned to courts with different degrees of pro-labor bias.

We first document how pro-labor bias affects bankruptcy outcomes. We find courts with higher pro-labor bias tend to facilitate the continuation of insolvent firms, by either rejecting liquidation requests at a higher rate, or converting reorganization cases into liquidations at a lower rate. Note that this occurs despite high- and low-pro-labor courts face cases with comparable characteristics (same size of insolvent firm) and composition (same share of initial reorganization vs. liquidation filings), and have similar levels of court congestion. Next, we focus on employee-employer relationships. We document that employees of insolvent firms whose cases were assigned to a high-pro-labor court are more likely to stay with the same employer in the post bankruptcy period. Even among employees that eventually took a job at a new firm, we find that those assigned to high pro-labor courts stayed on average for longer with the current employer before transitioning to the new employer.

After we document that pro-labor bias in bankruptcy generates higher continuation at the firm-level and a higher probability that workers remain with the same firm, we investigate its impact on labor market outcomes. In a perfectly competitive market where workers are paid their marginal product and there are no adjustment costs, there should be no effect of pro-labor bias on workers’ earnings as long as workers’ productivity is unchanged. If instead workers enter bankruptcy with contracted wages that are above

their current market wage – i.e. they are “entrenched” (Berk, Stanton, and Zechner, 2010) – continuation with the same employer should have a positive impact on labor earnings, because it prevents a contract termination that would make wages converge to their market level. We document, instead, that being assigned to a pro-labor court has a negative effect on average workers’ earnings after bankruptcy. Specifically, workers of firms facing high-pro-labor courts experience 4.5% lower annual labor earnings in the post-bankruptcy period relative to those facing low pro-labor courts within the same judicial district. The effect is primarily driven by differences in wages rather than in the probability of employment.

Our findings are consistent with workers’ continuation at the same firm preventing a better matching. More specifically, in a labor market in which better performing firms pay higher wages to their employees (Card, Cardoso, Heining, and Kline, 2018), financially distressed firms allowed to continue under pro-labor courts might have less rents to share with their workers relative to other employers. Consistent with this interpretation, we present a set of heterogeneous effects indicating that the impact of pro-labor bias on earnings depends on the outside employment opportunities of employees of bankrupt firms. In particular, high skilled workers and workers in white collar professional occupations are those mostly affected by the adverse effects of pro-labor bias. Moreover, we find that the negative impact of pro-labor bias on earnings is concentrated in periods of economic expansions and in relatively thick labor markets, while it is small and non-significant during recessions or in thin labor markets.

The previous results raise the question of why do employees remain with the same employer when – according to our estimates – they could potentially earn more if searching for a new job. We discuss and empirically test potential barriers to reallocation that can rationalize this result. First, workers searching for a new job might be exposed to higher income volatility. Thus, a risk-averse worker would prefer to stay with the current employer than face an uncertain outcome in the labor market. Second, workers starting a new search might face adjustment costs due to geographical relocation or a change in sector or occupation. Finally, workers might decide to remain with their current employer and earn less than their market wage if the labor market is characterized by high information costs. We test these mechanisms in the data. We find no significant evidence of an increase in future income volatility for workers in low-pro-labor courts. We also find that, although workers in high-pro-labor courts are less likely to change municipality in the short-run, these effects are small and not statistically significant, indicating most workers find another job within the same labor market. Similarly, we find no difference in the probability of changing one’s sector or occupation in the post-bankruptcy period. We then explore the role of information costs by using local internet diffusion as a proxy for information frictions in the local labor market. We find that the relative decline in earnings is stronger in areas with limited internet coverage.

We perform several robustness tests. First, we present empirical evidence to corroborate the random assignment of cases within judicial district. We show no significant differences exist in terms of worker, firm, and case-characteristics across high-pro-labor and low-pro-labor courts within a given judicial district and year of filing. Specifically, we test for differences in education, gender, age, tenure, pre-bankruptcy wage and pre-bankruptcy earnings growth, firm size, and share of liquidations. This evidence is consistent with cases being randomly assigned across courts within judicial districts. Second, we show that our results are not explained by workers differentially leaving formal employment in cases assigned to courts with different degrees of pro-labor bias. We show the degree of a court’s pro-labor bias does not predict being in-sample in the post-bankruptcy period. Finally, we show our results are robust to excluding the judicial district of São Paulo. São Paulo is the largest district in the state, has the highest volume of cases, and has two courts that specialize in bankruptcy cases.

### *Related Literature*

Our paper is related to three main streams of the literature. First, it contributes to the literature on distress resolution, and more specifically on the effect of financial distress on employees.<sup>2</sup> Graham, Kim, Li, and Qiu (2019) show bankruptcy is associated with large employee costs and estimate that in the US, an employee’s annual earnings decrease by 10% in the year of bankruptcy and 67% over a five-year period after the bankruptcy. Baghai, Silva, Thell, and Vig (2020) use Swedish administrative data and documents that financially distressed firms lose their most skilled employees, although they do not examine the effect on employee wages. Babina (2019) focuses on entry to entrepreneurship for employees of distressed firms. Relative to this literature, our contribution is twofold. First we provide novel evidence on the effect of bankruptcy on employees in developing countries, where, unlike in the US, liquidations are often the predominant type of bankruptcy resolution. Second, we document the causal effect of pro-labor judicial bias on labor market outcomes.

In addition, our results relate to the literature on the influence of judges’ individual characteristics on the bankruptcy process. From a theoretical perspective, Posner (2005) and Gennaioli and Shleifer (2008) examine how judicial policy preferences affect judges’ biases. In the growing empirical literature, Bris, Welch, and Zhu (2006) examine bankruptcies in Arizona and New York from 1995 to 2001 and find evidence that the particular judges drawn to handle a case differ in terms of the fractions they pay out to creditors, the length of the proceedings, and how they adhere to absolute priority. Bern-

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<sup>2</sup>A related literature examines the effect of financial distress and bankruptcy on firm-level employment. Hotchkiss (1995) shows firms downsize in terms of employment after Chapter 11 bankruptcy, Falato and Liang (2016) document employment cuts following loan-covenant violations, Agrawal and Matsa (2013) find employment decreases by approximately 27% after bond defaults. Relatedly, Caggese, Cuñat, and Metzger (2019) show financial constraints distort firms’ firing decisions, and Brown and Matsa (2016) find that an increase in an employer’s distress results in fewer and lower quality job applicants.

stein, Colonnelli, Giroud, and Iverson (2019) exploit judge heterogeneity in the propensity to convert reorganization (Chapter 11) filings to liquidations (Chapter 7) to examine the effect of liquidation and reorganization on the utilization of assets of distressed firms. Iverson, Madsen, Wang, and Xu (2020) use large corporate Chapter 11 filings in the US and document that judge experience affects the time spent in bankruptcy, the likelihood of reorganization and refiling, and creditor recovery rates. Canayaz and Gustafson (2021) show that liberal judges facilitate business turnover. Chang and Schoar (2013) use judge fixed effects to create a measure of pro-debtor friendliness and estimate its impact on bankrupt firms. Specifically, they show pro-debtor judges lead to worse firm outcomes in terms of firm survival, sales, and employment growth. Our paper differs from the existing work, because it is the first to examine the impact of judicial bias in the application of the bankruptcy law on labor market outcomes at the employee level.

Finally, our paper contributes to the literature that explores the impact of institutional frictions in bankruptcy, with a particular emphasis on the experience of developing countries. The existing literature has studied the financial and real effects of a lack of judicial specialization (Visaria, 2009), court efficiency (Fonseca and Van Doornik, Fonseca and Van Doornik; Rodano, Serrano-Velarde, and Tarantino, 2016; Iverson, 2018; Ponticelli and Alencar, 2016), and political influence (Li and Ponticelli, 2020). Our paper contributes to this literature by introducing a measure of pro-labor judicial bias and studying how it affects bankruptcy resolution and labor market outcomes.

The rest of the paper is organized as follows. In Section II we present the institutional background, describing the Brazilian bankruptcy system and survey evidence on the diffusion of judicial bias. Section III introduces the new measure of pro-labor bias used in the empirical analysis. Section IV describes the data. Section V discuss a simple theoretical framework, lays out the identification strategy and presents the effects of pro-labor bias on labor market outcomes. In Section V.E we present a set of heterogeneous effects to shed light on potential mechanisms behind the key results.

## II INSTITUTIONAL BACKGROUND

In this section, we provide background information on two aspects of our institutional setting: (i) the degree of pro-labor (or pro-debtor) bias characterizing the Brazilian judiciary as evidenced by survey data, and (ii) how the Brazilian bankruptcy system operates – including both its legal framework and rules regarding the assignment of cases to courts.

### II.A JUDICIAL BIAS IN BRAZIL

Arida et al. (2005) argue that, potentially due to its pervasive income inequality, Brazilian society is traditionally characterized by a diffused anti-creditor bias, especially

when contrasted with the positive view of the debtor, who is often described as a job-creator whose financial distress is more the product of unfortunate circumstances than of misguided managerial decisions. Numerous surveys show this bias is deeply rooted in the judicial system. Lamounier and De Souza (2002) conducted an opinion survey of about 500 Brazilian workers in the executive, legislative, and judicial branches of government. The survey results showed 61% of members of the judiciary agreed with the statement that a “judge has to perform a social function, and the quest for social justice justifies decisions in breach of contracts,” whereas only 7% of them declared that “contracts must be enforced independently of their social effects.”<sup>3</sup> By contrast, the majority of respondents of the same survey who were not part of the judiciary said they were in favor of contract enforcement being independent from social justice.

In a similar survey presented in Pinheiro (2003), approximately 700 judges answered the same question. The results showed 73.1% of judges were *more* in agreement with the statement that social justice justifies decisions in breach of contracts than with the statement that contracts should always be enforced.<sup>4</sup> The latter survey also showed the social justice view of the judiciary is broadly shared between both young and old judges (with a higher percentage among younger judges) and tends to be stronger *outside* of the richest and more industrialized states of São Paulo, Rio de Janeiro, Federal District, and Rio Grande do Sul. Because the data used in our paper focus on judicial decisions in São Paulo, our setting can be considered a lower bound of pro-debtor bias present in the Brazilian context.

## II.B THE BRAZILIAN BANKRUPTCY SYSTEM

### II.B.1 *Legal Framework*

Brazilian bankruptcy law shares important similarities with the US Bankruptcy Code by allowing for two types of in-court formal proceedings for insolvent firms, namely, judicial reorganization (“Recuperação Judicial”) and liquidation (“Falência”).

Liquidations are predominantly involuntary proceedings initiated by one of the firm’s creditors, although a debtor that experiences both financial and economic distress has the opportunity to voluntarily request the commencement of formal liquidation proceedings. The procedure is analogous to Chapter 7 of the US Bankruptcy Code. Once a petition for involuntary bankruptcy is filed with the court, the debtor has the opportunity to submit a defense, and/or file for an in-court restructuring within 15 days. If the liquidation case is not dismissed and the court accepts the request, a court-appointed trustee replaces the management, and the debtor’s assets are sold through public auctions, sealed bids, or public proclamations, based on guidance from the judicial trustee. The proceeds are

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<sup>3</sup>Statistics from Lamounier and De Souza (2002) are reported in Arida et al. (2005), Table 8.2, p. 271.

<sup>4</sup>See Table 25, question 8 of the survey, Pinheiro (2003).



used to repay the existing liabilities pursuant to the statutory absolute priority order: (i) labor-related claims (capped at 150 minimum wages per employee), (ii) secured credits, (iii) tax liabilities, and (iv) unsecured claims.

By contrast, reorganizations are initiated only voluntarily by the debtor, and the underlying procedures are largely similar to the ones followed in Chapter 11 of the US Bankruptcy Code. The reorganization process is a court-supervised procedure that was formally introduced in Brazil as part of the 2005 Bankruptcy Law Reform in an attempt to modernize and replace the previously inefficient and rarely used reorganization-like process (“Concordata”) that basically only postponed debt repayment with no renegotiation between parties. The purpose of the judicial reorganization process is to enable economically viable (albeit financially distressed) firms to effectively restructure and overcome insolvency so as to preserve production, employment, and the interests of creditors.<sup>5</sup> The stages and the time frame of the reorganization procedure are shown in Appendix Figure A1.

Following the filing of the reorganization request, the court decides its eligibility based on a set of statutory requirements. In most cases, the decision is primarily based on whether the firm has attached the required documentation to the petition, including current and previous financial statements and a complete list of creditors. An assessment of economic viability is done in a later stage with the participation of creditors. If the request is accepted, the firm is granted an automatic stay on its assets, and creditors are prevented from pursuing their claims or repossessing any collateral for a period of 180 days.<sup>6</sup> In addition, the court appoints a trustee to oversee the proceedings and monitor the debtors’ activities.

Within the first 60 days, the debtor is expected to present a reorganization plan containing (i) a strategy<sup>7</sup> for the recovery of the firm, (ii) estimates of the firm’s long-term economic and financial prospects under the proposed terms, and (iii) an independent appraisal report with the estimated value of the firm’s existing assets. Claims with voting rights and subject to automatic stay are grouped together according to their types: labor claims, secured credits, unsecured credits, and claims from small businesses.<sup>8</sup> Debt-renegotiation offers cannot discriminate between creditors in the same class.<sup>9</sup>

After the reorganization plan is submitted, each creditor has 30 days to raise objec-

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<sup>5</sup>Article 47 of the Brazilian Bankruptcy Law No. 11.101/2005

<sup>6</sup>Brazilian law allows some exceptions to automatic stay during reorganization. For example, claims originated from lease contracts, chattel mortgages and accounts receivable lines of credit are not subject to automatic stay. However, during the first 180 days of the automatic stay, creditors holding these types of claims cannot sell “productive capital goods” (such as production plants, machinery or vehicles) that are deemed essential to the firm’s recovery.

