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THE LABOR EFFECTS OF JUDICIAL BIAS IN BANKRUPTCY

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The Labor Effects of Judicial Bias in Bankruptcy

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ABSTRACT

We study the effect of judicial bias favoring firm continuation in bankruptcy on the labor market outcomes of employees by exploiting the random assignment of cases across courts in the State of São Paulo in Brazil. Employees of firms assigned to courts that favor firm continuation are more likely to stay with their employer, but they earn, on average, lower wages three to five years after bankruptcy. We discuss several potential mechanisms that can rationalize this result, and provide evidence that imperfect information about outside options in the local labor market and adjustment costs associated with job change play an important role.

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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. One friction that, in the context of developing countries, has received less attention in the literature 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 – to protect workers’ jobs. Although this type of bias in bankruptcy is considered widespread, direct empirical evidence on how it affects workers’ labor market outcomes is scarce.¹

In this paper, we study the effect of judicial bias in bankruptcy on the labor market outcomes of workers of distressed firms. We focus on Brazil, which provides a well-suited setting for a number of reasons. First, despite the Brazilian judicial system is generally considered pro-debtor (Arida, Bacha, and Lara-Resende, 2005), the data collected for this paper uncover large variation in the degree of judicial bias across courts dealing with bankruptcy cases. Second, we are able to combine detailed information on judicial decisions in bankruptcy cases with a comprehensive employer-employee dataset (RAIS) in which we can follow all formal workers over time and across employers. Third, bankruptcy cases in the State of São Paulo – the largest and more industrialized state in Brazil – are randomly assigned across courts within a judicial district. We exploit this feature of the setting in our identification strategy, to ensure the degree of judicial bias workers face is plausibly orthogonal to their initial characteristics.

Our empirical analysis relies on a new dataset covering the universe of bankruptcy cases filed in the State of São Paulo between 2005 and 2015. We match firms filing for bankruptcy with firms and their employees recorded in our administrative employer-employee dataset. This allows us to monitor which firms remain in operation after bankruptcy and for how long, and to observe the labor market outcomes of their employees. Our identification strategy relies on comparing the labor market outcomes of workers whose firms filed for bankruptcy in the same judicial district and year-quarter, and whose

¹Blazy, Chopard, Fimayer, and Guigou (2011) show 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). Judicial bias that favors preservation of employment is also evident outside of bankruptcy. For example, Cahuc, Carcillo, and Patault (2019) analyze the impact of judicial bias in labor courts in France.

cases were randomly assigned to courts with different degrees of pro-continuation bias. We measure the pro-continuation bias faced by each firm as the leave-one-out share of bankrupt firms that were assigned to the same court and are still in operation five years after their bankruptcy filing. We present empirical evidence that corroborates the random assignment of cases across courts within judicial districts.

We start by documenting the effect of judicial bias on continuation of bankrupt firms. Our estimates indicate that firms assigned to one-standard-deviation-higher pro-continuation courts have an 8.8-percentage-points higher probability of remaining in operation five years after the bankruptcy filing. To better understand which type of judicial decisions drive variation in pro-continuation bias, we analyze the text of critical decisions taken by judges in each case. In liquidation cases, we document that continuation bias predicts higher dismissal of liquidation requests. In reorganization cases, we document that continuation bias predicts lower conversion into liquidations, higher likelihood of extending deadlines for reorganization plans, and higher likelihood of imposing an automatic stay on assets not mandated by the law.

Next, we focus on the effect of pro-continuation bias on employer-employee relationships. We document that employees of insolvent firms whose cases are assigned to a one-standard-deviation-higher pro-continuation court are 8 percentage points more likely to remain employed with the same firm five years after bankruptcy and stay, on average, about half a year longer with bankrupt firms in the post-bankruptcy period.

How does higher continuation with the same employer affect workers' labor market outcomes? In a perfectly competitive labor market where workers are paid their marginal product, higher continuation with the same employer should not affect workers' wages, as long as workers' productivity is unchanged. Frictions in the labor market can generate deviations from this benchmark. For example, workers might earn wages that are higher than the competitive benchmark in imperfectly competitive labor markets (Lamadon, Mogstad, and Setzler, 2019) or when workers are entrenched with the current employer (Berk, Stanton, and Zechner, 2010). In these cases, continuation positively affects incumbent workers' wages because it prevents a contract termination that makes wages converge to their market level. On the other hand, workers might earn wages that are below their competitive benchmark if search costs are substantial or when workers are imperfectly informed about their outside options. Indeed, recent evidence shows that workers' beliefs about their outside options are often incorrect, leading them to underestimate what they could earn with other employers (Jäger, Roth, Roussille, and Schoefer, 2022). In this case, we expect pro-continuation bias to have a negative effect on workers' wages.

The evidence in our setting documents that being assigned to courts with a higher pro-continuation propensity has a negative effect on average workers' wages after bankruptcy. Specifically, among workers of firms filing for bankruptcy in the same judicial district and year-quarter, those assigned to one-standard-deviation-higher pro-continuation courts

have about 4% lower average wages three to five years after bankruptcy. These results are not explained by workers leaving formal employment at different rates in cases assigned to courts with different degrees of pro-continuation bias. Our estimates include workers leaving the sample in all regressions and assign them the average informal wage in the municipality in which they are last seen employed. Because of the large diffusion of informality in the Brazilian labor market (Ulyssea, 2018), and the fact that working-age individuals that exit RAIS might also become self-employed, we think local informal wages are a good approximation of their actual labor earnings. We find quantitatively similar results assuming exiting workers earn wages equal to zero.

These results raise the question of why employees remain with the same employer when – according to our estimates – they could, on average, earn more by searching for a new job. We discuss and empirically test potential mechanisms that can rationalize this result. First, workers of bankrupt firms might be imperfectly informed about their outside options and thus earn wages that are below their competitive benchmark in the labor market (Jäger et al., 2022). Underestimating outside options could be particularly costly for workers employed by poorly performing firms that are facing bankruptcy. To test this mechanism, we propose two proxies for access to information about outside options. First, we use differences in internet diffusion across Brazilian municipalities. Second, we construct an individual-level measure based on the employment trajectories of former coworkers. This measure of “coworker network” builds on Caldwell and Harmon (2019) and relies on the idea that workers often learn about their outside options through their network of former colleagues. The evidence shows that higher internet diffusion and a larger coworker network strongly mitigate the negative impact of pro-continuation bias on post-bankruptcy wages. These findings are consistent with information frictions in local labor markets being an important driver of the negative effect of pro-continuation bias in bankruptcy on workers’ wages.

We conclude by discussing and empirically testing three additional mechanisms. First, risk-averse workers might prefer to stay with the current employer instead of experiencing an uncertain outcome in the labor market, even when the market wage for workers with similar characteristics is above the worker’s current wage. We find no evidence of lower probability of continuation leading to a higher increase in future income volatility or a higher risk of extreme decline in earnings. Second, the negative effect of pro-continuation on wages might reflect adjustment costs associated with job change. Adjustment costs include those associated with geographical relocation, or changes in the sector of employment and occupation. Consistent with an increase in the probability of remaining employed with the same employer, workers assigned to higher pro-continuation courts are less likely to change location or industry after bankruptcy, whereas we find no significant effect on their probability of changing occupation. Overall, the evidence suggests that accepting lower wages after bankruptcy might be in part explained by adjustment costs

associated with geographical or sectoral changes.

Finally, we explore the role of workplace non-wage amenities offered by employers. To the extent that the adverse post-bankruptcy effect of continuation on wages reflects a shift toward higher provision of non-wage amenities, employees effectively substitute wage declines for increases in the non-wage component of their compensation. To provide evidence on this potential mechanism, we follow the literature on compensating differentials and rely on the structure of employee transitions across firms in longitudinal employer-employee data to create two parsimonious measures of revealed-preference rankings of firms (Sorkin, 2018; Bagger and Lentz, 2019; Lagaras, 2020). We find no significant effect of continuation bias on these two measures of non-wage amenities faced by workers after bankruptcy, suggesting that the documented effects on labor market outcomes are unlikely to reflect differential changes in non-wage amenities across employers in the post-bankruptcy period.

Related Literature

Our paper is related to three main streams of the literature. First, it contributes to the recent literature using worker-level data to study the effect of financial distress on employees. Baghai, Silva, Thell, and Vig (2020) use Swedish administrative data to document that financially distressed firms tend to lose their most skilled employees before filing for bankruptcy. Babina (2019) focuses on entry to entrepreneurship for employees of distressed firms. Graham, Kim, Li, and Qiu (2021) study the costs of bankruptcy for employees in the US, documenting that employee annual earnings decrease by about 10% relative to pre-bankruptcy earnings.² Relative to this literature, our paper focuses on the effect of judicial bias on labor market outcomes of employees. In particular, we show the cost of bankruptcy differs depending on the degree of judicial bias, and it is significantly larger for employees assigned to pro-continuation courts.

Our paper is also related 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. Bernstein, Colonnelli, 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

²A 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, and 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 an increase in an employer's distress results in fewer and lower-quality job applicants.

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 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. Finally, Antill (2021) proposes a new structural model to estimate the efficiency of different forms of bankruptcy resolution in terms of creditors' recovery rate, and finds evidence consistent with excessive liquidation using data from the US. 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 studies the financial and real effects of a lack of judicial specialization (Visaria, 2009), court efficiency (Fonseca and Van Doornik, 2019; 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-continuation 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. Section III describes the data and introduces a new measure of pro-continuation bias used in the empirical analysis. Section IV contains the empirical analysis. In this section, we discuss a simple conceptual framework to guide the empirical analysis, lay out the identification strategy, present the main effects of pro-continuation bias on labor market outcomes, and discuss a set of potential mechanisms that can rationalize the key results. Section V concludes.