<sup>7</sup>The proposed strategies involve a mix of debt renegotiation, asset divestitures, workforce downsizing and any attempt to obtain additional funding.

<sup>8</sup>Creditors whose claims are not subject to automatic stay do not vote on the reorganization plan but are allowed to veto the sale of any collateral supporting their claims.

<sup>9</sup>The law makes an exception for trade creditors that keep supplying the firm during its reorganization.

tions. If no objections are raised, the plan is considered approved. Otherwise, the court schedules a meeting that includes creditors with voting rights to vote on the proposed plan. If the plan is rejected by creditors that hold more than 50% of the total value of claims in any given class of claims, the firm is liquidated. If the plan is approved, reorganization starts and the firm begins implementing the proposed restructuring plan.<sup>10</sup>

During the next two years, the firm is expected to adhere to the reorganization plan, and creditors must approve any major change that deviates from the initial proposed plan. At the end of this two-year period, if everything has gone according to plan, the court declares the end of the reorganization period and the firm is considered to have recovered from insolvency. Otherwise, if at any point in this period, the firm is considered to have failed to follow the reorganization plan, the court orders the conversion of its reorganization into a liquidation.

### *II.B.2 Assignment of Cases to District Courts*

Bankruptcy cases are adjudicated in state courts. Any liquidation or reorganization request has to be filed in the judicial district that has jurisdiction over the location of a firm’s primary establishment, which is predominantly where the firm’s headquarters are located. This restriction limits the ability of the debtor to engage in forum shopping by filing the petition in jurisdictions perceived as consisting of pro-debtor courts. The same restriction applies to any creditor that considers filing a liquidation request.

Bankruptcy requests are collected by a central office in the debtor’s judicial district (“Distribuidor Central”), which in turn randomly assigns cases to a district court within the judicial district. The random-assignment process of judicial cases (“Distribuição Por Sorteio”) is established in the internal procedures of the justice department of the state of São Paulo. Judicial districts vary with regard to how many courts have jurisdiction over bankruptcy cases. For instance, whereas a case filed in the judicial district of Santos will be assigned to one of 12 general civil courts, bankruptcies filed in Serrana are automatically assigned to its one and only district court.<sup>11</sup>

## III A NEW MEASURE OF “PRO-LABOR” BIAS IN BANKRUPTCY

In this section, we propose a new measure capturing the degree of pro-labor bias of courts dealing with bankruptcy cases. The objective of this measure is to capture the tendency of bankruptcy judges in a given court to issue decisions that favor the preservation of employment in financially distressed firms.

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<sup>10</sup>The court can still allow the firm to continue with its reorganization even though the plan has been voted down. The plan, however, must have been approved by (i) creditors in attendance representing at least half of the total value of claims in all classes, (ii) half of the classes with creditors in attendance, and (iii) more than a third of creditors in the classes in which it was rejected.

<sup>11</sup>See Figure II, where each dot represents a court in the judicial district in the state of São Paulo.

To construct the measure of pro-labor bias, we rely on the text of intermediate judicial decisions in bankruptcy cases filed in the state of São Paulo. In particular, we collected the text of all decisions made by bankruptcy courts until March 2020 regarding reorganization and liquidation cases filed between 2005 and 2017.<sup>12</sup> Bankruptcy judges typically have some discretion when making these intermediate decisions, even when the article of the law on a specific issue is very clear. This freedom leads to instances in which two judges ruling on the same issue and referring to the same article of the law in their decision, make different – and in some cases, opposite – rulings.<sup>13</sup>

One example of a legal provision where courts exercise discretion is Article 49 of the Brazilian bankruptcy law. This article explicitly excludes from the automatic stay specific types of secured claims, including claims originated from lease contracts, chattel mortgages, and accounts-receivable lines of credit. However, judges can deviate from the wording of this provision by considering the collateral of these secured loans a “productive capital good” (e.g., production plants, machinery, or vehicles) that the court deems essential to the firm’s recovery and that therefore cannot be sold by creditors. In these instances, judges often cite Article 47 of the bankruptcy law, which states that a reorganization has the general objective of “maintaining jobs and creditors interests while promoting the preservation of the firm, its social function while stimulating economic activity.” Thus, when ruling against creditors seizing the collateral they are entitled to by law, courts routinely refer to this general objective and argue that limiting bankruptcy protection would harm the firm’s chances of survival and generate job losses.

Our methodology proceeds in two steps. First, we analyze the text of all decisions and identify mentions of specific legal provisions or articles of the bankruptcy law and the civil code that judges can use to exercise their discretion either in favor of or against the continuation of the firm. Second, for each mention of one of these articles, we read the ruling and classify it as being either pro-labor, pro-creditor, or neutral.<sup>14</sup> In the example above, for each mention of Article 49 by a judge in a reorganization case, we read the decision and classify it as “pro-creditor” when the judge allows creditors to seize the assets

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<sup>12</sup>Especially in the course of the reorganization process, in several instances, a court is called to make a decision. For example, in the early stages, courts decide whether to grant bankruptcy protection, rule on the right of particular secured creditors to seize collateral, decide whether trade creditors are allowed to discontinue supply during the stay period, and determine if the 180-days stay period should be extended. In the later stages, it is up to the court to rule on any creditors objections to the proposed plan, decides on whether to uphold the outcomes of creditors’ votes, determines whether any particular actions taken by the debtor’s management merit their removal, and concludes if the reorganization should be resolved or should be turned into a liquidation.

<sup>13</sup>This relative flexibility in interpreting the law was in part granted by design by lawmakers to allow judges to decide based on the specifics of each case while adhering to the general spirit of the law. However, at least to some degree, this flexibility has traditionally allowed judges to make choices more aligned with their preferences and beliefs.

<sup>14</sup>The data collection process involved the creation of three apps that were used by the research assistants to categorize: (a) the outcomes of liquidation cases; (b) the outcomes of reorganization cases; (3) the intermediate judicial decisions into pro-creditor, pro-debtor or neutral. Figure A2 in the Appendix of the paper shows examples of the interface for each of the three apps we created.

given as collateral (as the law prescribes), and as “pro-labor” when the request to seize the collateral was denied. Although the pro-labor decisions are effectively pro-debtor, we use this terminology because judges frequently justify this deviation from the letter of the law by referring to the goal of preserving employment in their rulings. In Table A1 of the Appendix, we provide a detailed description of the legal provisions we searched for and the criteria we used when categorizing the decisions. It also reports some illustrative examples of pro-labor and pro-creditor decisions for each article.

Finally, we aggregate pro-labor and pro-creditor decisions at the court level by assigning a value of 1 to pro-labor decisions and a value of -1 to pro-creditor ones, and then normalize the outcome by the total number of decisions of the judicial district (including neutral ones). Therefore, for a decision at time  $t$  pertaining to subject  $s$  in court  $c$  of judicial district  $j$ , our pro-labor-bias index is computed as

$$\text{Pro-Labor Bias}_{cj} = \frac{1}{N_{cj}} \sum_t \sum_s D_{cjts},$$

in which  $N_{cj}$  is the number of total decisions of court  $c$  in judicial district  $j$  in our sample and  $D_{cjts}$  is the sum of pro-labor and pro-creditor decisions. A pro-labor bias value of 1 implies a court always ruled in a pro-labor direction whenever one of the legal provisions above was mentioned. On the other hand, a value of -1 implies a court always ruled in a pro-creditor direction. We aggregate decisions as the court-level because that is the level of randomization that we are going to exploit in the empirical analysis. Note that mobility of judges is limited across courts in our sample, with 84% of judges only observed in one court during the period under study.

Figure I plots the distribution of the pro-labor measure, whereas Panel A of Table I report summary statistics of the pro-labor measure for the 636 courts that handled bankruptcy cases during the period under study. The pro-labor bias measure has a mean of 0.12 and a median of 0.15, indicating the average court in the state of São Paulo is relatively pro-labor. Figure II shows the geographical variation in pro-labor bias both across and within judicial districts. The upper part of the figure reports a map of the state of São Paulo, with the level of pro-labor bias in each judicial district calculated as the weighted-average of pro-labor bias across the courts in the district.<sup>15</sup> In the lower part of Figure II, we report the list of judicial districts in our sample. Each dot next to the judicial districts’ names represents a court, with the color of the dot indicating the court’s level of pro-labor bias (above vs. below the median in our sample). As shown, substantial variation of the pro-labor bias measure exists within districts, and we exploit this variation for the empirical analysis in Section V.C.

[Insert Figure I Here]

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<sup>15</sup>Where the weights correspond to the share of bankruptcy cases filed in each court.

[Insert Figure II Here]

Next, in panel B of Table I, we document how our measure of pro-labor bias correlates with other observable court characteristics, including measures of court efficiency and incidences of different bankruptcy outcomes. As shown, we find no significant differences between high- and low-pro-labor courts in terms of efficiency as measured by the backlog of pending cases or the average length of reorganization cases.<sup>16</sup> However, important differences exist in other judicial outcomes at the court level. In particular, high-pro-labor courts are more likely to dismiss a liquidation request by a creditor, and less likely to convert a reorganization case into a liquidation. We investigate the relationship between pro-labor bias and case outcomes more formally and exploit the random assignment of cases across courts in Section V.C.

[Insert Table I Here]

## IV DATA

We use two primary data sources in the empirical analysis. First, we manually construct a dataset of bankruptcy requests in the state of São Paulo between 2005 and 2017. Second, we use matched employer-employee records that consist of nearly the universe of formal employment in Brazil from the *Relação Anual de Informações Sociais (RAIS)* from the Brazilian Ministry of Labor (MTE).

### IV.A BANKRUPTCY DATA

We collected information on bankruptcy requests from the electronic records of the *Tribunal de Justiça de São Paulo (TJSP)*, which include detailed information on court decisions related to judicial cases filed and adjudicated in the state of São Paulo. We collected information on the type of bankruptcy petition, the identity of the debtor, the intermediate decisions and the outcome for 6,678 bankruptcy requests filed between 2005 and 2017.

Specifically, the electronic records contain detailed case-level information that includes the filing date, the type of bankruptcy request (liquidation or reorganization), the judicial district and the court to which the case was assigned, the name of the judge responsible for the case, and the names of the claimant and the defendant. Additionally, we collected information on any intermediate court decisions, including the decision date and the decision outcome (e.g., decision to approve the reorganization or to convert the reorganization to liquidation). We follow decision updates to the bankruptcy cases from the time they are filed up to March 2020.

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<sup>16</sup>We can compute an accurate measure of duration for reorganization cases, while the closure of liquidation cases is often not reported in our data.

## IV.B RAIS DATA

Information on linked employer-employee relationships is obtained from RAIS, collected by MTE since 1976. RAIS is a longitudinal administrative dataset that is compiled annually from information collected by formally registered public or private firms and includes comprehensive information on labor contracts. The objective of the RAIS dataset is to administer and monitor access to unemployment insurance and payment of benefits to eligible employees; therefore, firms have strong incentives to provide comprehensive and accurate information in MTE. In addition, control mechanisms are in place to ensure mandatory compliance with the requirements of RAIS. Based on estimates of the MTE, RAIS includes over 95% of formally employed individuals in Brazil. We obtained access to RAIS for the period from 1985 to 2018.

The unit of observation in RAIS is a job entry that is identified by an employee-level identifier (CPF) and an establishment-level identifier (CNPJ), and enables us to track individuals over time and across firms. The firm name has been used to identify firms filing for a bankruptcy request, using information on the debtor's name extracted from the TJSP. In addition, RAIS includes information regarding the start and end date of the specific job entry, occupation type, wage level, and demographic characteristics. RAIS also contains information on the terminations of labor contracts, which allows us to identify exits from the labor force because of retirement or death. The occupation type is coded according to the *Classificação Brasileira de Ocupações* (CBO). At the establishment-level, RAIS contains information on the geographical location of the establishment, and the sector in which the specific establishment operates. At the individual level, available demographic characteristics include gender, age, race, and education level.

## IV.C FINAL SAMPLE

Because our employer-employee dataset ends in 2018, for our empirical analysis, we focus on bankruptcy requests filed between June 2005 (after the bankruptcy law reform of 2005 was introduced) and December 2013, so that employee-level information is available for five years before and at least five years after the bankruptcy request.

We begin with 4,297 bankruptcy requests from June 2005 to 2013 and use debtor names as reported in TJSP to determine their firm-level identifiers. Specifically, for liquidations initiated by one of the creditors, we rely on the name of the defendant, whereas for reorganizations (that are always initiated by the debtor), the relevant entity is identified using the name of the claimant. Based on this information, we were able to collect the firm identification number (or CNPJ) for 2,939 – around 70% – of the bankruptcy filings, including 2,067 liquidation and 872 reorganization requests.

Finally, we match bankrupt firms with the employer-employee dataset. Out of the 2,939 bankruptcy requests, we exclude cases in which the debtor has no employment

information reported in RAIS in the year before the bankruptcy request. Additionally, to identify firms that are economically active, we only include bankrupt firms with at least five employees in RAIS one year before the bankruptcy request. As a result, our final sample includes 1,042 bankruptcy requests.

Table II provides summary statistics for firms filing for bankruptcy, as well as their employees in the year before bankruptcy. The median firm in the sample has 32 employees and a wage bill of R\$547,536. The majority of firms are in the manufacturing and the retail sectors.

[Insert Table II Here]

## V EMPIRICS

### V.A FRAMEWORK AND HYPOTHESES DEVELOPMENT

Before presenting the identification strategy and our empirical findings, in this section we discuss a brief framework based on the existing literature to guide the empirical analysis. We contribute to the existing empirical literature by measuring the effects of judicial bias in bankruptcy on labor market outcomes. We start in Section V.C by documenting that, consistent with previous literature, pro-debtor judicial bias is associated with a higher likelihood of firm continuation (Chang and Schoar, 2013). We also document that workers of firms allocated to high pro-labor courts are more likely to keep working for the same firm.

After establishing this first stylized fact, in Section V.D, we study the effects of judicial bias favoring firm and employee continuation on employees' earnings. The potential impact of bias-induced continuation on labor market outcomes is far from obvious.

First, pro-labor bias might have *no effect* on workers' earnings. This is the outcome we expect in a setting in which workers are paid their marginal product and there are no adjustment costs. In such setting, as long as a worker's productivity is unchanged, an exogenous shock to her probability of continuation with the same employer would not generate a differential change in earnings.

Second, pro-labor bias might have a *positive* effect on workers' earnings. For example, in a setting in which workers are entrenched, they enter bankruptcy with contracted wages that are above their current market wage (Berk et al., 2010). This would predict that being assigned to a high pro-labor courts has a positive impact on labor earnings, because it prevents a contract termination that would make wages converge to their market level.

Third, pro-labor bias might have a *negative* effect on workers' earnings if continuation with the same firm prevents a better matching between the worker and another employer. A large literature in labor economics, for example, has documented a strong connection

between firm performance and wages paid to its employees.<sup>17</sup> If low-productivity firms are more likely to continue under pro-labor courts, these firms have less rents to share with their workers relative to other employers in the market. Thus, by remaining employed with the same firms, workers might earn lower wages than they would have by looking for another employment.

Empirically, the effect of judicial bias on employees' earnings is an open question in the literature. In the next section we present the identification strategy that we are going to use to address it.

## V.B IDENTIFICATION STRATEGY

In this section, we introduce our identification strategy to estimate the causal effect of the measure of pro-labor bias presented in Section III on the earnings' dynamics of workers of financially distressed firms. The main challenge we face is that the degree of pro-labor bias of courts in a given region might be correlated with other characteristics of that region and of the firms that operate in it. For example, if regions with more pro-labor courts are also characterized by poorly functioning local labor markets, differences in workers' outcomes after bankruptcy could be driven by differences in the type of job opportunities that workers face. Another potential concern is selection between firms and courts. In particular, relatively less productive firms might decide to file for bankruptcy in courts with a more pro-labor reputation, because doing so might lead to a higher probability of continuation.

To deal with these challenges, we rely on two characteristics of our institutional setting. First, as described in Section II.B.2, Brazilian bankruptcy law requires any liquidation or reorganization request to be filed in the judicial district where a firm's primary establishment is located. Second, bankruptcy cases in the state of São Paulo are randomly assigned across courts within a judicial district. These two characteristics ensure that, when comparing cases filed within the same judicial district and year, firms cannot choose which court will handle their case, and the degree of judicial bias they are expected to face is plausibly orthogonal to their initial characteristics. Exploiting these features, our identification strategy compares the labor market outcomes of workers whose firms filed for bankruptcy in the same judicial district and year and whose cases were assigned to courts with different degrees of pro-labor bias.

To examine the impact of pro-labor bias on employees' labor market outcomes, we employ a difference-in-differences specification, which uses the year of bankruptcy filing as a source of time variation, and the degree of pro-labor bias of the court assigned to each case within a district as a source of cross-sectional variation. To exploit the random assignment of cases, we restrict our focus to judicial districts that have multiple

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<sup>17</sup>For example, see Card et al. (2018) for a review.



courts with at least one classified as high and one classified as low pro-labor.<sup>18</sup> Our main specification at the employee level is as follows:

$$Y_{icjk,t} = \alpha_i + \alpha_t + \alpha_{jk} + \beta_1 Post_k + \beta_2 Post_k \times I_{cj}^{HighPro-Labor} + \beta X'_{icjk,t} + \varepsilon_{icjk,t}, \quad (1)$$

where  $Y_{icjk,t}$  is an outcome for individual  $i$  in calendar year  $t$  – for example, annual labor earnings – which was employed by a bankrupt firm whose case was allocated to court  $c$  in judicial district  $j$  in year  $k$ . Individuals are assigned to bankrupt firms based on their employment in the year before the bankruptcy case was filed. Our main coefficient of interest is  $\beta_2$ , which captures the effect of being assigned to a high-pro-labor court relative to a low-pro-labor court on workers’ outcomes in the post-bankruptcy period. The specification in Equation (1) also includes individual fixed effects ( $\alpha_i$ ), calendar-year fixed effects ( $\alpha_t$ ), and judicial district interacted with bankruptcy year fixed effects ( $\alpha_{jk}$ ). Thus, the relevant variation identifying the  $\beta_2$  coefficient derives from differences across workers whose employers filed for bankruptcy in the same judicial district and year, but whose cases were randomly assigned to courts with different levels of pro-labor bias. For each worker, we focus on the five-year period before and the five-year period after the bankruptcy event. In selecting the timing of the bankruptcy, we use the filing date as provided by the TJSP.

In Table III, we formally test whether workers whose employer got assigned to a high- versus a low-pro-labor court differ in terms of observable characteristics. The results reported in column (1) demonstrate that workers’ characteristics – including years of education, gender, age, tenure, and wage level – do not predict whether a worker’s employer will face a high- or a low-pro-labor court. Note this specification includes judicial-district interacted with bankruptcy year fixed effects. Thus, the small and non-significant coefficients on workers’ characteristics are consistent with random assignment of cases across courts within a district. In column (2), we show workers whose employers are assigned to courts with different levels of pro-labor bias exhibit similar pre-existing trends in wage growth in the five years before bankruptcy filings. Finally, in column (3), we include both worker characteristics and pre-existing wage growth in a single regression. The magnitudes of all estimated coefficients are small, and none of them statistically significant at standard levels. However, in the empirical analysis, we still augment Equation (1) with (time-varying) individual characteristics and show such controls have virtually no impact on the magnitude of the coefficient of interest.<sup>19</sup> Moreover, column (4) shows firm size

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<sup>18</sup>Out of the 218 judicial districts in our sample, 127 have multiple courts and 91 have a single court in charge of bankruptcy cases. Out of the 127 districts with multiple courts, 86 districts encompass courts with high and low degrees of judicial bias. Note that these 86 districts tend to be the largest in our sample both in terms of judicial decisions observed (85.6%) and in terms of bankruptcy cases they deal with (87.9%).

<sup>19</sup>Specifically,  $X'_{icjk,t}$  in Equation (1) includes the following time-varying worker characteristics: Years

does not predict whether the firm will face a high- or low-pro-labor court, which further supports the random assignment of cases to courts within judicial districts. Finally, column (5) shows the liquidation share is similar among high- and low-pro-labor courts; thus, we do not observe any pattern that the type of bankruptcy filing predicts what type of courts the case is assigned to.

[Insert Table III Here]

## V.C THE EFFECT OF PRO-LABOR BIAS ON BANKRUPTCY RESOLUTION AND FIRM AND WORKERS' CONTINUATION

We start by studying the effect of pro-labor bias on bankruptcy resolution. As documented in Section III, courts with high-pro-labor bias tend to be less inclined to subsequently liquidate a firm in reorganization or to approve a liquidation request by creditors. Therefore, we proceed to formally examine the effect of pro-labor bias on bankruptcy resolution by estimating the following specification:

$$Y_{bcjk} = \alpha_{jk} + \delta \times I_{cj}^{HighPro-Labor} + \varepsilon_{bcjk}, \quad (2)$$

where  $Y_{bcjd}$  is a case-level outcome for case  $b$ , filed in court  $c$  of judicial district  $j$  in year  $k$ . The coefficient of interest is  $\delta$ , which captures the impact of a high level of pro-labor bias on bankruptcy resolution. Note Equation (2) includes judicial-district interacted with bankruptcy year fixed effects ( $\alpha_{jk}$ ). Thus, given the random allocation of cases across courts within a district, we interpret the coefficient  $\delta$  as the causal effect of our pro-labor-bias measure on case-level outcomes.

Panel A of Table IV reports the results of estimating Equation (2). In columns (1), (3), and (5), we use a continuous leave-one-out court-level measure of pro-labor bias, in columns (2), (4), and (6), we use an indicator variable that is equal to one for courts with a pro-labor-bias measure larger than the median value, and 0 otherwise.

[Insert Table IV Here]

We start by focusing on reorganization cases that were filed in São Paulo from 2005 to 2017. In particular, in columns (1) and (2), we examine the relation between pro-labor bias and the probability that a reorganization case is converted into a liquidation. We find reorganization requests allocated to high-pro-labor courts are associated with a significantly lower incidence of conversions to liquidation. The magnitude of the coefficient estimate in column (2) indicates reorganization cases filed in high-pro-labor courts are

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of Experience (defined as Age - Years of Education - 4), Years of Experience  $\times$  Years of Education, and Years of Experience  $\times$  Female indicator. Note the Education and Gender variables are not included in the estimation, because they are constant at the individual level and thus absorbed by the worker fixed effects.

9.1% less likely to be converted into liquidations. In columns (3) and (4), we focus on case length, as measured by the logarithm of the number of days between the filing of the reorganization request and resolution of the case. We find cases assigned to courts with high-pro-labor bias have, on average, a similar duration to those assigned to low-pro-labor-bias courts. That is, courts with different bias levels do not seem to differ in terms of their efficiency (within a judicial district). Finally, in columns (5) and (6), we focus on liquidation cases. We document that liquidation requests filed in pro-labor-bias courts are more likely to be dismissed. Specifically, the coefficient estimate in column (6) suggests the incidence of a liquidation-request dismissal is 30% higher in high-pro-labor courts.

### *V.C.1 Firm and Workers' Continuation*

In the second step of our analysis, we explore the effect of pro-labor bias on firm and employee continuation. Before presenting the multivariate analysis, we provide a set of stylized facts that emerge from the raw data. Figure III shows the share of firms that continue to operate in each post-bankruptcy year, splitting the sample into firms that were assigned to low- versus high-pro-labor courts. As shown, the share of continuing firms is higher in high-pro-labor courts (blue bars) than in low-pro-labor courts (red bars). Five years after the bankruptcy filing, the share of continuing firms is 42% and 32%, respectively.

[Insert Figure III Here]

The analysis in Panel B of Table IV shows a similar result. Columns (1)-(3) report the effects of pro-labor bias on firm continuation using a firm-level version of Equation (2). The outcome variable in columns (1)-(3) is an indicator that is equal to one in the year in which firms report non-zero employment in RAIS, and zero otherwise. The estimates show that firms whose bankruptcy case was assigned to high-pro-labor courts are less likely to exit over the five-year post-bankruptcy period. In particular, the magnitudes of the coefficient estimates indicate the effects are economically large, with firms in high-pro-labor courts having around a 7% higher probability of continuation in the five-year period after the bankruptcy filing. Moreover, the results hold both for liquidations (column (2)) and reorganizations (column (3)).

Next, we examine the effect of pro-labor bias on employee continuation with the bankrupt firm. As in the case of firms, we start from the raw data. Figure IV focuses on workers that are still employed with the distressed firm in the year before the bankruptcy filing. The figure reports the share of such employees who continue to be employed with the firm each post-bankruptcy year, splitting the sample into firms that were assigned to low- versus high-pro-labor courts. As shown, the share of employees who stay in the

distressed firm is higher for firms assigned to high-pro-labor courts (blue bars) than for firms assigned to low-pro-labor courts (red bars). This difference is larger in the early years after the bankruptcy filing.

[Insert Figure IV Here]

We test the effect of pro-labor bias on the probability of staying with the current employer in Table V. The results are reported in columns (1)-(3) and show that employees of insolvent firms whose cases were assigned to a high-pro-labor court are more likely to stay with the same employer in the post-bankruptcy period. The probability of staying is about 9% higher in the first year, 8% in the first two years and declines to 3% – but still statistically significant – five years after bankruptcy. In column (4) we look at the number of months between the date of the bankruptcy filing and the first separation from the current employer as an outcome. As shown, workers assigned to high-pro labor courts stay on average about 4.5 months longer with the current employer before the first separation. Column (5) shows that, even among employees that eventually took a job at a new firm, those assigned to high pro-labor courts stayed on average about 2.5 months longer with the current employer before transitioning to the new employer.

[Insert Table V Here]

#### V.D THE EFFECT OF PRO-LABOR BIAS ON LABOR MARKET OUTCOMES

Overall, the results presented in Section V.C document that pro-labor bias in bankruptcy generates higher continuation at the firm-level and a higher probability that workers remain with the same firm. What is the impact of higher continuation on labor market outcomes?