II INSTITUTIONAL BACKGROUND

In this section, we provide background information on two aspects of our institutional setting: (i) the degree of judicial bias characterizing the Brazilian judicial system 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 approximately 500 Brazilian workers in the executive, legislative, and judicial branches of government. The survey results show 61% of the 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.”³ 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 show 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.⁴ The latter survey also shows 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 the judicial bias present in the Brazilian context.

II.B THE BRAZILIAN BANKRUPTCY SYSTEM

II.B.1 *Legal Framework*

After the introduction of the 2005 reform, the 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,

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

⁴See Table 25, question 8 of the survey in Pinheiro (2003).

or public proclamations, based on guidance from the judicial trustee. The proceeds are 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 to preserve production, employment, and the interests of creditors (article 47 of the 2005 Brazilian Bankruptcy Law). 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 at 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. 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 for the recovery of the firm, which includes debt renegotiation, asset divestitures, workforce downsizing, and any attempt to obtain additional funding, (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.

After the reorganization plan is submitted, each creditor has 30 days to raise objections. 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 creditors that hold more than 50% of the total value of claims in any given class of claims reject the plan, the firm is liquidated. If the plan is approved, reorganization starts and the firm begins implementing the proposed restructuring plan.

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 local 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 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.

In the State of São Paulo, bankruptcy filings are collected by a central office in the debtor’s judicial district (“Distribuidor Central”), which 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.

III DATA

III.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 name of the debtor firm, the intermediate decisions, and the outcome for 9,976 bankruptcy requests filed between June 2005 and December 2015.

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.

III.B WORKER-LEVEL DATA

Information on linked employer-employee relationships is obtained from RAIS, a longitudinal administrative dataset of the Brazilian Ministry of Labor compiled annually from information provided by all 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 2000 to 2020.

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.

III.C FINAL SAMPLE AND SUMMARY STATISTICS

Because our employer-employee dataset ends in 2020, for our empirical analysis, we focus on bankruptcy requests filed between June 2005 (after the bankruptcy law reform of 2005 was introduced) and December 2015, so that employee-level information is available for five years before and at least five years after the bankruptcy request.

We begin with 9,976 bankruptcy requests from June 2005 to December 2015 and use debtor names as reported in TJSP to determine the respective 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 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 9,628 – approximately 97% –

of the bankruptcy filings, including 8,134 liquidation and 1,494 reorganization requests.

Next, we match bankruptcy cases with the employer-employee dataset RAIS using unique firm tax identification numbers. We exclude cases in which the debtor has no employment information reported in RAIS in the year before the bankruptcy request. In addition, following the standard approach in the literature using RAIS, we focus on firms with at least five employees at the end of the year prior to the bankruptcy request (Helpman, Itskhoki, Muendler, and Redding, 2016). Because of the large number of very small firms recorded in RAIS, after applying these restrictions our final sample includes 3,343 bankruptcy requests.

Table I provides summary statistics for firms and employees in our sample in the year prior to the bankruptcy filing. The average firm in our sample has 128 employees and a total wage bill of about 2.1 million BRL. Approximately 20% of the average firm’s labor force is composed of workers who have at least completed high school (what we define in our paper as high-skill workers). As shown in Panel B, more than half of the firms in our sample are in the manufacturing sector (52%), followed by the retail sector (29%). Panel C shows that in the year before bankruptcy, the average worker in our sample was 38 years old, had been employed at the firm for around five years, and had 11.6 years of education.

Our analysis focuses on firms that file for bankruptcy in the State of São Paulo. In Appendix Table A1, we use RAIS data to compare firms and workers in our sample with two additional groups: firms and workers located in São Paulo that did not file for bankruptcy, and the population of firms and workers in the rest of Brazil. Several interesting differences emerge. As shown, firms filing for bankruptcy in the state of São Paulo are significantly larger in size (128 vs. 15-16 workers) and more concentrated in the manufacturing sector (52% vs. 11%) than non-bankrupt firms in São Paulo and the population of firms in the rest of the country. These differences are consistent with the fact that formal bankruptcy tends to be used the most by relatively larger firms with more tangible assets, as documented also in existing work on bankruptcy in other emerging economies (Li and Ponticelli, 2020). Note these differences do not invalidate our empirical analysis, which relies on variation across comparable firms filing for bankruptcy within the same judicial district.

[Insert Table I Here]

IV EMPIRICAL ANALYSIS

The empirical analysis is organized as follows. First, in section IV.A, we present an identification strategy to estimate the effects of judicial bias in bankruptcy on the labor market outcomes of bankrupt firms’ employees. In support of the key identification assumption, in section IV.B, we present evidence consistent with the random assignment

of cases across courts within judicial districts. In section IV.C, we investigate the effect of pro-continuation-bias on different types of judicial decisions. Then, in section IV.D, we study the effect of judicial bias on firm continuation and on workers' continuation with the firm filing for bankruptcy. Workers whose firms are assigned to more pro-continuation courts are significantly more likely to remain employed with bankrupt firms in the post-bankruptcy period. To shed light on the impact of higher continuation with the same employer on workers' labor market outcomes, we first discuss a simple conceptual framework based on existing literature in section IV.E and then present the empirical results on labor market outcomes in section IV.F. We conclude by discussing and presenting evidence on potential mechanisms in section IV.G, and then describing a set of robustness tests in section IV.H.

IV.A IDENTIFICATION STRATEGY

In this section, we describe the identification strategy to estimate the causal effect of pro-continuation bias on the labor market outcomes of workers of bankrupt firms. The main challenge we face is that the degree of pro-continuation 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 where courts have high pro-continuation bias 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. Even within judicial districts, selection could exist between firms and courts. For example, relatively less productive firms might decide to file for bankruptcy in courts with a more pro-continuation reputation, because doing so might lead to a higher probability of continuation. In the presence of selection, court decisions favoring debtors or creditors might not reflect a form of judicial bias, but rather the different nature of the cases that different courts face.

To deal with this challenge, we rely on a key characteristic of the institutional setting, namely, the fact that bankruptcy cases in the State of São Paulo are randomly assigned across courts within a judicial district. This fact ensures that, on average, judges in different courts within the same district face cases with similar characteristics. Thus, their propensity to rule in favor of one party or another should capture judges' interpretation of the law rather than differences in the type of cases they face. Exploiting variation across cases filed within the same judicial district ensures firms cannot choose which court will handle their case and that the degree of judicial bias they face is plausibly orthogonal to their initial characteristics.

Our identification strategy builds on the large literature using random assignment of bankruptcy cases across judges within US bankruptcy courts to study the effects of reorganization on firm-level outcomes and asset reallocation (Chang and Schoar, 2013; Bernstein et al., 2019) or the effects of bankruptcy protection in consumer bankruptcy

on individual-level outcomes (Dobbie and Song, 2015; Dobbie, Goldsmith-Pinkham, and Yang, 2017a).⁵ The standard approach in this literature is to measure a judge’s leniency as the leave-one-out fraction of pro-debtor petitions granted by the judge relative to the average in her court.

In our setting, we measure pro-continuation bias based on the probability of continuation after bankruptcy of firms assigned to a given court. More specifically, we construct a leave-one-out measure of continuation bias faced by bankrupt firm b assigned to court c in judicial district j as:

$$M_{bcj} = \frac{1}{N_{cj}} \sum_{b' \neq b} C_{b'cj}, \quad (1)$$

where $C_{b'cj}$ is an indicator function equal to one if bankrupt firm b' continues in operation five years after bankruptcy, and N_{cj} is the total number of cases assigned to court c in judicial district j . For each bankrupt firm b , this measure captures the average continuation after bankruptcy, computed using all other firms assigned to the same court. Given the limited number of bankruptcy cases available in several courts in our sample, the exclusion of bankrupt firm b ’s continuation outcome from the calculation of M_{bcj} prevents the finite-sample bias resulting from the mechanical correlation between C_b and the measure of continuation bias.

Although the empirical analysis uses the firm-level measure of continuation bias described in equation (1), we start in this section by presenting a set of stylized facts on the distribution of continuation bias at the court level. Figure I plots the distribution of the pro-continuation measure across courts, whereas Figure II shows the geographical variation in pro-continuation bias both across and within judicial districts in the State of São Paulo. The upper part of Figure II reports a map with the level of pro-continuation bias in each judicial district in the State of São Paulo calculated as the weighted-average of pro-continuation bias across the courts in the district, where the weights correspond to the share of bankruptcy cases filed in each court. In the lower part of Figure II, we report the list of judicial districts used in the empirical analysis, the number of local courts in each district (in parenthesis) and the range in pro-continuation bias across courts in each judicial district. The red dots represent the local court with the lowest pro-continuation bias in the judicial district, whereas the blue dots represent the local court with the highest pro-continuation bias in the judicial district. As shown, substantial variation in the pro-continuation-bias measure exists within districts, and we exploit this variation for the empirical analysis.

[Insert Figure I and II Here]

⁵For a seminal contribution to this approach, see Kling (2006), who uses random assignment of cases to judges with different leniency to study the effects of incarceration length on labor market outcomes. This approach is also used in Doyle Jr (2007) to study the long-run effects of foster care, and by Galasso and Schankerman (2015) to study the effect of patent invalidation on future innovation.

Our main specification at the employee level is as follows:

$$Y_{ibcj}^T = \alpha_{jt} + \beta M_{bcj} + \gamma X'_{ibcj,t-1} + \varepsilon_{ibcj}, \quad (2)$$

where Y_{ibcj}^T is a worker-level outcome observed at horizon T after bankruptcy for an individual i whose employer's case was allocated to court c in judicial district j in bankruptcy year-quarter t . 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 β , which captures the effect of pro-continuation bias on workers' outcomes at different horizons in the post-bankruptcy period.