The main results from estimating Equation (1) are reported in Table VI. We begin our analysis in Panel A by examining the impact of pro-labor bias on workers' earnings in the post-bankruptcy period.<sup>20</sup> The estimated coefficient on the *Post* indicator variable ( $\beta_1$ ) reported in column (1) indicates that, on average, workers whose employers are assigned to low-pro-labor courts experience a decline of 8.1 log points (or 8.4%) in annual earnings in the five-year period after the bankruptcy request relative to their earnings in the pre-bankruptcy period. The estimated coefficient on the interaction term ( $\beta_2$ ) captures the difference in the change in labor earnings between employees facing high- versus low-pro-labor courts. The magnitude of the estimated coefficient on the interaction term is -0.048, which indicates the decline in earnings for workers of firms assigned to high-pro-labor courts is 4.9% larger than the one experienced by workers of firms assigned to

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<sup>20</sup>We measure earnings as the logarithm of an individual's aggregate annual earnings across all employers. Earnings include wages, bonuses, tips, commissions, and allowances for commuting costs, and contributions to social security, pension plans, healthcare, and unemployment insurance. Private benefits offered by firms (e.g. private retirement, healthcare) are not common in Brazil.

low-pro-labor courts. This finding indicates 13.5% lower annual earnings, on average, in the post-bankruptcy period. Given the random assignment of cases across courts within a judicial district, these estimates can be interpreted as the causal effect of our measure of pro-labor bias on workers' earnings. In column (2), we augment the specification with the set of individual characteristics described in Section V.B. As shown, the magnitude of the coefficient is stable when including these additional controls.

[Insert Table VI Here]

In Figure V, we explore the timing of the effect. We find that the relative losses in earnings from facing a high-pro-labor court materialize within the year of the bankruptcy request, and are persistent in the first five years post bankruptcy.

[Insert Figure V Here]

Because bankruptcy requests are typically followed by a rigorous restructuring process that potentially involves the liquidation of the firm, the observed post-bankruptcy earnings decline likely reflects displacement and wage declines. Therefore, to identify the drivers of this earnings adjustment, we decompose changes in earnings into a wage component and a labor market participation component. The wage component captures any adjustment driven by changes in average monthly wages.

The results are reported in columns (3) to (6) of Table VI. The results indicate the differential impact of pro-labor bias on earnings is primarily driven by employees in high-pro-labor courts earning, on average, lower wages in the post-bankruptcy period. The magnitude of the estimate of the interaction term in column (4) indicates a significantly larger decline of 3.4 log points in average wages for employees facing high pro-labor bias courts. Interestingly, the estimates in columns (5) and (6) indicate that, on average, workers facing high-pro-labor courts actually experience a relative decline in the number of employment months in the post-bankruptcy period; however, this coefficient is smaller than the effect on wages, and not statistically significant. We think this negative coefficient can be explained by a higher chance of failed reorganizations in high-pro-labor courts, as documented in the dynamic effects discussed below.

In Figures VI and VII, we explore dynamics of wages and employment, respectively, around the bankruptcy filing. We find the relative losses in wages from facing a high-pro-labor court begin during the year of the bankruptcy request and persist over the next five-year horizon. In terms of employment, we do not observe relative differences in dynamics in the five-year window around the bankruptcy request. We observe a relative decline in the probability of employment in the second year after bankruptcy filing. Note that companies that file for reorganization have two years to complete their reorganization plan. At the end of the two years, the creditors can request the liquidation of the firm if they consider the plan unsuccessful. In this sense, a potential interpretation of this

pattern is that reorganization cases allocated to high-pro-labor courts are more likely to be unsuccessful.

[Insert Figure VI Here]

[Insert Figure VII Here]

One potential concern with the results reported in Table VI is that lower-quality (and lower-paid) employees are more likely to exit the sample upon bankruptcy in low-pro-labor courts. To explore the role of potential differences in selection between high- and low-pro-labor courts, in Figure VIII, we focus on workers who were employed by the bankrupt firms in the year before bankruptcy, and plot the share of them observed in our data in each post-bankruptcy year. The figure shows employees whose employer is assigned to high- vs low-pro-labor courts are equally likely to leave the sample. We test this more formally in Appendix Table A2, which shows pro-labor bias does not predict being in-sample at different horizons after bankruptcy.<sup>21</sup> Finally, in Appendix Table A3, we replicate our main results from Table VI, excluding the judicial district of São Paulo. São Paulo is the largest district in the state and, more importantly, has two courts specialized in bankruptcy cases.<sup>22</sup> As shown, our results are robust to excluding this district.

[Insert Figure VIII Here]

## V.E HETEROGENEOUS EFFECTS

In the previous section, we document that workers of firms assigned to high-pro-labor courts experience lower post-bankruptcy earnings, and that this effect is mostly driven by wages. This result lends support to the idea that, by favoring continuation, judicial bias in bankruptcy can prevent better matching for workers of financially distressed firms. In this section, we present a set of additional heterogeneous effects, which are meant to capture to what extent our results depend on the outside options of workers in financially distressed firms. The rationale of these tests is that pro-labor bias that favors the continuation of worker-firm relationships should be more costly for workers that – based on their characteristics – have access to better alternative employment opportunities. First, we study to what extent the results vary across workers with different initial skill-levels and occupations. Second, we test whether the effects differ depending on the labor market size, the business cycle or the size of the firm.

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<sup>21</sup>In Section V.E.1, we document that the negative effect of pro-labor bias on future earnings also applies *within* skill-level categories of workers, which additionally eases the concern regarding differential selection of workers across courts with different bias.

<sup>22</sup>These two courts are classified as low pro-labor according to our measure.

### *V.E.1 Heterogeneous Effects by Skill and Occupation*

We start by studying heterogeneous effects by skill and occupation in Panel A of Table VII. In columns (1) and (2) we compare the post-bankruptcy earnings effects of pro-labor bias on high-skilled and low-skilled workers. To proxy for skill, we use information on educational attainment of the individual as reported in RAIS. Specifically, we define as high-skilled any employee that has completed at least high-school education.

[Insert Table VII Here]

Two main findings emerge from the analysis. First, the effect of bankruptcy on employee earnings is negative and large for low-skilled employees (about 9.5 log points), whereas it is small and statistically insignificant for high-skilled labor. These findings are consistent with the fact that, absent pro-labor bias, or when courts are more likely to stick to the wording of the law, the cost of bankruptcy in terms of employees' earnings disproportionately falls on low-skilled labor, whereas high-skilled workers are better able to absorb the shock and find employment that guarantees similar earnings. Second, pro-labor bias imposes additional costs on both types of workers. In terms of magnitude, the relative decline in earnings is larger for high-skilled employees than for low-skilled workers (5.8 vs 3.7 log points), indicating that continuation with the same employer might be particularly costly for individuals with higher human capital.

Next, in columns (3) to (6), we focus on employees with different roles within the firm. We classify employees into occupational categories by exploiting information on the occupational code assigned to the labor contract at  $t = -1$ . Specifically, we categorize employees into Managers, Professionals, Clerks, and Blue-Collar Workers.<sup>23</sup>

We begin by examining earnings changes for managers. On the one hand, managers are high-skilled individuals and are expected to have better outside options. On the other hand, bankruptcies may lead to significant reputational costs for managers by holding them responsible for the firm's distress. This implies that in the post-bankruptcy period, managers may encounter adverse labor market outcomes, including increased displacement, occupational downgrading, and non-employment due to negative signaling or a stigma effect (e.g., Vishwanath, 1989). The results in column (3) show that managers experience the largest decline in average earnings after bankruptcy (-11.8 log points) among all occupational categories. This finding is consistent with labor markets disciplining managers who were displaced due to bankruptcy, pointing to the existence of a stigma effect.<sup>24</sup> However, the degree of pro-labor bias does not play a role in their post-bankruptcy earnings trajectory.

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<sup>23</sup>Each category corresponds to the following occupational categories in the RAIS data (numbers refer to the first or the first two digits of the CBO occupation code): Managers: 12-13-14, White-Collar Professionals: 2-3, White-Collar Clerks (4-5), Blue Collar Workers: 6-9.

<sup>24</sup>In the first year of the bankruptcy, 53% of managers are displaced and 57% experience occupational downgrade by reallocating to non-managerial positions.

In columns (4) and (5) we focus on white collar workers, which we split into two categories: professionals and clerks. The first category includes relatively high-skill individuals with white-collar jobs – such as engineers and specialized technicians – and the second category includes more administrative positions, such as administrative assistants. Finally, in column (6), we focus on blue-collar workers. Two findings emerge. First, the average effect of bankruptcy when facing low-pro-labor courts is negative for all categories of workers, and declining with the average skill level of workers within each category; blue-collar workers experience larger declines than clerks, and clerks experience larger declines than professionals. However, when studying the differential effect of pro-labor bias, we find that white collar professionals experience the largest relative decline in earnings. Notice that professionals are also the category that plausibly has access to better alternative employment opportunities relative to clerks and blue collar workers.

### *V.E.2 Heterogeneous Effects by Labor Market Size, Economic Cycle and Firm Size*

Next, we study how the effects of pro-labor bias on employee earnings depend on features of the economy that capture the existence of better employment opportunities. Specifically, we focus on cross-sectional variation stemming from labor market size, economic cycles and firm size. The results are reported in Panel B of Table VII.

In columns (1) and (2), we estimate Equation (1) separately for employees of bankrupt firms operating in labor markets of different size. As a proxy for labor market size we use the total number of workers in the microregion where the employee is located, and consider as large those labor markets with number of workers above the median.<sup>25</sup> The existing literature has documented that adjustment costs are lower in larger labor markets (Diamond, 1982). Consistent with this idea, we find that the negative impact of bankruptcy on the earnings of workers assigned to low-pro-labor courts is twice as large in small labor markets than in large ones. However, consistent with continuation preventing better matching, pro-labor bias in bankruptcy is relatively more costly for employees in larger labor markets, which are likely to have better outside employment opportunities.

In columns (3) and (4), we repeat the analysis for employees whose firms are located in districts that experience positive versus negative GDP growth. First, the coefficients on the *Post* dummy show that the negative impact of bankruptcy on the earnings of workers assigned to low-pro-labor courts are more than four times larger in recessions than in periods with positive GDP growth (6.5-log-point decline in earnings in growth periods versus 32-log-point decline in recessions). Second, the negative impact of being assigned to a high-pro-labor bias court on earnings is only present during periods of positive economic growth, while it is muted during recessions. This is consistent with higher continuation negatively affecting employees' earnings when the outside employment opportunities are

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<sup>25</sup>Microregions are an administrative division of Brazil above municipalities. They are comparable to MSAs in the US.



better.

Finally, in columns (5) and (6), we split our sample of employees in two groups based on median firm size. Consistent with existing evidence using US data (Graham et al., 2019), we find that employees of smaller firms assigned to low pro-labor courts experience significantly larger declines in earnings after bankruptcy relative to employees of larger firms (11.4 versus 4.3 log points). However, the negative effect of pro-labor bias on earnings is concentrated among employees of large firms. In other words, remaining with the same low-productivity firm is very costly for employees in large firms, who tend to acquire general skills that can be deployed in other firms. On the other hand, employees of smaller firms tend to benefit from higher pro-labor protection in bankruptcy, potentially due to their limited job opportunities outside of their current employer.

Overall, the results indicate that the effect of pro-labor bias can be different depending on the outside employment opportunities of employees of bankrupt firms.

## V.F BARRIERS TO REALLOCATION

The results presented in the previous section raise the question of why employees assigned to high-pro-labor courts would decide to stay with their current employer when they could potentially earn more by moving to other firms. In this section, we discuss and empirically test potential mechanisms that can rationalize this finding. First, workers searching for a new job might be exposed to higher income volatility. Thus, a risk-averse worker would prefer to stay with the current employer than face an uncertain outcome in the labor market. Second, workers starting a new search might face adjustment costs due to geographical relocation, or a change in sector or occupation. Finally, workers might decide to remain with their current employer and earn less than their market wage if the labor market is characterized by high information costs. We test these mechanisms in the data.

In Panel A Table VIII, we test whether workers in firms assigned to high-pro-labor-bias courts face higher income volatility. In column (1), we measure income volatility as the coefficient of variation of log earnings. In columns (2)-(4), the dependent variable is an indicator equal to one if the change in the worker's earnings over different time windows is in the lower 10th percentile, and zero otherwise. We find no significant evidence of higher future income volatility for workers in low-pro-labor courts, nor that they are more likely to experience more extreme declines in labor income.

[Insert Table VIII Here]

In Panel B of Table VIII we test whether workers in firms assigned to high-pro-labor courts face higher adjustments costs. To measure adjustment costs, we examine whether employees move across locations, change occupations, or change the industry in which they

are employed. In columns (1) and (2), the dependent variable is an indicator equal to one if the worker moves to a different region (municipality or micro-region, respectively), and zero otherwise. We find that although workers of firms assigned to high-pro-labor courts are less likely to change locations in the short-run, these effects are small and not statistically significant, indicating most workers find another job within the same geographical area. In columns (3) and (4), the dependent variable is an indicator equal to one if the worker changes occupations or industries, respectively, and zero otherwise. We find no difference in the probability of changing sectors or occupations in the post-bankruptcy period. Of course, our analysis of adjustment costs is limited to job characteristics observable in the RAIS data. Thus, our measures cannot capture non-monetary costs that individuals associate with job change.

Finally, in Panel C of Table VIII, we explore the role of information costs. To this end, we use local diffusion of the internet as a proxy for information frictions in the local labor market. We repeat our main specification estimating Equation (1) for areas with high internet diffusion and areas with low internet diffusion.<sup>26</sup> We find the relative decline in earnings is stronger in areas with limited internet coverage. In areas with low internet diffusion, workers of firms assigned to high-pro-labor courts have 8.9% lower annual labor earnings relative to workers in low-pro-labor courts in the post-bankruptcy period. This difference is almost 4 times smaller in economic magnitude and not statistically significant in areas with high internet diffusion. This finding is consistent with the idea that when information costs are high, individuals limit their search and are more likely to stay with their current employer, even when their market wage is higher than their wage with the current employer. Of course, internet diffusion might be correlated with other market characteristics, and might matter only in relatively thick labor markets. Thus, in Appendix Table A4 we study the heterogeneous effects of internet diffusion conditional on market size. As shown, scarce internet access is particularly costly in large labor markets, while it has a small and non significant effect in small ones. Overall, our empirical findings are consistent with workers in high-pro-labor courts being more likely to settle for wages lower than their market wage, due to incomplete information.

## VI CONCLUDING REMARKS

Bankruptcy institutions play an important role in the reallocation of production factors of financially distressed firms and have broader implications for economic growth and aggregate productivity. An important friction that has received little attention in the context of developing countries is judicial bias in the interpretation of the law. In particular, judges may disproportionately consider the adverse effects of liquidating a firm on

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<sup>26</sup>We measure internet diffusion at the judicial district level based on the number of municipalities that are served by an internet provider using the 2005 municipality survey from IBGE.

employees and delay the liquidation of insolvent firms, even if doing so means deviating from the actual wording of the law.

In this paper, we used detailed hand-collected information on the universe of bankruptcy cases filed in the state of São Paulo between 2005 and 2017 to understand how pro-labor bias affects bankruptcy resolution and employees' labor market outcomes. We start by constructing a measure of pro-labor bias based on all intermediate decisions taken by the judges in charge of each bankruptcy case. This approach allows us to observe whether judges deviate from the letter of specific articles of the bankruptcy code in order to facilitate the continuation of an insolvent firm. We aggregate these intermediate decisions to create a measure of pro-labor judicial bias at the court level.

Exploiting the random assignment of bankruptcy cases across courts within a judicial district, we document that courts with higher pro-labor bias tend to facilitate the continuation of insolvent firms and of firm-employee relationships. What is the effect of higher continuation on employees' earnings? Our findings indicate that workers of firms facing high-pro-labor courts experience 4.5% lower annual labor earnings in the post-bankruptcy period relative to workers of firms facing low-pro-labor courts within the same judicial district. Lower earnings are driven by relatively lower wages rather than by variation in employment status.

This result lends support to the idea that, by favoring continuation, judicial bias in bankruptcy can prevent better matching for workers of financially distressed firms. Our analysis also indicates that this negative effect of pro-labor bias on workers' earnings is not present during recessions, when outside options in the labor market are plausibly scarcer. This should be taken into account when using our results to evaluate recent temporary changes in insolvency regimes adopted by governments to mitigate the economic impact of COVID-19.<sup>27</sup>

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<sup>27</sup>These changes range from extending the automatic stay periods to temporarily preventing creditor actions against firms and suspending the obligation to file for bankruptcy under certain conditions. For example, the Brazilian government prohibited creditors from declaring a debtor bankrupt for a 60-day period starting March 20, 2020, and introduced a 90-day suspension for all obligations established in judicial reorganization plans.

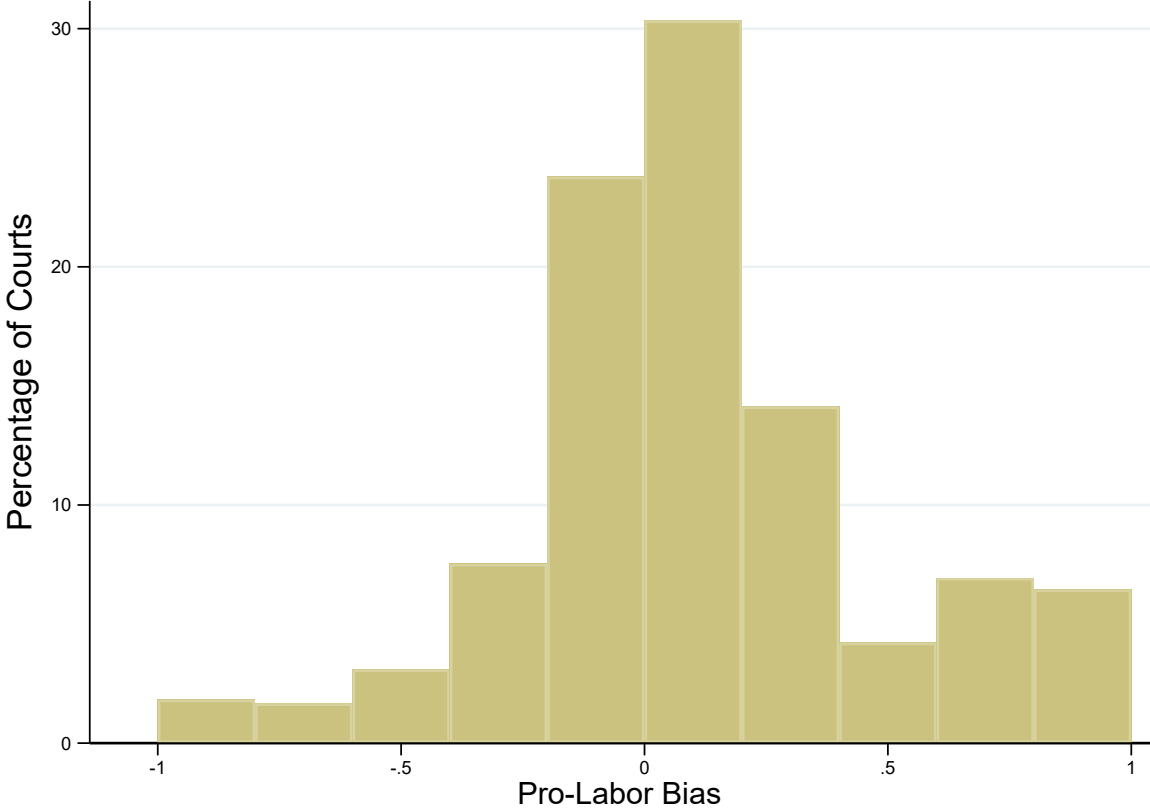
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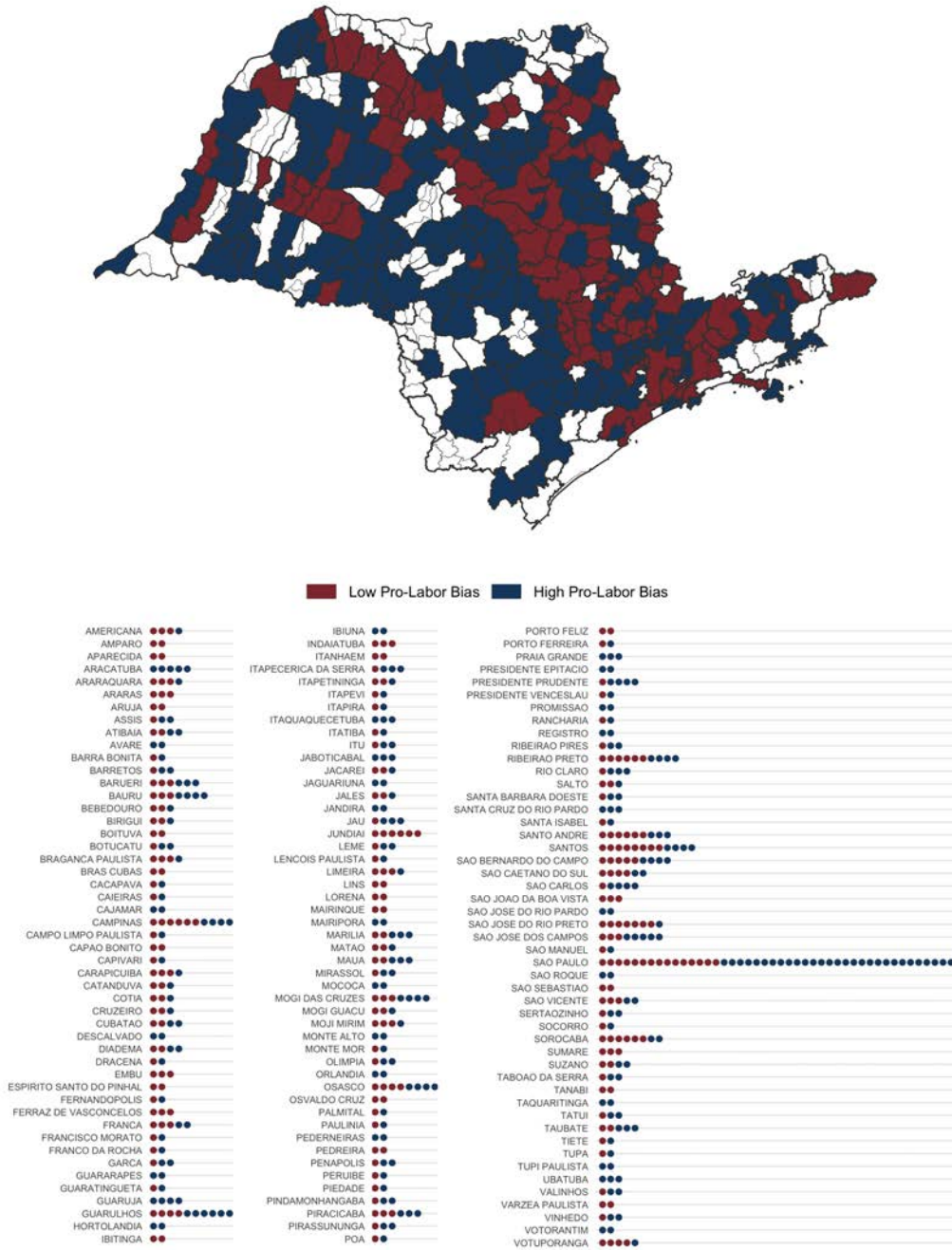
FIGURES

FIGURE I: PRO-LABOR-BIAS MEASURE



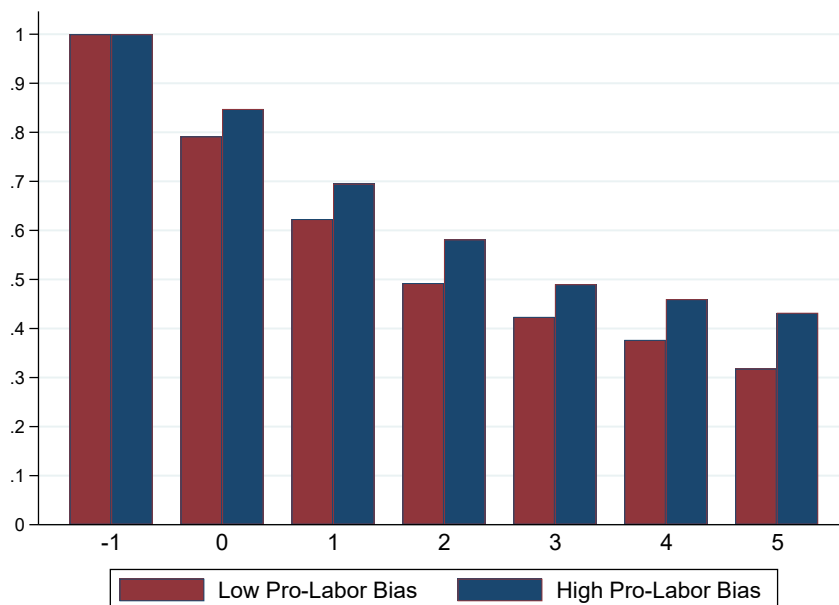
Notes: The figure reports the percentage of courts by different bins of pro-labor bias.

FIGURE II: PRO-LABOR BIAS BY JUDICIAL DISTRICT



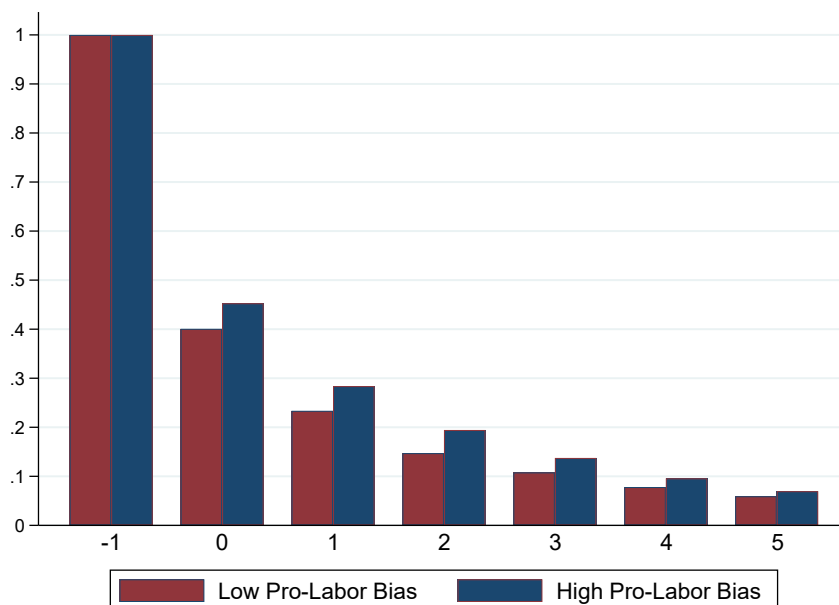
**Notes:** The upper part of the figure reports a map showing the geographical distribution of our measure of pro-labor-bias across judicial districts in the state of São Paulo. The lower part of the figure reports the number of courts in each judicial district (each court represented by a dot), with the measure of pro-labor bias associated with each court. The blue color represents high-pro-labor judicial districts (upper figure), or courts (lower figure). We classify as high-pro-labor courts those with pro-labor measures above the median court-level pro-labor measure. The pro-labor-bias level of each district is calculated as the weighted average of the bias of its courts, where the weights are the number of bankruptcy cases. We classify as high-pro-labor districts those with pro-labor measures above the median.