The specification in equation (2) includes judicial-district fixed effects interacted with bankruptcy-year-quarter fixed effects (α_{jt}). Thus, the relevant variation identifying β derives from differences across workers whose employers file for bankruptcy in the same judicial district and time, but whose cases are randomly assigned to courts with different levels of pro-continuation bias. Thus, by construction, our empirical analysis focuses on judicial districts that have at least two courts. In addition, we focus on courts that had at least 10 bankruptcy cases filed during the period under study. To account for correlation in the error term across workers at the level of randomization, we double-cluster standard errors at the judicial-district and bankruptcy-year-quarter level (Abadie, Athey, Imbens, and Wooldridge, 2017) in all specifications.

IV.B RANDOMIZATION TEST

To provide evidence in support of the random assignment of cases across courts within a judicial district, in Table II, we study whether worker-, firm-, and case- characteristics are predictive of the leave-one-out measure of pro-continuation bias presented in equation (1) (Dobbie and Song, 2015; Arnold, Dobbie, and Yang, 2018; Bernstein et al., 2019).

Columns (1) to (7) report the results when focusing on worker characteristics in the year before the bankruptcy filing, including education, gender, age, tenure in the firm that files for bankruptcy, as well as the level of pre-bankruptcy wages and wage growth in the three- and five-year period prior to the bankruptcy filing. As reported, the coefficient estimates on the worker-level characteristics are small in magnitude and not statistically significant, consistent with random assignment of cases across courts within a judicial district.

In columns (8) and (9), we study differences in firm size (number of employees in the year before bankruptcy) and case type (liquidation versus reorganization) across workers assigned to courts with different levels of continuation bias. We find a small and non-statistically significant correlation between the size of the firm that files for bankruptcy and the degree of continuation bias of the assigned court. We find a larger but non-statistically significant coefficient when estimating the predictive power of case

type (liquidation) on continuation bias of the assigned court.

Overall, the results presented in Table II are consistent with the random assignment of cases across courts within a judicial district. We provide further evidence in support of randomization in section IV.H. In particular, following the evidence presented in Kleiner and Hüther (2022), we evaluate the concern that firms might strategically time bankruptcy filings to manipulate random assignment. We find no evidence of such manipulation in our setting.

[Insert Table II Here]

IV.C PRO-CONTINUATION BIAS AND JUDICIAL DECISIONS

The measure of continuation bias presented in equation (1) captures the propensity of bankrupt firms assigned to a given court to continue in operation after bankruptcy. However, this measure is agnostic on which specific judicial decisions determine continuation. To better understand this channel, we study how pro-continuation bias affects bankruptcy decisions.

We analyze the text of all decisions in reorganization and liquidation cases filed between 2005 and 2017 in the State of São Paulo and identify mentions of specific judicial decisions that are both important for the outcome of the case and partly subject to judges’ discretion. Specifically, our analysis includes decisions on whether to accept or dismiss a liquidation request, to convert or not a reorganization into a liquidation, as well as decisions on whether to grant an automatic stay on assets, extend the time limit for presenting a reorganization plan, and approve or not a petition to remove management. For each mention of these decisions, we read the text of the rulings and classify them as “pro” or “against” continuation, depending on whether the decision facilitates or hinders the continuation of an insolvent firm. Table A2 provides a description of the legal provisions we searched for and the criteria we used to categorize them. Pro-continuation decisions include: the dismissal of a liquidation request, the denial of a request to convert a reorganization into a liquidation, the denial of certain creditors’ requests to seize assets, the extension of the time available for managers to present a reorganization plan, and the denial of a creditor request to remove current management.

We study the effect of our measure of pro-continuation bias on pro-continuation bankruptcy decisions by estimating the following specification:

$$D_{bcjt} = \alpha_{jt} + \delta M_{bcj} + \varepsilon_{bcjt}, \quad (3)$$

where D_{bcjd} is an indicator variable capturing pro-continuation judicial decisions in the case of bankrupt firm b filed in court c of judicial district j in year-quarter t . We estimate equation (3) separately for each of the five types of decisions.

Table A3 in the Appendix reports the results. Column (1) focuses on liquidation cases. We find liquidation requests filed in pro-continuation courts are more likely to be dismissed. To facilitate the interpretation of magnitudes, we normalize our pro-continuation-bias measure so that all coefficients capture the effect of a standard-deviation difference in continuation bias. Thus, the coefficient estimate in column (1) indicates liquidation requests assigned to courts with one-standard-deviation-higher continuation bias are 30% more likely to be dismissed.

Columns (2) to (5) focus on reorganization cases. We find that in cases assigned to more pro-continuation courts, judges are less likely to convert reorganizations into liquidations (31% for a standard-deviation difference in continuation bias), more likely to extend the time available to present a reorganization plan (10%), and more likely to impose automatic stay on assets that – by law – should be excluded from it (7%). Instead, we find our measure of continuation bias does not predict a higher chance of granting a request to remove the current management of the bankrupt firm.

IV.D FIRMS' AND WORKERS' CONTINUATION

In this section, we study how judicial bias affects the probability that a firm continues in operation after bankruptcy and that current employees stay with the firm filing for bankruptcy. Before presenting regression results, we discuss a set of stylized facts that emerge from the raw data. We start in Figure III by focusing on all 3,343 firms that file for bankruptcy in our sample and following them from the year before the filing to five years after the filing. The figure reports the share of firms still in operation at the end of each year, splitting the sample into firms that are assigned to courts with below- vs above-median pro-continuation bias. A firm is considered to be in operation if it reports positive employment in RAIS at the end of the year.

Given the definition of pro-continuation bias described in equation (1), we expect firms to continue being in operation at different rates depending on which type of court they are assigned to in the bankruptcy year. By the end of the year in which they file for bankruptcy, 89% of firms assigned to high-pro-continuation courts are still in operation versus 80% in low-pro-continuation courts, a difference of 9 percentage points. This difference increases over time. Five years after the bankruptcy filing, the share of continuing firms in high-pro-continuation courts is still 23 percentage points higher than in low-pro-continuation courts (49% vs. 26%).

[Insert Figure III Here]

We test the effect of the leave-one-out measure of pro-continuation bias described in equation (1) on the probability of firm continuation by estimating a firm-level version of equation (2). The results are reported in Panel A of Table III. The outcome variables in

columns (1) to (3) are indicator variables capturing firms that report positive employment in RAIS at different horizons – one, three and five years – after the bankruptcy filing. The magnitude of the coefficient in column (3) indicates firms assigned to one-standard-deviation-higher pro-continuation courts have a 8.8-percentage-points higher probability of being in operation five years after the bankruptcy filing. The outcome variable in column (4) is the number of years a firm is observed in the post-bankruptcy period. We find that firms assigned to one-standard-deviation-higher pro-continuation courts are observed in operation 0.34 years longer.

Next, we examine the effect of pro-continuation bias on workers’ probability of continuation with the bankrupt firm. As in the case of firms, we start by describing the raw data. In Figure IV, we focus on the 426,657 full-time workers employed in bankrupt firms in the year before the bankruptcy filing and then follow their employment trajectory in the year of bankruptcy and in the five years afterwards. In each year, we separate workers into three categories: those employed in the firm filing for bankruptcy (stayers), those employed in other formal firms (leavers), and those who exit our sample (out-of-sample). The latter category includes three types of workers that we cannot distinguish in our data: unemployed, self-employed, and informal workers. We exclude from the out-of-sample category workers who become older than 65 years of age, whom we consider retirees.

For each year, Figure IV reports the share of workers in each of these three categories and divides the sample into employees of firms that are assigned to below- versus above-median pro-continuation courts. Notice that, by construction, all workers are in the category of stayers in the year before the firm files for bankruptcy, independently from the court to which they will be assigned.

Two important stylized facts emerge from our analysis. First, firms that file for bankruptcy experience an outflow of about half of incumbent workers in the year of filing. Second, the difference in the probability of staying with the bankrupt firm depends on the bias of the assigned court. The share of stayers in the bankruptcy year is 57% for employees assigned to high-pro-continuation courts and 49% for employees assigned to low-pro-continuation courts. This difference remains large in the years after bankruptcy, despite an overall decline in the share of stayers in both types of courts. Exit from the formal labor market is relatively similar across workers assigned to the two types of courts, whereas the share of leavers is higher in low-pro-continuation courts.

[Insert Figure IV Here]

Then, we estimate equation (2) to test the effect of continuation bias on the probability of staying employed with the bankrupt firm. We focus on two outcomes: an indicator variable equal to one for stayers in bankrupt firms at three different horizons (1,3, and 5 years after bankruptcy), and the number of years a worker stays with the bankrupt firm

after filing. The results are reported in Panel B of Table III and confirm the findings described in Figure IV.

Employees assigned to higher-pro-continuation courts are significantly more likely to stay with the same employer in the post-bankruptcy period. The coefficient in column (3) indicates workers assigned to one-standard-deviation-higher pro-continuation courts are 8 percentage points more likely to stay with the firm five years after the bankruptcy filing. The coefficient in column (4) indicates workers assigned to one-standard-deviation-higher pro-continuation courts stay, on average, 0.42 years longer with bankrupt firms.

[Insert Table III Here]

IV.E LABOR MARKET OUTCOMES: CONCEPTUAL FRAMEWORK

To guide the analysis of the effects of judicial bias favoring workers' continuation with the same employer on labor market outcomes, we start by discussing a simple conceptual framework based on the existing literature.

In perfectly competitive labor markets, workers of a given quality receive their competitive wage w^* , which equals their marginal product. Thus, as long as a worker's productivity is unchanged, an exogenous shock to their probability of continuation with the same employer will not generate a differential change in wages. Under this null hypothesis, pro-continuation bias should have *no effect* on workers' wages.

Frictions in the labor market can generate deviations from this benchmark, which have been studied in the existing literature. Wages might be set higher than the competitive benchmark ($w > w^*$), for example, in imperfectly competitive labor markets where workers earn rents from an employment relationship (Lamadon et al., 2019), or when workers are entrenched with the current employer (Berk et al., 2010). In this scenario, being assigned to a pro-continuation court should have a positive impact on worker's wages, because it prevents a contract termination that makes wages converge to their market level.

Other frictions can generate deviations of wages below their competitive benchmark ($w < w^*$), which would be the case, for example, in the presence of substantial search costs or when workers are imperfectly informed about their outside options in the labor market. Recent evidence shows workers tend to anchor their beliefs about outside options on their current employer's wage, and these beliefs are often incorrect, leading them to underestimate their outside options. In particular, Jäger et al. (2022) match a representative survey on workers' beliefs about their outside options with administrative employer-employee data from Germany, and document that between 10% and 17% of employment relationships in their data would not be viable if workers had accurate beliefs about outside options. Imperfect knowledge about outside options might be particularly costly for workers of financially distressed firms that pay lower wages due to their poor

performance.⁶ By remaining employed with the same firms, uninformed workers will underestimate their outside options and earn lower wages than they would have by searching for other employment. In this scenario, we expect pro-continuation bias to have a negative effect on workers' wages.

In the next sections, we first test empirically the effect of pro-continuation bias on employees' labor market outcomes (section IV.F), and then discuss this conceptual framework and provide more direct evidence on potential mechanisms in light of the results (section IV.G).

IV.F LABOR MARKET OUTCOMES: RESULTS

We start by studying the impact of pro-continuation bias on workers' wages. Wages are computed as the logarithm of the average monthly payments a worker receives during a given year. Payments include labor compensation, bonuses, tips, commissions, allowances for commuting costs, and contributions to social security, pension plans, health care, and unemployment insurance. These payments do not include private benefits offered by firms (e.g., private retirement plants, private healthcare plans, or life insurance plans), which are not observable in our data. We return to this point in section IV.G, in which we investigate the role of workplace amenities.

One potential concern when studying the impact of judicial bias on workers' wages is that, in the post-bankruptcy period, we can only observe this outcome for those workers who remain employed in the formal labor market. Thus, differential exit from the sample between workers assigned to courts with different levels of pro-continuation bias might affect the composition of the workers observed, and thus our results. We address this issue in two ways.

First, we directly estimate the effect of continuation bias on the probability of being formally employed in Table A4. The raw data reported in Figure IV shows workers assigned to pro-continuation courts are more likely to be formally employed at the end of the year in which the company files for bankruptcy, but that this gap closes already in the following year. Consistent with the raw data, Table A4 shows the difference in the probability of being recorded in the RAIS data is small (1.8 percentage points) and non-statistically significant in the year after the bankruptcy filing, and very close to zero at the three- and five-year post-bankruptcy horizons.

Second, we include in all our regressions the workers who exit the sample and make assumptions regarding the wage they receive when not formally employed. In our main specification, we assign to such workers wages equal to the average informal wage ob-

⁶A large literature in labor economics has documented a strong connection between firm performance and wages paid to its employees. See Card, Cardoso, Heining, and Kline (2018) for a review. In fact, Jäger et al. (2022) document that the share of workers underestimating their outside option is higher among those employed in less productive firms.

served in their local labor market as reported in the Brazilian National Household Survey (PNAD). As mentioned above, workers who exit RAIS can be classified into three categories that are not observable to us: unemployed, self-employed, and informally employed. Because of the large diffusion of informality in Brazil, where around two-thirds of businesses and more than one-third of employees are informal (Ulyssea, 2018), we think of informal wages as a good proxy of the labor market earnings of workers exiting our sample. In Appendix, we also report results in which we assign to such workers wages equal to zero.

We report the main results on the effects of continuation bias on wages in Table IV. We start in Panel A by estimating equation (2), where the outcome variable is the log of average workers' wages at $T = 1, 3, 5$ years after bankruptcy minus the log of their average wage in the year before bankruptcy $T = -1$. We find small and non-significant effects in the first year after bankruptcy, and negative and significant effects at the three- and five-year horizons, indicating employees assigned to more pro-continuation courts experience a larger decline in wages in the post-bankruptcy period. The magnitude of the estimated coefficients in columns (2) and (3) indicates average wages of workers assigned to courts with one-standard-deviation-higher pro-continuation bias are about 4.5% lower than those of comparable workers starting from three years after bankruptcy. In Table A5, we replicate the same specification assigning average annual wages equal to zero to workers exiting the sample. As shown, the estimated coefficients are similar in magnitude – about 5% – although less precisely estimated, with similar timing of the effect across different horizons.

[Insert Table IV Here]

Next, we estimate a two-stage least-squares regression to study the effect of staying with the bankrupt firm on employee wage trajectories after bankruptcy, using pro-continuation bias as an instrument for staying. The results are reported in Panel B of Table IV. When combined with the findings reported in Table III, the results indicate employees who remain employed with the same bankrupt firm because they are assigned to a pro-continuation court earn, on average, lower wages than counterfactual employees who leave the firm because they were assigned to a low-pro-continuation court. The magnitude of the 2SLS coefficient reported in column (3) implies one additional year of continuation with the same firm after bankruptcy leads to 10% lower wages five years after bankruptcy.

IV.G MECHANISM

In the previous section, we documented that workers of firms assigned to high-pro-continuation courts are more likely to remain employed with firms filing for bankruptcy

and earn, on average, lower wages in the post-bankruptcy period. This result raises the question of why employees 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.

IV.G.1 Information Frictions

We start by exploring the role of information. A potential explanation of our findings is that workers of bankrupt firms are imperfectly informed about their outside options and thus earn wages that are below their competitive benchmark in the labor market (Jäger et al., 2022). To explore this mechanism, we test the extent to which the impact of pro-continuation bias on wages depends on the degree of access to information about the local labor market that is available to workers.

We use two proxies for access to information. First, we use a measure of internet diffusion in the municipality where workers are located. The measure is the share of households with internet connection in each municipality as reported in the 2010 Brazilian Population Census. Second, we construct an individual-level measure of access to information about outside options based on the employment trajectories of former coworkers. This measure is inspired by the coworker-network measure proposed in Caldwell and Harmon (2019), and relies on the argument that workers often learn about their outside options through their network of former colleagues. To construct this measure, we rely on RAIS data, which allows us to observe all the workers who overlapped with the workers in our sample during the five years before the bankruptcy filing. Among past coworkers, we focus on those who left the firm voluntarily and found another formal job in Brazil. To identify voluntary separations, we rely on the RAIS question reporting the motive of separation for each employment spell.⁷ We construct two measures of access to information via coworker networks. The first is the share of workers with whom each employee shared some of their employment spell within the firm during the previous five years and who voluntarily left the firm. Because the network of coworkers might vary within the firm, we also construct a measure that focuses on former coworkers in the same occupation group within the firm. The classification of occupations used by the Brazilian Ministry of Labor (CBO2002) contains 10 occupation groups, which are identified by the first digit of the occupation code. Examples of these large groups are managers, professionals, mid-level technicians, and administrative workers.

The results are presented in Table V. For each of the three measures of access to information about outside options described above, we split the sample of workers at

⁷To avoid the risk that some separations might be only formally “voluntary,” whereas they are de facto imposed on workers by the firm for legal reasons, we exclude from voluntary separations those in which the worker does not re-enter the formal labor market within six months or when the average wage in the new job is lower than the average wage in the previous job.

the median of each measure, and re-estimate equation (2) within each sub-sample. The outcome variable in all columns is the log of average workers' wages five years after bankruptcy minus the log of their average wage in the year before bankruptcy. As shown, for all three measures, we find the negative effect of pro-continuation bias on wages is large and statistically significant for workers facing higher information frictions, and small and non-statistically significant for workers facing lower information frictions. The evidence presented in Table V is only suggestive of an information mechanism, because both internet diffusion and coworker networks are imperfect measures of workers' access to information and non-randomly assigned across workers. However, the findings are consistent with information frictions in local labor markets being an important driver of the negative impact of pro-continuation bias in bankruptcy on workers' wages.

IV.G.2 Risk Aversion

A second potential mechanism that can rationalize our findings is that 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, even when the market wage for a worker with her characteristics is above her current wage.

We test this mechanism in columns (1) to (4) of Table VI. In columns (1) and (2), the outcome variable is the change in labor income volatility – as measured by the coefficient of variation of log yearly labor earnings – between the pre-bankruptcy and the post-bankruptcy period for each worker. Note the estimates of labor income volatility include periods in which workers are not formally employed according to RAIS. Column (1) provides estimates from assigning the monthly informal labor income observed in the worker's respective municipality and year according to the PNAD survey to months in which workers exit the RAIS sample, whereas in column (2), we assign labor income equal to zero for the period during which the worker exits the sample. Our coefficient estimates suggest no evidence of higher future income volatility for workers in courts with lower pro-continuation bias, irrespective of how we treat workers exiting RAIS. If anything, the estimates from the specification that relies on informal income indicate labor income volatility appears to increase as the degree of continuation bias increases.

We provide further evidence against risk aversion as an explanatory factor in columns (3) and (4), where we replace our outcome variable with an indicator function equal to one if the change in the worker's earnings between the pre- and post-bankruptcy period is in the bottom 10th percentile of the distribution, and zero otherwise. This outcome is meant to capture the differential impact of pro-continuation bias on the probability that workers experience extreme declines in their labor income after bankruptcy. As shown, we find no significant differences when we focus on changes between the pre-bankruptcy year and the post-bankruptcy year, and between the pre-bankruptcy year and the two

years after bankruptcy. Taken together, these results indicate risk aversion is unlikely to be an important driver of the wage differences documented in the previous section.