FIGURE III: CONTINUATION OF FIRMS WITH BANKRUPTCY REQUESTS



**Notes:** The figure reports the share of firms that continue to operate each post-bankruptcy period by the level of pro-labor bias.

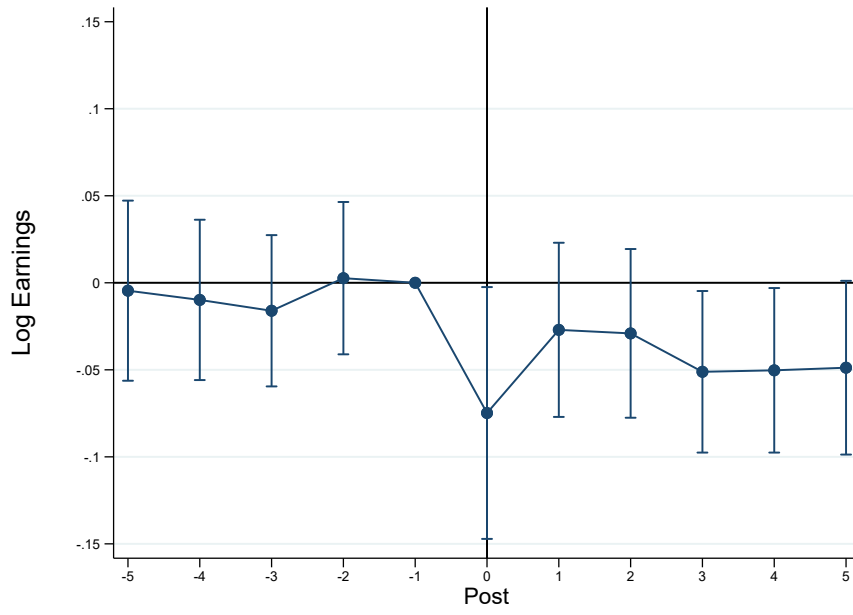
FIGURE IV: STAYERS IN FIRMS WITH BANKRUPTCY REQUESTS



**Notes:** The figure reports the share of employees who continue to be employed by bankrupt firms each post-bankruptcy period by the level of pro-labor bias.

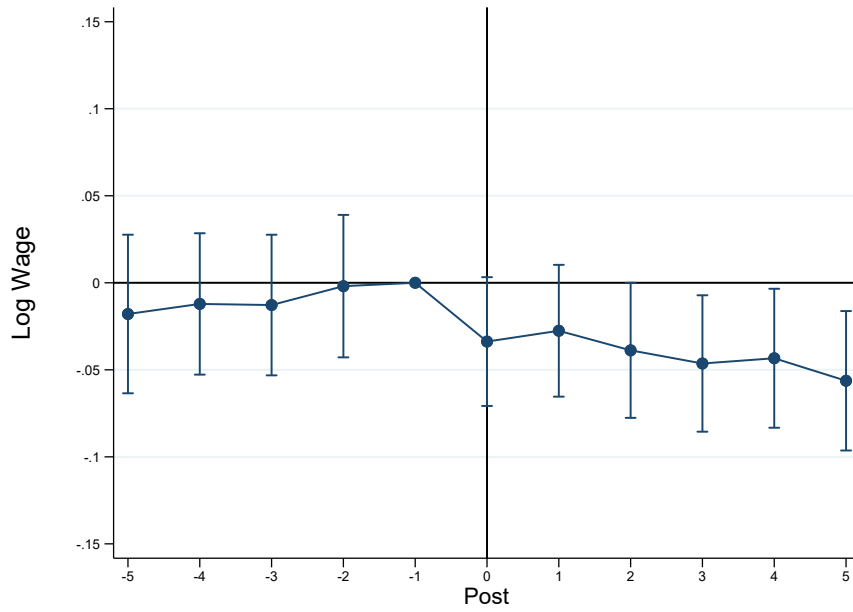


FIGURE V: EARNINGS DYNAMICS



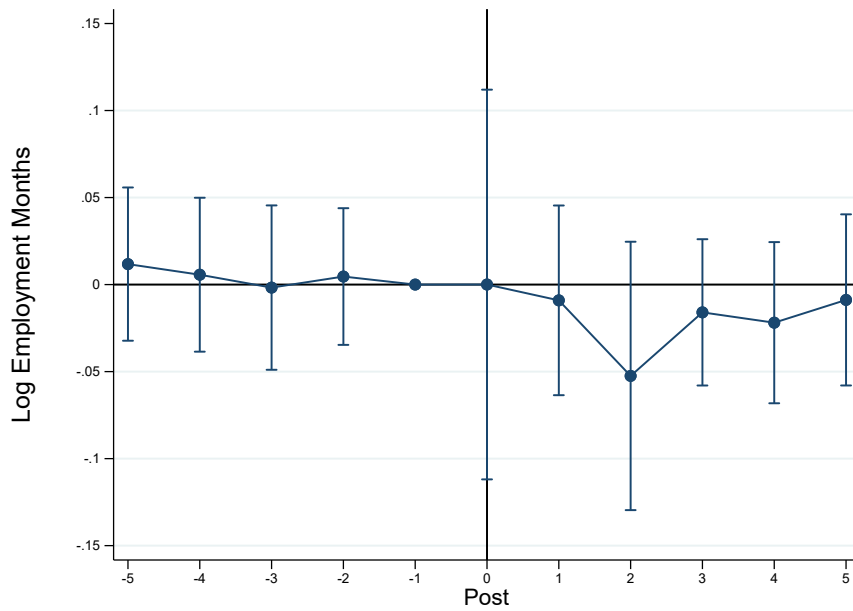
**Notes:** The figure reports the dynamics of earnings in the five-year window around the bankruptcy filing.

FIGURE VI: WAGE DYNAMICS



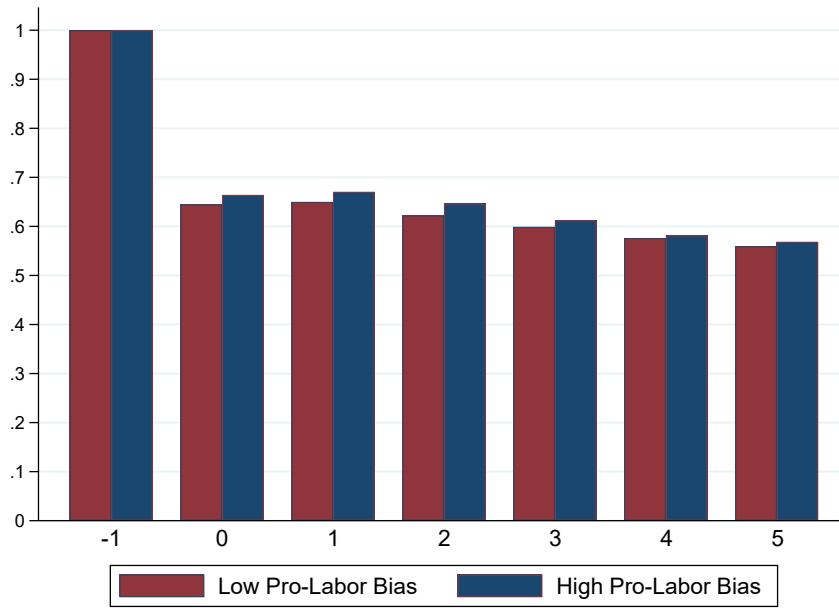
Notes: The figure reports the dynamics of wages in the five-year window around the bankruptcy filing.

FIGURE VII: EMPLOYMENT-MONTHS DYNAMICS



Notes: The figure reports employment dynamics in the five-year window around the bankruptcy filing.

FIGURE VIII: EMPLOYEES IN SAMPLE



**Notes:** The figure reports the share of employees who remain in the sample by the level of pro-labor bias.

## TABLES

TABLE I: PRO-LABOR BIAS AND COURT CHARACTERISTICS

<b>Panel A: Pro-labor-bias Measure</b>				
<b>Variables</b>	<b>Median</b>	<b>Mean</b>	<b>SD</b>	<b>N</b>
Pro-Labor Bias	0.15	0.12	0.39	636
<b>Panel B: Court Characteristics</b>				
<b>Variables</b>	<b>High Pro-labor Courts</b>		<b>Low Pro-labor Courts</b>	
	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>
Pro-Labor Bias	0.52	0.28	-0.09	0.25
Log Backlog of Cases in 2009	8.32	0.65	8.33	0.63
Share of Liquidation Cases Dismissed	0.75	0.43	0.46	0.50
Share of Reorganization Cases Dismissed	0.18	0.38	0.25	0.43
Share of Reorganizations Converted to Liquidations	0.26	0.44	0.32	0.46
Days to Resolution in Reorganizations	1,747	1,035	1,685	989

**Notes:** The table reports descriptive statistics related to the pro-labor-bias measure. Panel A provides descriptive statistics for the pro-labor-bias measure. Panel B reports court-level descriptive statistics based on the level of pro-labor bias. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

TABLE II: SUMMARY STATISTICS

<b>Panel A: Characteristics of Bankrupt Firms at t = -1</b>			
<b>Variables</b>	<b>Median</b>	<b>Mean</b>	<b>SD</b>
Number of Employees	32	96	178
Total Wage Bill (R\$)	547,536	2,409,186	6,065,350
Log Employment	3.47	3.58	1.37
Log Total Wage Bill	13.21	13.31	1.67
High-Skilled Share	0.065	0.109	0.147
Number of Firms	1,042		
<b>Panel B: Characteristics of Workers in Bankrupt Firms at t = -1</b>			
<b>Variables</b>	<b>p50</b>	<b>Mean</b>	<b>SD</b>
Years of Education	12	10.72	2.95
Female	0	0.26	0.44
Age	33	34.97	10.76
Tenure (in Months)	25	46.57	57.03
Log(Wage)	7.37	7.43	0.67
Number of Workers	99,917		
<b>Panel C: Bankrupt Firms by Sector</b>			
<b>Sector</b>	<b>Number of Firms</b>	<b>Percentage Share</b>	
Agriculture/Mining	2	0.00	
Low-Tech Manufacturing	371	0.36	
High-Tech Manufacturing	176	0.17	
Construction	54	0.05	
Trade	306	0.29	
Services	54	0.05	
Transportation/Utilities/Communications	79	0.08	

**Notes:** The table reports descriptive statistics. In Panel A, the table reports descriptive statistics for treated firms in the year prior to the bankruptcy event. In Panel B, the table reports descriptive statistics for treated employees in the year prior to the bankruptcy event. In Panel C, the table reports the number and percentage of firms by sector for firms that file for bankruptcy.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

TABLE III: PRO-LABOR BIAS AND EMPLOYEE CHARACTERISTICS  
(COVARIATE BALANCE)

	(1)	(2)	(3)	(4)	(5)
Variables	$1^{\text{High Pro-labor Court}}$				
Years of Education	-0.001 (0.002)		-0.000 (0.002)		
Female	-0.022 (0.014)		-0.021 (0.013)		
Log Age	-0.001 (0.007)		0.001 (0.010)		
Log Tenure	-0.002 (0.003)		-0.002 (0.003)		
Log Wage at t = -1	0.012 (0.014)		0.004 (0.011)		
$\Delta$ Log Earnings (-5,-1)		0.002 (0.004)	0.002 (0.004)		
Firm Size at t = -1				0.003 (0.011)	
Liquidation Share					0.018 (0.054)
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.82	0.83	0.83	0.49	0.53
Observations	99,895	60,054	60,044	1,042	2,961

**Notes:** The table reports the correlation of employee characteristics across bankruptcies in high- and low-pro-labor courts. The treatment variable  $1^{\text{High Pro-Labor Court}}$  is a dummy variable that is equal to one for courts with a pro-labor-bias measure greater than the median value. Column (1) focuses on the employee characteristics, including years of education, tenure, gender, age and wage in the year prior to the bankruptcy request; column (2) on pre-trends in log earnings; column (3) considers simultaneously the observable employee and pre-trend characteristics. Column (4) focuses on the case-level sample and considers the effect of firm size. Column (5) uses a court-level panel and examines selection in the type of bankruptcy. The specifications include Judicial District  $\times$  Bankruptcy Year fixed effects. The sample includes employees of bankrupt firms in the year prior to the filing. Standard errors are clustered at the Judicial District and Bankruptcy Year. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