[Insert Table VI Here]

IV.G.3 Adjustment Costs

Another potential explanation is that the wage gap we document captures adjustment costs associated with job change. These adjustment costs could be driven by the need for geographical relocation or changes in the sector of employment or occupation.

We test for this channel in columns (5) to (7) of Table VI. Although we are unable to precisely measure the monetary value of adjustment costs, we can study whether being assigned to a more pro-continuation court affects the post-bankruptcy probability that a worker relocates geographically, changes sector of employment, or changes occupation. In column (5), the outcome variable is an indicator equal to one if the worker moves to a different labor market after the bankruptcy filing, and zero otherwise. Consistent with a higher probability of staying with the current employer, we find that workers of firms assigned to higher-pro-continuation courts are about 8.3 percentage points less likely to transition to employers in different microregions.⁸ This result indicates pro-continuation bias is associated with a decrease in the probability of experiencing a longer commute or relocation costs. Columns (6) and (7) document that workers assigned to courts with higher pro-continuation bias are less likely to change their sector of employment (6.7 percentage points) or occupation (5.7 percentage points) in the post-bankruptcy period, although the estimate on occupational change is not statistically significant at standard levels.

IV.G.4 Non-wage Compensation

An important caveat regarding our analysis is that it does not consider the impact of non-wage compensation (Rosen, 1986). For example, to the extent that workers are willing to accept below-market wages due an increase in the provision of non-wage amenities by the current employer, our baseline results could be driven by a substitution effect between wage and non-wage components of compensation. In fact, survey responses in Jäger et al. (2022) suggest non-wage amenities are an important reason preventing workers from accepting higher-paying jobs.

Similar to existing papers in the literature, we are unable to directly observe workplace amenities in our data. However, the labor economics literature has proposed two parsimonious proxies for non-wage components of firm compensation that rely on the structure of

⁸Microregions are a geographical unit of statistical analysis used by the Brazilian Institute of Geography and Statistics (IBGE) that combines one or more economically integrated municipalities with similar production and geographic characteristics and typically constitutes a labor market.

employee transitions across firms observed in employer-employee datasets (Sorkin, 2018; Bagger and Lentz, 2019). In particular, following Lagaras (2020), we construct two measures of employees’ preferences over different firms, which we subsequently use as proxies for workplace amenities: the PageRank index proposed by Sorkin (2018) and the poaching rank proposed by Bagger and Lentz (2019). The PageRank index is constructed using the network of labor flows across firms to quantify the relative value of employment in a firm. A firm’s poaching rank depends on the share of employees directly recruited (“poached”) from other firms without experiencing an unemployment spell. The rationale behind these measures is that job-to-job transitions across firms capture revealed preferences of workers over two firms. Firms that are better able to directly attract employees from other firms can only do so by offering higher wages or better non-wage amenities. Note that although revealed-preference measures are unable to specify the dimensions that employees value about employment at a given firm, the estimation relies only on employee transitions across firms and thus is independent of any information on firm characteristics, including firm-specific wage premiums and size.

The results are reported in columns (8) and (9) of Table VI. Specifically, we estimate equation (2) using as the outcome the change in the proxies of workplace amenities for the employers associated with each worker. We construct such proxies – PageRank and poaching indexes — using labor flows observed over the whole period under study, so that these measures are time invariant at the employer level. The outcome variables are constructed as the average workplace amenities in the post bankruptcy period minus the workplace amenities in the year before bankruptcy for each worker. Thus, this specification relies on variation driven by workers who change employers after the bankruptcy filing. We find no significant differences in workplace amenities for workers assigned to higher- versus lower- pro-continuation courts. This observation suggests the negative effect of pro-continuation bias on wages documented in our baseline analysis is unlikely to reflect differential changes in amenities across employers in the post-bankruptcy period.

IV.H ADDITIONAL RESULTS AND ROBUSTNESS TESTS

In Table A6, we examine whether estimation error in our leave-one-out continuation-bias measure biases the standard errors in the main specification. To account for the potential presence of estimation error, we follow Cameron, Gelbach, and Miller (2008) and Dobbie, Goldsmith-Pinkham, and Yang (2017b) and cluster bootstrap our specification. In particular, we draw 1,000 samples at the judicial-district level with replacement, and we re-estimate the continuation-bias measure within each bootstrapped sample. We then repeat the baseline analysis by generating estimates of the effect of bias on continuation and wages within the sampled data. As a final step, we extract the parameter values and generate a distribution of t-statistics values and calculate the standard errors. Table A6 reports the baseline results of the paper along with the corrected p-values from the

bootstrap-t procedure, which indicate whether we reject the null hypothesis. As documented in column (2), the statistical significance of the baseline results tends to be similar to the one implied by the estimation-error-corrected p-values.

Kleiner and Hüther (2022) document that the assignment of bankruptcy judges to cases within district offices in the US can be predicted based on recent caseload. Sophisticated agents such as hedge funds exploit this predictability when timing their filing, and thus tend to be assigned more favorable judges. To evaluate the extent of this concern in our setting, we empirically test whether firms strategically time bankruptcy filings to manipulate random assignment. Note that in the context of the US studied by Kleiner and Hüther (2022), the predictability of the assignment process is particularly relevant in large cases, whereas filing assignments involving smaller cases are not predictable. Given that the median firm that files for bankruptcy in our sample has only 16 employees and the average firm has 128 employees, the concern that firms are able to influence the assignment process is largely mitigated. Nevertheless, we provide supportive evidence by examining whether, in our data, court caseload within a relatively narrow time window predicts case assignment. The results are presented in Table A7. We find the number of cases assigned to a court during the previous week (column (1)) or the previous two weeks (column (2)) are uncorrelated with the probability of a firm being assigned to a specific court. The findings in Table A7 address concerns related to the ability of firms to strategically time bankruptcy filings.

Finally, in Table A8, we re-estimate our baseline specification separately for cases where the initial filing request was a liquidation or a reorganization. Differently from the US but similarly to other developing economies, the majority of bankruptcy cases in Brazil are liquidations. As discussed in section II, in a liquidation, the court's primary role is to decide whether to grant or dismiss the liquidation request, whereas in a reorganization, the court closely monitors the process and decides on multiple steps of the reorganization process. The results reported in Table A8 document that the negative effect of continuation on wages are largely driven by liquidation requests, whereas we find no significant effects in the case of reorganizations. This finding is not surprising given that 90% of workers in our sample were employed in firms that filed for liquidation. This result indicates pro-continuation courts affect employees' future labor market outcomes mostly through the decision to grant or deny liquidation requests, rather than other intermediate decisions undertaken during the reorganization process.

V 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 limited attention in the

context of developing countries is judicial bias in the interpretation of the bankruptcy code. In particular, judges may disproportionately consider the adverse effects of liquidating a firm on employees and delay the liquidation of insolvent firms, even if doing so means deviating from the actual wording of the law.

In the paper, we use comprehensive manually-collected information on the universe of bankruptcy cases filed in the State of São Paulo between 2005 and 2015 to understand the role of pro-continuation bias in affecting bankruptcy resolution and employees' labor market outcomes. Exploiting the random assignment of bankruptcy cases across courts within a judicial district, we document that courts with higher pro-continuation bias tend to facilitate the continuation of insolvent firms and of firm-employee relationships. Our findings indicate employees of firms facing higher-pro-continuation courts experience larger declines in wages in the post-bankruptcy period relative to employees of firms facing lower-pro-continuation courts within the same judicial district.

Examining the underlying mechanisms behind our baseline effects, the evidence suggests imperfect information about outside options in the labor market and adjustment costs associated with job change might be important drivers of the negative impact of continuation with the same employer on workers' wages. Policies that foster the diffusion of information about labor market compensation among workers might be particularly important in developing economies and for workers whose employers are undergoing bankruptcy proceedings.

REFERENCES

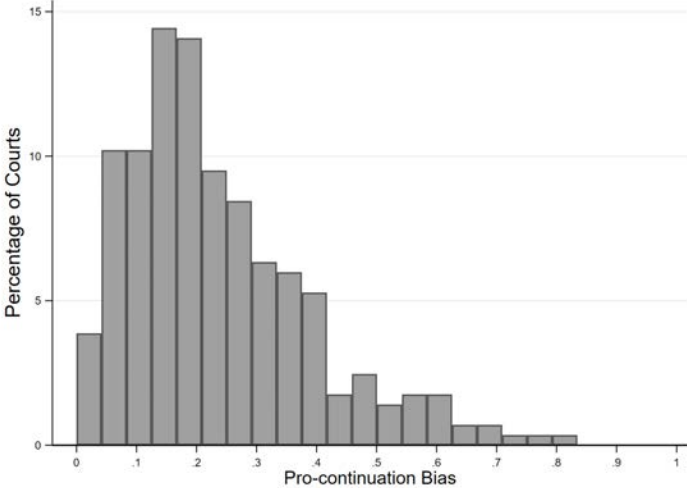
- Abadie, A., S. Athey, G. W. Imbens, and J. Wooldridge (2017). When should you adjust standard errors for clustering?
- Agrawal, A. K. and D. A. Malsa (2013). Labor Unemployment Risk and Corporate Financing Decisions. *Journal of Financial Economics* 108(2), 449 – 470.
- Antill, S. (2021). Do the right firms survive bankruptcy? *Journal of Financial Economics*.
- Arida, P., E. Bacha, and A. Lara-Resende (2005). Credit, Interest, and Jurisdictional Uncertainty: Conjectures on the Case of Brazil. *Inflation targeting, debt, and the Brazilian experience, 1999 to 2003*, 265–293.
- Arnold, D., W. Dobbie, and C. S. Yang (2018). Racial bias in bail decisions. *The Quarterly Journal of Economics* 133(4), 1885–1932.
- Babina, T. (2019, 11). Destructive Creation at Work: How Financial Distress Spurs Entrepreneurship. *The Review of Financial Studies* 33(9), 4061–4101.
- Bagger, J. and R. Lentz (2019). An empirical model of wage dispersion with sorting. *The Review of Economic Studies* 86(1), 153–190.
- Baghai, R., R. Silva, V. Thell, and V. Vig (2020). Talent in Distressed Firms: Investigating the Labor Costs of Financial Distress. *Journal of Finance Forthcoming*.
- Berk, J. B., R. Stanton, and J. Zechner (2010). Human Capital, Bankruptcy, and Capital Structure. *The Journal of Finance* 65(3), 891–926.
- Bernstein, S., E. Colonnelli, and B. Iverson (2019). Asset allocation in bankruptcy. *The Journal of Finance* 74(1), 5–53.
- Blazy, R., B. Chopard, A. Fimayer, and J.-D. Guigou (2011). Employment Preservation vs. Creditors’ Repayment under Bankruptcy Law: The French Dilemma? *International Review of Law and Economics* 31(2), 126 – 141.
- Bris, A., I. Welch, and N. Zhu (2006). The Costs of Bankruptcy: Chapter 7 Liquidation versus Chapter 11 Reorganization. *The Journal of Finance* 61(3), 1253–1303.
- Brown, J. and D. A. Malsa (2016). Boarding a Sinking Ship? An Investigation of Job Applications to Distressed Firms. *The Journal of Finance* 71(2), 507–550.
- Caggese, A., V. Cuñat, and D. Metzger (2019). Firing the Wrong Workers: Financing Constraints and Labor Misallocation. *Journal of Financial Economics* 133(3), 589 – 607. JFE Special Issue on Labor and Finance.
- Cahuc, P., S. Carcillo, and B. Patault (2019). Are Pro-Worker Judges Detrimental to Firm Survival and Employment? *Working Paper*.
- Caldwell, S. and N. Harmon (2019). Outside options, bargaining, and wages: Evidence from coworker networks.

- Cameron, A. C., J. B. Gelbach, and D. L. Miller (2008). Bootstrap-based improvements for inference with clustered errors. *The Review of Economics and Statistics* 90(3), 414–427.
- Canayaz, M. and M. Gustafson (2021). Judicial Ideology and Business Dynamics. *Working Paper*.
- Card, D., A. R. Cardoso, J. Heining, and P. Kline (2018). Firms and Labor Market Inequality: Evidence and Some Theory. *Journal of Labor Economics* 36(S1), S13–S70.
- Chang, T. and A. Schoar (2013). Judge Specific Differences in Chapter 11 and Firm Outcomes. *Unpublished Working Paper, National Bureau of Economic Research*.
- Dobbie, W., P. Goldsmith-Pinkham, and C. S. Yang (2017a). Consumer bankruptcy and financial health. *Review of Economics and Statistics* 99(5), 853–869.
- Dobbie, W., P. Goldsmith-Pinkham, and C. S. Yang (2017b, 12). Consumer Bankruptcy and Financial Health. *The Review of Economics and Statistics* 99(5), 853–869.
- Dobbie, W. and J. Song (2015). Debt relief and debtor outcomes: Measuring the effects of consumer bankruptcy protection. *American Economic Review* 105(3), 1272–1311.
- Doyle Jr, J. J. (2007). Child protection and child outcomes: Measuring the effects of foster care. *American Economic Review* 97(5), 1583–1610.
- Falato, A. and N. Liang (2016). Do Creditor Rights Increase Employment Risk? Evidence from Loan Covenants. *The Journal of Finance* 71(6), 2545–2590.
- Fonseca, J. and B. Van Doornik (2019). Financial Development, Labor Markets, and Aggregate Productivity: Evidence from Brazil. *Journal of Financial Economics Forthcoming*.
- Franks, J. R., K. G. Nyborg, and W. N. Torous (1996). A Comparison of US, UK, and German Insolvency Codes. *Financial Management* 25(3), 86–101.
- Galasso, A. and M. Schankerman (2015). Patents and cumulative innovation: Causal evidence from the courts. *The Quarterly Journal of Economics* 130(1), 317–369.
- Gennaioli, N. and A. Shleifer (2008). Judicial Fact Discretion. *Journal of Legal Studies* 37(1), 1–35.
- Graham, J. R., H. Kim, S. Li, and J. Qiu (2021). Employee Costs of Corporate Bankruptcy. Technical report, National Bureau of Economic Research.
- Helpman, E., O. Itskhoki, M.-A. Muendler, and S. J. Redding (2016). Trade and inequality: From theory to estimation. *The Review of Economic Studies* 84(1), 357–405.
- Hotchkiss, E. S. (1995). Postbankruptcy Performance and Management Turnover. *The Journal of Finance* 50(1), 3–21.
- Iverson, B. (2018). Get in Line: Chapter 11 Restructuring in Crowded Bankruptcy Courts. *Management Science* 64(11), 5370–5394.

- Iverson, B. C., J. Madsen, W. Wang, and Q. Xu (2020). Financial Costs of Judicial Inexperience: Evidence from Corporate Bankruptcies. *Available at SSRN 3084318*.
- Jäger, S., C. Roth, N. Roussille, and B. Schoefer (2022). Worker beliefs about outside options.
- Kleiner, K. and N. Hüther (2022). Are Judges Randomly Assigned to Chapter 11 Bankruptcies? Not According to Hedge Funds. *Kelley School of Business Research Paper No. 2022-05*.
- Kling, J. R. (2006). Incarceration length, employment, and earnings. *American Economic Review* 96(3), 863–876.
- Lagaras, S. (2020). M&as, employee costs and labor reallocation. *Working Paper*.
- Lamadon, T., M. Mogstad, and B. Setzler (2019). Imperfect competition, compensating differentials and rent sharing in the us labor market.
- Lamounier, B. and A. De Souza (2002). Las Elites Brasileiras e o Desenvolvimento Nacional: Fatores de Consenso e Dissenso, São Paulo: Instituto de Estudos Economicos, Sociais e Politicos de São Paulo, October, 31 pp.
- Li, B. and J. Ponticelli (2020). Going Bankrupt in China. *Unpublished Working Paper, National Bureau of Economic Research*.
- Pinheiro, A. C. (2003). Judiciário, Reforma e Economia: a Visão dos Magistrados.
- Ponticelli, J. and L. S. Alencar (2016). Court Enforcement, Bank Loans, and Firm Investment: Evidence from a Bankruptcy Reform in Brazil. *The Quarterly Journal of Economics* 131(3), 1365–1413.
- Posner, R. (2005). Judicial Behavior and Performance: An Economic Approach. *Florida State University Law Review* 32, 1259.
- Rodano, G., N. Serrano-Velarde, and E. Tarantino (2016). Bankruptcy Law and Bank Financing. *Journal of Financial Economics* 120(2), 363–382.
- Rosen, S. (1986). The theory of equalizing differences. *Handbook of labor economics* 1, 641–692.
- Skeel, D. A. (2001). *Debt's Dominion: A History of Bankruptcy Law in America*. Princeton University Press.
- Sorkin, I. (2018). Ranking firms using revealed preference. *The quarterly journal of economics* 133(3), 1331–1393.
- Ulyssea, G. (2018). Firms, informality, and development: Theory and evidence from brazil. *American Economic Review* 108(8), 2015–47.
- Visaria, S. (2009). Legal Reform and Loan Repayment: The Microeconomic Impact of Debt Recovery Tribunals in India. *American Economic Journal: Applied Economics* 1(3), 59–81.

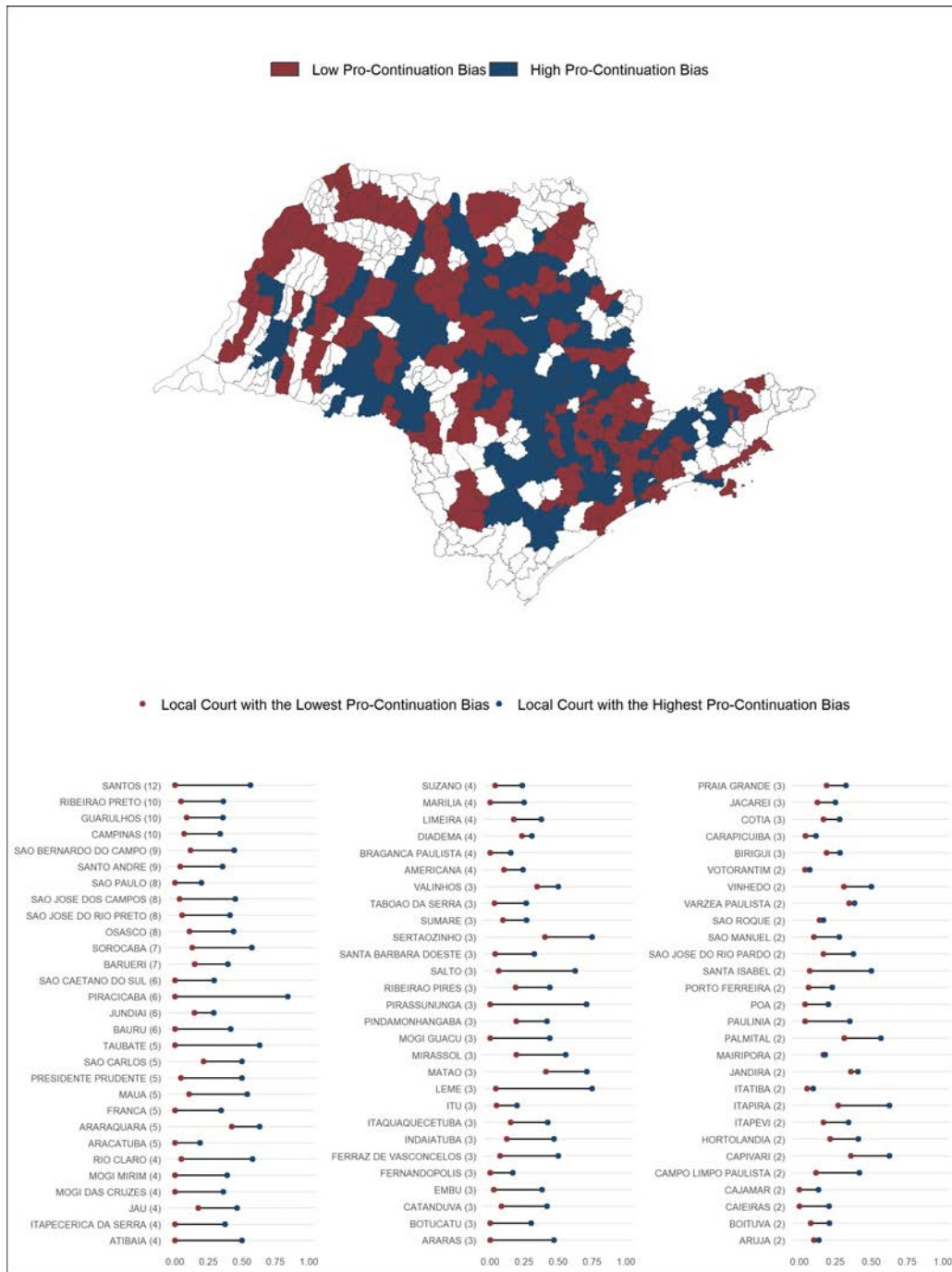
FIGURES

FIGURE I: DISTRIBUTION OF PRO-CONTINUATION BIAS ACROSS COURTS



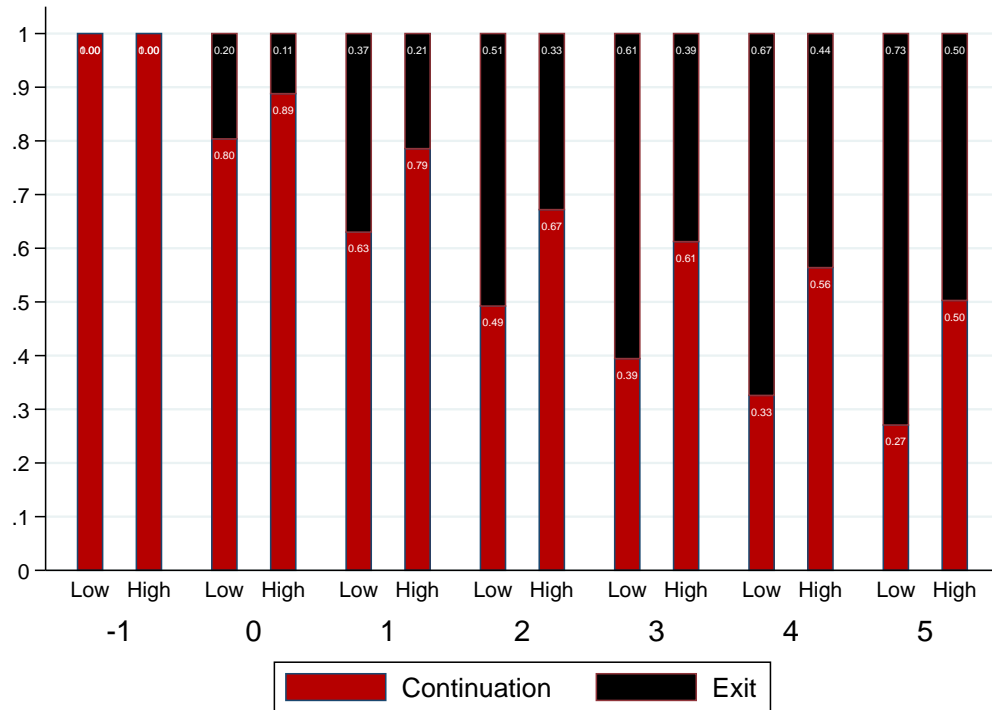
Notes: The figure reports the percentage of courts with different levels of pro-continuation bias. Pro-continuation bias is defined as the share of firms that filed for bankruptcy (including both reorganizations and liquidations) in a given court and are observed in RAIS five years after the bankruptcy filing.

FIGURE II: PRO-CONTINUATION BIAS BY JUDICIAL DISTRICT AND COURT



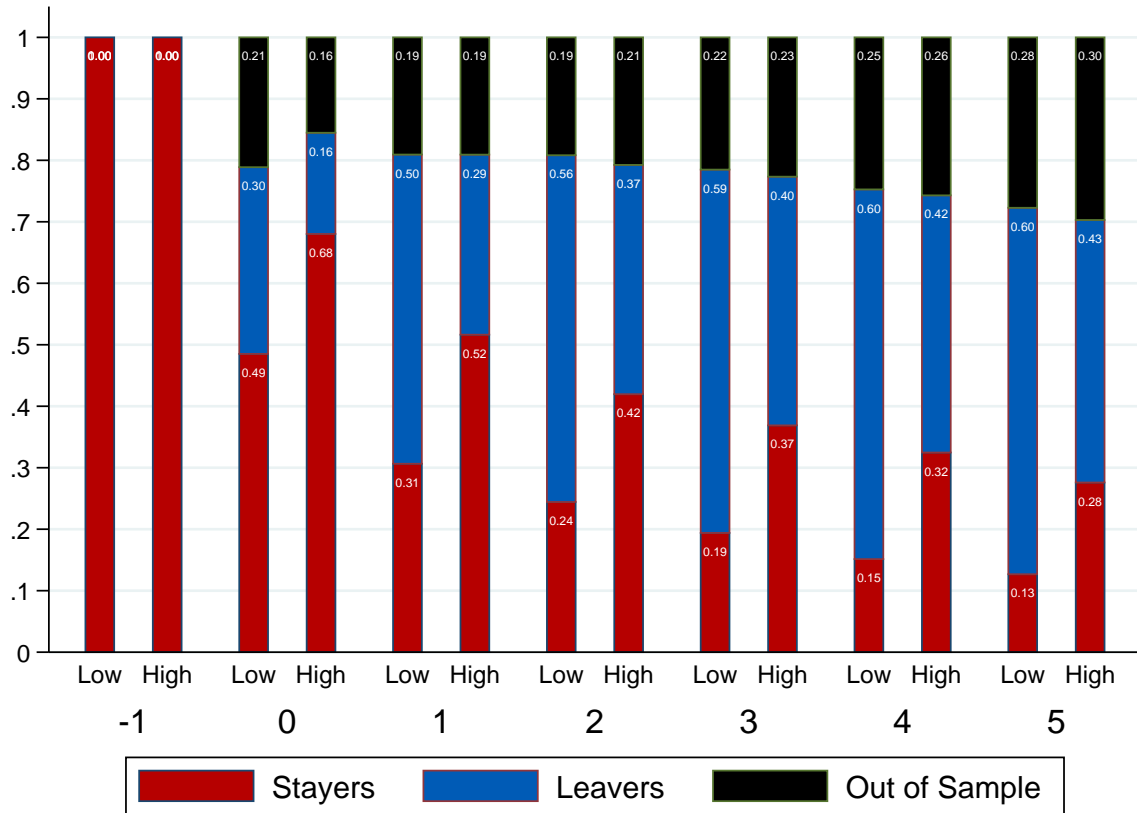
Notes: The upper part of the figure reports a map with the geographical distribution of our measure of pro-continuation bias across judicial districts in the State of São Paulo. The pro-continuation bias at the judicial-district level is estimated as the weighted average of the bias of the courts present in a judicial district, where the weights correspond to the share of bankruptcy cases filed in a particular court. We classify districts as high vs low pro-continuation-bias districts based on the median value of the pro-continuation bias measure. The lower part of the figure reports the names of the judicial districts used in the empirical analysis, the number of local courts in each district (in parentheses), and the range in pro-continuation bias across courts in each judicial district, with red dots representing the local court with the lowest pro-continuation bias in the judicial district and the blue dot representing the local court with the highest pro-continuation bias in the judicial district.

FIGURE III: CONTINUATION OF FIRMS FILING FOR BANKRUPTCY



Notes: The figure reports the share of firms that are in operation and the share of firms that exit our sample for the period spanning the year prior to the bankruptcy filing and the five years after the bankruptcy filing. All firms are in operation in the year before bankruptcy. We report shares separately for firms assigned to high- versus low- pro-continuation courts.

FIGURE IV: CONTINUATION OF EMPLOYEES OF BANKRUPT FIRMS



Notes: The figure reports the employment trajectory of employees observed in the year before firms in our sample file for bankruptcy. At each horizon, we divide employees into three groups: (i) employees who remain employed in firms filing for bankruptcy (stayers), (ii) employees who reallocate to other firms in the formal labor market (leavers), and (iii) employees who exit the RAIS sample (out of sample). Individuals who become older than 65 are considered retirees and are excluded in the calculation of the shares of the three groups. We focus on the period between the year before the bankruptcy filing and the five years after the bankruptcy filing. By construction, all workers in our sample are considered “stayers” in the year before the bankruptcy filing.

TABLES

TABLE I: SUMMARY STATISTICS

Panel A: Characteristics of Bankrupt Firms at t = -1			
Variables	Median	Mean	SD
Number of Employees	16	128	614
Total Wage Bill (R\$)	172,489	2,128,065	11,647,733
Log Employment	2.77	2.96	1.75
Log Total Wage Bill	12.06	12.27	2.00
High-Skilled Share	0.10	0.20	0.24
Number of Firms	3,343		
Panel B: Bankrupt Firms by Sector			
Sector		Number of Firms	Percentage Share
Agriculture		17	0.00
Manufacturing		1,750	0.52
Retail		969	0.29
Services		419	0.13
Transportation/Utilities/Communications		188	0.06
Panel C: Characteristics of Employees in Bankrupt Firms at t = -1			
Variables	Median	Mean	SD
Years of Education	12	11.59	3.32
Female	0	0.34	0.47
Age	36	37.70	9.04
Tenure (in Months)	36	60.23	67.85
Log(Wage)	6.61	6.80	0.87
Number of Workers	426,657		
Panel D: Measure of Pro-continuation Bias			
Variables	Median	Mean	SD
Pro-Continuation Bias	0.23	0.20	0.12
Number of Cases	3,343		

Notes: Panel A reports summary statistics on observable characteristics of firms in our sample in the year prior to the bankruptcy event. Panel B reports the number and percentage of firms by sector for firms in our sample. Panel C reports summary statistics on observable characteristics of employees in our sample in the year prior to the bankruptcy event. Panel D provides descriptive statistics for the pro-continuation-bias measure.

TABLE II: RANDOMIZATION TEST

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Outcomes	Continuation Bias								
Education	0.055 (0.035)								
Female		-0.006 (0.008)							
Age at t = -1			-0.000 (0.001)						
Log Wage at t = -1				0.043 (0.031)					
Tenure at t = -1					0.000 (0.000)				
Δ Log Wage (-5,-1)						-0.001 (0.015)			
Δ Log Wage (-3,-1)							-0.008 (0.027)		
Firm Size at t = -1								0.022 (0.024)	
Liquidation									0.202 (0.173)
R ²	0.928	0.928	0.928	0.928	0.928	0.928	0.928	0.928	0.930
Observations	426,657	426,657	426,657	426,657	426,657	426,657	426,657	426,657	426,657

Notes: The table reports estimates of the sensitivity of the pro-continuation-bias measure to a set of employee, firm, and case characteristics. The dependent variable is the leave-one-out pro-continuation bias measure at the bankruptcy-case level. Employee characteristics include variables that capture an individual’s education, gender, age, wage, and tenure measured in the year prior to the bankruptcy filing, along with variables for growth in log wage measured for different windows in the period prior to the bankruptcy request. Firm characteristics include employment levels at the year prior to the bankruptcy filing, whereas case characteristics include an indicator variable that is equal to one for liquidations and zero for reorganizations. Specifications include judicial-district x bankruptcy-year-quarter 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-quarter level. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE III: THE EFFECT OF JUDICIAL BIAS ON FIRM AND WORKER CONTINUATION

	(1)	(2)	(3)	(4)
Panel A: Firm Continuation				
Outcomes	Firm Continuation {0,1}			Continuation Years
	T=1	T=3	T=5	
Continuation Bias	0.027 (0.019)	0.082*** (0.017)	0.088*** (0.012)	0.338*** (0.083)
R ²	0.246	0.272	0.293	0.279
Observations	3,343	3,343	3,343	3,343
Judicial District × Bankruptcy Year-Quarter FE	✓	✓	✓	✓
Panel B: Worker Continuation				
Outcomes	Worker Continuation {0,1}			Stay Years
	T=1	T=3	T=5	
Continuation Bias	0.090*** (0.027)	0.067*** (0.021)	0.079*** (0.029)	0.423*** (0.138)
R ²	0.227	0.217	0.208	0.273
Observations	426,657	426,657	426,657	426,657
JD × Bankruptcy-Year-Quarter FE	✓	✓	✓	✓
Employee Controls	✓	✓	✓	✓

Notes: The table reports the effects of pro-continuation bias on firm and employee continuation. In Panel A, the outcome variable in columns (1) to (3) is an indicator variable equal to 1 if a firm reports non-zero employment in RAIS at each horizon $T = 1, 3,$ and 5 years after bankruptcy filing, and 0 otherwise, whereas the outcome variable in column (4) captures the number of years a firm is observed in RAIS in the post-bankruptcy period. In Panel B, the outcome variable in columns (1) to (3) is an indicator variable equal to 1 for employees who remain employed with the bankrupt firm at the end of each horizon $T = 1, 3,$ and 5 years after the bankruptcy filing of their employer in $T = -1,$ and 0 otherwise, whereas the outcome variable in column (4) captures the number of years a worker remains employed with the bankrupt firm in the post-bankruptcy period. Continuation bias is the leave-one-out measure of continuation bias at the court level described in Section IV.A. Our sample includes full-time employees present as of $T = -1$ in firms that file for bankruptcy at $T = 0.$ Employee controls include years of education, age, and gender observed as of $T = -1.$ Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level. Significance levels: *** $p < 0.01,$ ** $p < 0.05,$ * $p < 0.1.$

TABLE IV: THE EFFECT OF JUDICIAL BIAS ON WAGES

	(1)	(2)	(3)
Panel A: Reduced-Form Coefficients			
Outcomes	Log Wage (t=T) - Log Wage (t=-1)		
	T=1	T=3	T=5
Continuation Bias	0.004 (0.021)	-0.046*** (0.006)	-0.044*** (0.013)
R ²	0.190	0.217	0.241
Observations	426,657	426,657	426,657
JD × Bankruptcy Year-Quarter FE	✓	✓	✓
Employee Controls	✓	✓	✓
Panel B: 2SLS Coefficients			
Outcomes	Log Wage (t=T) - Log Wage (t=-1)		
	T=1	T=3	T=5
Stay Years	0.009 (0.047)	-0.109*** (0.033)	-0.105* (0.061)
Observations	426,657	426,657	426,657
JD × Bankruptcy Year-Quarter FE	✓	✓	✓
Employee Controls	✓	✓	✓

Notes: The table reports the effects of pro-continuation bias on employees' wages by estimating the regression specification described in equation (2). Panel A reports estimates using the leave-one-out measure of continuation bias at the court level described in Section IV.A, whereas Panel B reports 2SLS estimates using the leave-one-out measure of continuation bias as an instrument for an employee's post-bankruptcy employment spell in the firm that filed for bankruptcy. The outcome variable in both panels is the log of average employee wages at different horizons after the bankruptcy filing ($T = 1, 3$, and 5 years after the filing) minus the log of average employee wages observed in the year before bankruptcy filing ($T = -1$). Our sample includes full-time employees present as of $T = -1$ in firms that file for bankruptcy at $T = 0$. Employees who exit the sample at each horizon are assigned the average wage observed in the informal labor market in their municipality and year as reported in the Brazilian National Household Sample Survey (PNAD). Employee controls include years of education, age, and gender observed as of $T = -1$. Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE V: INFORMATION MECHANISM

	(1)	(2)	(3)	(4)	(5)	(6)
	Log Wage (t=5) - Log Wage (t=-1)					
Outcomes	Internet Diffusion		Coworker Network (Firm Level)		Coworker Network (Firm-Occupation Level)	
	< p50	> p50	< p50	> p50	< p50	> p50
Continuation Bias	-0.071*** (0.010)	0.029 (0.062)	-0.088*** (0.002)	-0.021 (0.026)	-0.082*** (0.001)	-0.032 (0.027)
R ²	0.250	0.232	0.250	0.251	0.288	0.212
Observations	195,871	230,773	206,173	220,451	221,436	205,207
Judicial-District \times Bankruptcy-Year-Quarter FE	✓	✓	✓	✓	✓	✓
Employee Controls	✓	✓	✓	✓	✓	✓

Notes: The outcome variable is the log of average employee wages five years after bankruptcy filing ($T = 5$) minus the log of average employee wages observed in the year prior to the bankruptcy filing ($T = -1$). Our sample includes full-time employees present as of $T = -1$ in firms that file for bankruptcy at $T = 0$. Employees who exit the sample at each horizon are assigned the average wage observed in the informal labor market in their municipality and year as reported in the Brazilian National Household Sample Survey (PNAD). Internet diffusion is defined as the share of the population with a computer with access to the internet according to the 2010 Population Census. *CoworkerNetwork* is an employee-level measure capturing the share of an employee's colleagues that voluntarily transitioned to other companies in the five years before the bankruptcy filing. We define as colleagues the individuals employed at the same firm and overlapped with an employee in the five-year-period prior to the bankruptcy filing in columns (3) and (4), and individuals employed at the same firm and one-digit occupation and overlapped with an employee in the five-year-period prior to the bankruptcy filing in columns (5) and (6). Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

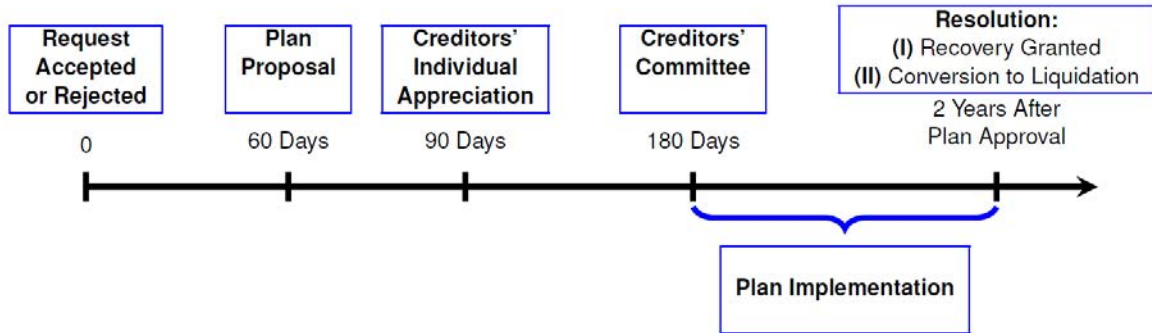
TABLE VI: ADDITIONAL MECHANISMS:
RISK AVERSION, ADJUSTMENT COSTS, WORKPLACE AMENITIES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