TABLE IV: THE EFFECT OF PRO-LABOR BIAS ON BANKRUPTCY RESOLUTION

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Case Outcomes</b>						
Variables	Reorganizations			Liquidations		
	Turned to Liquidation		Log Days to Resolution		Liquidation Dismissed	
Pro-Labor Bias Measure	-0.148*** (0.056)		-0.088 (0.141)		0.110*** (0.035)	
$I_{cj}^{\text{High Pro-Labor Bias}}$		-0.091** (0.043)		-0.041 (0.116)		0.303*** (0.024)
Judicial District × Bankruptcy Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.07	0.07	0.35	0.36	0.10	0.13
Observations	1,710	1,715	699	702	4,864	4,963
<b>Panel B: Firm Continuation</b>						
Variables	(1)	(2)	(3)	Firm Continuation {0,1}		
	Total (-1,+5)		Liquidations (-1,+5)		Reorganizations (-1,+5)	
Post	-0.175*** (0.016)		-0.254*** (0.023)		-0.047*** (0.018)	
Post × $I_{cj}^{\text{High Pro-Labor Bias}}$	0.074*** (0.022)		0.087*** (0.032)		0.044** (0.023)	
Firm FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
Judicial District × Bankruptcy Year FE	Yes		Yes		Yes	
Adjusted R <sup>2</sup>	0.17		0.20		0.12	
Observations	5,149		2,757		2,392	

**Notes:** The table reports the relation between pro-labor bias and the type of bankruptcy resolution. Panel A provides estimates from Equation (2). In columns (1) and (2) of Panel A, the dependent variable is an indicator variable equal to 1 for reorganization cases that were converted to liquidation, and 0 otherwise. In columns (3) and (4) of Panel A, the dependent variable is the log of days each reorganization case took to be resolved. In columns (5) and (6), the dependent variable is an indicator equal to one if a liquidation case is dismissed, and zero otherwise. Panel B reports firm-level estimates for the probability of continuation. The dependent variable is an indicator that is equal to 1 in the year firms report non-zero employment in RAIS, and 0 otherwise. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

TABLE V: THE EFFECT OF PRO-LABOR BIAS ON EMPLOYEE CONTINUATION

	(1)	(2)	(3)	(4)	(5)
	Stay {0,1} [0,1]	Stay {0,1} [0,2]	Stay {0,1} [0,5]	Separation Time	Separation Time Within Re-Employed
$I_{cj}^{\text{High Pro-Labor Bias}}$	0.087* (0.048)	0.083** (0.039)	0.030** (0.014)	4.573** (1.825)	2.482** (1.215)
Employee Controls	Yes	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.21	0.20	0.15	0.24	0.22
Observations	99,913	99,913	99,913	61,374	41,503

**Notes:** The table reports the relation between pro-labor bias and employee continuation. In Columns (1) to (3), the dependent variable is an indicator variable that is equal to 1 for employees that remained in the distressed firm for different time windows around the bankruptcy request, and 0 otherwise. In Columns (4) and (5), the dependent variable is the number of months it took for an employee to separate from the distressed firm relative to the time of the bankruptcy request. In Column (5) we restrict the sample only to the set of employees that were separated and eventually re-employed in the five-year post-bankruptcy period.

Significance Levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



TABLE VI: THE EFFECT OF PRO-LABOR BIAS ON LABOR MARKET OUTCOMES

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Log Earnings		Log Wage		Log Months	
Post	-0.081*** (0.014)	-0.080*** (0.014)	-0.034*** (0.008)	-0.035*** (0.008)	-0.162*** (0.020)	-0.161*** (0.020)
Post $\times$ $I_{cj}^{\text{High Pro-Labor Bias}}$	-0.048*** (0.015)	-0.044*** (0.015)	-0.037*** (0.010)	-0.034*** (0.010)	-0.022 (0.019)	-0.021 (0.019)
Employee Controls	No	Yes	No	Yes	No	Yes
Employee FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.78	0.78	0.89	0.89	0.13	0.14
Observations	747,869	747,812	747,869	747,812	747,869	747,812

**Notes:** The table reports estimates from Equation (1). The dependent variable is the log of employee earnings in columns (1) and (2), the log of wage in columns (3) and (4), and the log of employment months in columns (5) and (6). *Post* in Equation (1) is an indicator variable equal to 1 for the five-year period after the bankruptcy request, and 0 for the five-year period prior to the bankruptcy.  $I_j^{\text{High Pro-Labor Bias}}$  in Equation (1) is an indicator function equal to 1 for employees of bankrupt firms in the year prior to the filing in high-pro-labor courts, and equal to 0 for employees of bankrupt firms in low-pro-labor courts. Standard errors are clustered at the firm level. The sample period is from 2000 to 2018.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

TABLE VII: THE EFFECT OF PRO-LABOR BIAS ON LABOR MARKET OUTCOMES  
HETEROGENEOUS EFFECTS

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Employee Characteristics</b>						
<b>Variables</b>	<b>Log Earnings</b>					
	<b>Skill Level</b>		<b>Occupations</b>			
	<b>High</b>	<b>Low</b>	<b>Managers</b>	<b>White-Collar Professionals</b>	<b>White-Collar Clerks</b>	<b>Blue-Collar</b>
Post	0.033 (0.025)	-0.095*** (0.013)	-0.118*** (0.034)	-0.048*** (0.017)	-0.053*** (0.017)	-0.100*** (0.016)
Post $\times I_{cj}^{\text{High Pro-Labor Bias}}$	-0.058*** (0.018)	-0.037** (0.015)	-0.004 (0.032)	-0.070*** (0.019)	-0.026 (0.017)	-0.035** (0.017)
Employee Controls	Yes	Yes	Yes	Yes	Yes	Yes
Employee FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.80	0.75	0.82	0.79	0.77	0.75
Observations	92,942	647,496	24,115	88,527	187,528	440,161
<b>Panel B: Labor Market, Business Cycle and Firm Characteristics</b>						
<b>Variables</b>	<b>Log Earnings</b>					
	<b>Labor Market Size</b>		<b>GDP Growth</b>		<b>Firm Employment</b>	
	<b><math>\leq p50</math></b>	<b><math>&gt; p50</math></b>	<b><math>&lt; 0</math></b>	<b><math>&gt; 0</math></b>	<b><math>\leq p50</math></b>	<b><math>&gt; p50</math></b>
Post	-0.112*** (0.021)	-0.049*** (0.016)	-0.320*** (0.017)	-0.065*** (0.013)	-0.114*** (0.010)	-0.043* (0.024)
Post $\times I_{cj}^{\text{High Pro-Labor Bias}}$	-0.024 (0.020)	-0.064*** (0.018)	0.021 (0.079)	-0.045*** (0.013)	0.026** (0.011)	-0.112*** (0.025)
Employee FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.76	0.79	0.74	0.78	0.78	0.78
Observations	367,671	380,137	52,053	695,738	370,567	377,236

**Notes:** The table reports estimates from Equation (1) for different sub-samples. Panel A reports estimates for different groups of employees based on skill level and occupation. Panel B reports estimates for different types of labor markets, business cycles and firms. The dependent variable is the log of employee earnings.  $Post$  in Equation (1) is an indicator variable equal to 1 for the five-year period after the bankruptcy request, and 0 for the five-year period prior to the bankruptcy.  $I_j^{\text{High Pro-Labor Bias}}$  in Equation (1) is an indicator function equal to 1 for employees of bankrupt firms in the year prior to the filing in high-pro-labor courts, and equal to 0 for employees of bankrupt firms in low-pro-labor courts. Standard errors are clustered at the firm level. The sample period is from 2000 to 2018.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

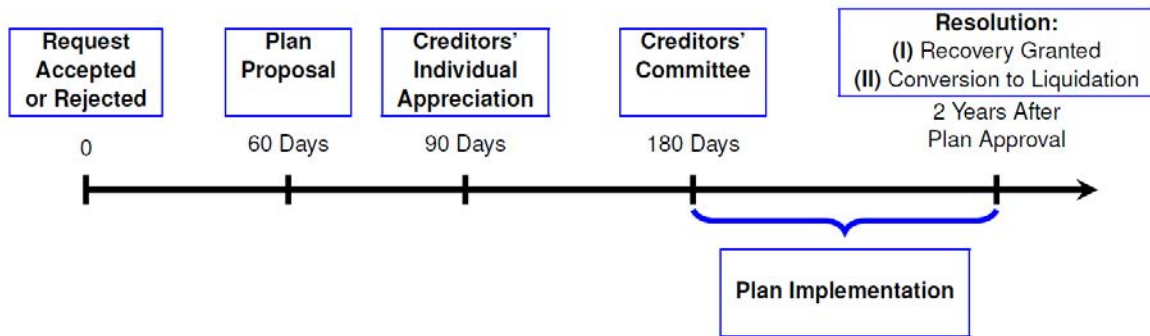
TABLE VIII: BARRIERS TO REALLOCATION

	(1)	(2)	(3)	(4)
<b>Panel A: Risk Aversion</b>				
Variables	$\Delta CV$ of Log Earnings	P10 {0,1} of $\Delta \text{Log}(\text{Earnings})$		
		[-1, 0]	[-1, 1]	[-1, 2]
$I_{cj}^{\text{High-Pro-labor Bias}}$	-0.003 (0.002)	0.001 (0.014)	0.003 (0.008)	-0.005 (0.012)
Employee Controls	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.09	0.12	0.11	0.13
Observations	73,504	99,913	99,913	99,913
<b>Panel B: Adjustment Costs</b>				
Variables	Log Earnings			
	Municipality Change	Microregion Change	Occupation Change	Industry Change
$I_{cj}^{\text{High-Pro-labor Bias}}$	-0.043 (0.054)	-0.038 (0.060)	0.001 (0.024)	-0.017 (0.023)
Employee Controls	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.16	0.17	0.12	0.23
Observations	89,316	89,316	89,312	89,316
<b>Panel C: Internet Diffusion</b>				
Variables	Log Earnings			
	High Internet Access	Low Internet Access		
Post	-0.074*** (0.015)	-0.092*** (0.033)		
Post $\times I_{cj}^{\text{High-Pro-labor Bias}}$	-0.025 (0.016)	-0.085*** (0.028)		
Employee Controls	Yes	Yes		
Employee FE	Yes	Yes		
Year FE	Yes	Yes		
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes		
Adjusted R <sup>2</sup>	0.78	0.76		
Observations	536,000	211,809		

**Notes:** Panel A tests whether workers in firms assigned to high-pro-labor courts face higher income volatility. In column (1), the dependent variable is the coefficient of variation of log earnings. In columns (2)-(4), the dependent variable is an indicator equal to one if the change in the worker's earnings over different time windows is in the lower 10th percentile, and zero otherwise. Panel B tests whether workers in firms assigned to high-pro-labor courts face higher adjustments costs. In columns (1) and (2), the dependent variable is an indicator equal to one if the worker moves to a different municipality, and zero otherwise. In columns (3) and (4), the dependent variable is an indicator equal to one if the worker changes occupation or industry, respectively, and zero otherwise. Panel C repeats our main specification estimating Equation (1) for areas with high internet diffusion and areas with low internet diffusion. The dependent variable is log of employee earnings. Standard errors are clustered at the firm level. The sample period is from 2000 to 2018. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

# APPENDIX

FIGURE A1: REORGANIZATION IN BRAZIL



**Notes:** The figure reports the different stages and the timeline of the reorganization process in Brazil.

## FIGURE A2: JUDICIAL DECISIONS: DATA-COLLECTION PROCESS

**Notes:** The data-collection process involved the creation of three apps that the research assistants used to categorize (a) the outcomes of liquidation cases, (b) the outcomes of reorganization cases, (3) the intermediate judicial decisions into pro-creditor, pro-debtor, or neutral. This figure reports one example of the interface for each of the three apps we created.

### (a) Extraction of Liquidation Outcomes

1038313-40.2015.8.26.0114: Falência 12001

Mostrar Todos os Controles

Apagar anterior

**Instruções**  
Você deve encontrar a movimentação referente à decisão que determina o que aconteceu com este processo de falência.  
É muito importante que você escolha a movimentação correta, já que usaremos a data da movimentação para identificar o momento em que o evento ocorreu.  
Escolha preferencialmente as movimentações em vermelho para indicar o que aconteceu com o processo. Caso não

Data	Descrição	Resultado
2016-07-12	Arquivado Definitivamente	
2016-07-12	Trânsito em Julgado às partes - com Baixa	
2016-07-12	Certidão de Trânsito em Julgado com Baixa Expedida	Certidão - Trânsito em Julgado com Baixa - Processo Digital
2016-05-06	Sentença Registrada	
2016-05-06	Certidão de Publicação Expedida	Relação :0261/2016Data da Disponibilização: 06/05/2016Data da Publicação: 08/05/2016Número do Diário: 2110Páginas: 1310-1311
2016-07-12	Arquivado Definitivamente	

### (b) Extraction of Reorganization Outcomes

**Resultados das Recuperações Judiciais**  
Processo nº de 747  
0000547-55.2014.8.26.0291

Q que acontecimento com esse processo?  
 Empresa desista da Recuperação Judicial  
 Recuperação Judicial foi concluída em falência  
 Recuperação Judicial ainda está em andamento  
 Recuperação Judicial foi encerrada  
 Não sei  
 Outra

Não tenho certeza sobre essa item

**Observações**  
Insira aqui comentários que achar pertinentes

Em que folha está essa informação?  
Número da Folha

Na caixa de texto insira o número da folha, indicar o número no canto superior direito da página, que varia logo depois de 'Folha'. Atenção: a folha a ser indicada deve ser sempre de uma sentença judicial, para que seja possível recuperar depois a data em que o evento ocorreu.

**TRIBUNAL DE JUSTIÇA DO ESTADO DE SÃO PAULO**  
COMARCA DE JABOTICABAL  
FORO DE JABOTICABAL  
Praça do Café, s/nº, - Aparecida  
CEP: 14870-230 - Jaboticabal - SP  
Telefone: (16) 3203-3211 - E-mail: jaboti1@tjsp.jus.br

**DECISÃO**

Processo nº: 0000547-55.2014.8.26.0291  
Classe - Assunto: Recuperação Judicial - Recuperação judicial e Falência  
Requerente: Candeloro Máquinas Industriais Ltda

A sociedade empresária CANDELORO MÁQUINAS INDUSTRIAIS LTDA, sediada na Rodovia SP 333 - Carlos Tomani - Km 123 - Bairro Jardim Buenos Aires, Cidade e Comarca de Jaboticabal, CEP: 14.872-000, inscrita no CNPJ sob nº 07.440.913/0091-13, e NIRE nº 35208919265, requer o processamento de sua RECUPERAÇÃO JUDICIAL, pleiteada sob os seguintes fundamentos.

A requerente argumenta em síntese nos em virtude de dificuldades financeiras

fls. 35303

Próxima JU

### (c) Categorization of Decisions on Specific Articles in Pro-creditor, Pro-debtor, Neutral

Art. 64

Movimentação

Instruções

**Teor da Decisão nesta Citação**

Decisão pró-credor: foi pedida e CONCEDIDA a remoção dos administradores da firma.

Decisão pró-devedor: foi pedida e NEGADA a remoção dos administradores da firma.

Citação Neutra: não foi pedida a remoção dos administradores da firma.

Não sei

**Comentários:**

**Decisão** 04/08/2017  Texto Repetido

Vistos.Fls. 2193: via inadequada.De modo a se realizar o acompanhamento, determino que o administrador judicial apresente relatório mensal nesse mesmo processo.Deve ser apresentados todos os relatórios mensais faltantes. Os relatórios mensais deverão ser instruídos com fotografias do estabelecimento, incluindo maquinário e estoque, com o administrador judicial presente, e deverão constar informações a respeito da existência da atividades, número de empregados em exercício, demissões no período, pagamentos de verbas trabalhistas e rescisórias, recolhimento de impostos e encargos sociais. Também deverá ser objeto de exame, em cada relatório, a movimentação financeira da recuperanda, a fim de que se verifique eventual ocorrência de hipótese prevista no art. 64 da LRF;Apresente o administrador judicial os relatórios no prazo de cinco dias. Intime-se.São Paulo, 04 de agosto de 2017.

TABLE A1: ARTICLES, SUBJECTS, CATEGORIZATION CRITERIA, AND EXAMPLES

**Notes:** The table provides information on the articles that have been used to identify pro-labor and pro-creditor decisions, along with specific examples that clarify the rationale used for the classification.

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**Article 6, Paragraph 3, of Law 11,101/2005:** The article limits automatic stay to a “non-extendable” period of 180 days, after which creditors, rights to collect their claims are reestablished. However, courts routinely allow the extension of the automatic stay period.

**Pro-creditor Decision:** Court denies extension of 180 days period.

Example from case 0003382-66.2015.8.26.0457

*The request deserves rejection. First, because the 180-day of the stay period is non-extendable (...). The legislators clearly determined that (...) the suspension under examination “shall under no circumstances exceed the non-extendable period of 180 days after the approval of reorganization processing.” Secondly, in this specific case, there is no exceptional situation that justifies the granting of the extension prohibited by Law. Thus, it must be recognized that, even under the inspiration of the constitutional principle of the social function of the company (...), the extension of the legal term for suspension of enforcement is not legitimate (...).*

**Pro-labor Decision:** Court allows for the 180-day automatic stay period to be extended.

Example from Case 1007014-08.2016.8.26.0309

*One should not forget that the purpose of reorganization is to make it possible for the debtor to overcome its economic and financial crisis in order to preserve its source of production, the employment of workers and the interests of creditors, thus promoting the preservation of the company, its social function and the stimulus of economic activity. In this regard, (...) I extend the period of suspension of individual actions against the recovering party by additional 120 days (totaling 300 days of suspension) (...).*

---

**Article 49, Paragraph 3, of Law 11,101/2005:** The article excludes from automatic stay certain types of secured claims.

**Pro-creditor Decision:** Court allows creditors to seize collateral.

Example from Case 0001589-66.2012.8.26.0629

*Despite the (...) arguments put forward by the company under reorganization, the request for suspension of the execution of collateral warranties regarding the industrial plant cannot be accepted. In fact, considering the information that the firm’s industrial plant was given as collateral in a mortgage loan agreement, it is important to note that a possible lawsuit is not suspended due to the judicial reorganization action. In this sense, this court cannot prevent the filing of a search and seizure lawsuit founded on the mortgage contract signed by both parties (...)*

**Pro-labor Decision:** Court denies creditors’ request to seize collateral.

Example from Case 0006602-48.2014.8.26.0638

*(...) the measures [prohibition of collateral seizure] (...) are in line with the purpose of reorganization. Its refusal may result in the infeasibility of its commercial activity and, in consequence, of its recovery. Notwithstanding the controversy in the country’s doctrine and jurisprudence regarding this request and whether or not the aforementioned contracts are subject to [automatic stay under] reorganization, it is evident that a reorganization must not only overcome the economic crisis of the company (...) but also [promote] the preservation of its social function, besides ensuring the continuity of the business, the preservation of jobs and payment of suppliers, as well as generating income for the solvency of past suspended debts. (...) I do not deny the existence of understandings that see provisions of Article 49, Paragraph 3 of Law 11,101/05 as excluding such contracts from the effects of the reorganization. (...) Thus, the damage to the company under reorganization would be evident if the requested measure were not granted (...) I grant the requests (...) and I do so for the purpose of ordering (...) [banks] Bradesco and Santander the lifting of “account freeze”(...) granting free access to the values, in order to guarantee the activity of the restructuring firm (...).*

---

TABLE A1: ARTICLES, SUBJECTS, CATEGORIZATION CRITERIA, AND EXAMPLES  
(CONT.)

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**Article 73 or Article 61, Paragraph 1, of Law 11,101/2005:** The articles list the circumstances under which a reorganization can be converted into a liquidation.

**Pro-creditor Decision:** Court grants request to turn reorganization into liquidation.

Example from Case 0037381-82.2013.8.26.0100

*At this point, it should be noted that the State must not try to recover companies that are unable to meet their purpose and that, therefore, do not generate relevant social benefit. Free market structures would condemn companies in unsustainable conditions, for the good of the economic system and for the healthy survival of other companies. In this sense, there is no reason to use state intervention, through the process of reorganization, to revive companies already doomed to bankruptcy. If the economic system is not interested in maintaining nonviable companies, there is reason for the State, through the Judiciary, to work in this direction, maintaining judicial reorganizations for nonviable companies. Once the plan is not complied with, the hypothesis that justifies the bankruptcy judicial recovery. That said, I declare today, under the terms of article 73, IV, of Law 11,101/05, the bankruptcy of (...)*

**Pro-labor Decision:** Court denies request to turn reorganization into liquidation.

Example from Case 1001009-75.2016.8.26.0274

*I reject the request to turn this reorganization into a liquidation, since the requirements of Article 73 (...) are not present, namely: a) deliberation of the General Assembly of Creditors, pursuant to Article 42: the Assembly was not yet summoned for such deliberation; b) failure by the debtor to submit its reorganization plan within the 60-day period provided for in Article 53: the reorganization plan was submitted to pages 2271/2336; c) rejection of the reorganization plan, pursuant to Paragraph 4 of Article 56: the Assembly has not yet been called to deliberate on the reorganization plan; and d) non-compliance with any obligation assumed in the reorganization plan, pursuant to Paragraph 1 of Article 61: given that judicial reorganization has not yet been granted by this court, pursuant to Article 58, and that the reorganization plan has yet to be submitted to the General Meeting of Creditors. (...)*

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**Article 64 of Law 11,101/2005:** The article lists the circumstances under which creditors can request the removal of the managers in charge of the firm.

**Pro-labor Decision:** Court grants request to remove managers.

Example from Case 1000226-37.2018.8.26.0299

*The firms under reorganization have repeatedly failed to comply with court orders and failed to present the necessary documents for the trustee to monitor compliance with the reorganization plan. Therefore, under the terms of Article 64, V, of Law 11,101/2005, I remove the managers of the firms under reorganization.*

**Pro-labor Decision:** Court denies request to remove managers.

Example from Case 1080970-34.2018.8.26.0100

*Under Article 64 of Law 11.101, there are indications that crimes were committed, which would permit the dismissal of company directors. Considering that the activity has always been linked to the name of said partners and managers, I believe their removal as directors would do more harm than good, as it would remove from the conduction of the activity those who have more information about the reorganization, which could compromise the business. On this point, a conciliatory solution to prevent further damage by the managers to the firm and the creditors (...) would be to limit their powers (...) Even though the law does not explicitly authorize such limitation, if Article 64 of the Bankruptcy Law grants broad powers for removal, it also grants powers to limit their capacity. Accordingly, I determine that the managers (...) should only be able to perform management (...) acts for the legal entities – notably the contraction of new obligations, the payment of existing obligations and any form of commitment of the company’s cash or reallocation of its equity – with the agreement of the third manager (...)*

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TABLE A2: THE EFFECT OF PRO-LABOR BIAS ON IN-SAMPLE PROBABILITY

	(1)	(2)	(3)	(4)
Variables	In-Sample {0,1}			
	(-1, 1)	(-1, 2)	(-1, 3)	(-1, 5)
Post	-0.378*** (0.030)	-0.360*** (0.019)	-0.350*** (0.021)	-0.343*** (0.017)
Post $\times$ $I_{cj}^{\text{High Pro-labor Bias}}$	0.018 (0.029)	0.019 (0.024)	0.019 (0.021)	0.017 (0.019)
Employee Controls	Yes	Yes	Yes	Yes
Employee FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.32	0.34	0.36	0.38
Observations	299,751	399,667	499,583	699,415

**Notes:** The table reports the relation between pro-labor bias and the probability of exiting the RAIS sample providing estimates from Equation (2) for different time windows around the bankruptcy request. The dependent variable in columns (4) is an indicator variable equal to one if an employee is in the RAIS sample this year, and 0 otherwise.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



TABLE A3: THE EFFECT OF PRO-LABOR BIAS ON LABOR MARKET OUTCOMES  
EXCLUDING SÃO PAULO

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Log Earnings		Log Wage		Log Months	
Post	-0.067*** (0.018)	-0.067*** (0.017)	-0.027*** (0.011)	-0.027*** (0.010)	-0.154*** (0.025)	-0.152*** (0.025)
Post $\times$ $I_{cj}^{\text{High Pro-Labor Bias}}$	-0.057*** (0.016)	-0.054*** (0.016)	-0.042*** (0.011)	-0.041*** (0.011)	-0.022 (0.021)	-0.021 (0.020)
Employee Controls	No	Yes	No	Yes	No	Yes
Employee FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.78	0.78	0.89	0.89	0.13	0.14
Observations	591,718	591,677	591,718	591,677	591,718	591,677

**Notes:** The table reports estimates from Equation (1) excluding firms that file bankruptcy requests in São Paulo. The dependent variable is the log of employee earnings in columns (1) and (2), the log of wage in columns (3) and (4), and the log of employment months in columns (5) and (6). *Post* in Equation (1) is an indicator variable equal to 1 for the five-year period after the bankruptcy request, and 0 for the five-year period prior to the bankruptcy.  $I_j^{\text{High Pro-Labor Bias}}$  in Equation (1) is an indicator function equal to 1 for employees of bankrupt firms in the year prior to the filing in high-pro-labor courts, and 0 for employees of bankrupt firms in low-pro-labor courts. Standard errors are clustered at the firm level. The sample period is from 2000 to 2018. Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

TABLE A4: INFORMATION COSTS AND LOCAL LABOR MARKET SIZE

Variables	(1)	(2)	(3)	(4)
	Log Earnings			
	Labor Market Size $\leq$ p50		Labor Market Size $>$ p50	
	Low Internet Access	High Internet Access	Low Internet Access	High Internet Access
Post	-0.119*** (0.036)	-0.110*** (0.026)	0.024 (0.054)	-0.055*** (0.016)
Post $\times$ $I_{cj}^{\text{High Pro-Labor Bias}}$	-0.039 (0.027)	-0.003 (0.026)	-0.317*** (0.078)	-0.035** (0.017)
Employee Controls	Yes	Yes	Yes	Yes
Employee FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Judicial District $\times$ Bankruptcy Year FE	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.77	0.76	0.75	0.79
Observations	181,230	186,441	30,575	349,559

**Notes:** The table reports estimates from Equation (1) for different local labor markets based on internet access and thickness. The dependent variable is the log of employee earnings.  $Post$  in Equation (1) is an indicator variable equal to 1 for the five-year period after the bankruptcy request, and 0 for the five-year period prior to the bankruptcy.  $I_j^{\text{High Pro-Labor Bias}}$  in Equation (1) is an indicator function equal to 1 for employees of bankrupt firms in the year prior to the filing in high-pro-labor courts, and equal to 0 for employees of bankrupt firms in low-pro-labor courts. Standard errors are clustered at the firm level. The sample period is from 2000 to 2018.

Significance levels: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .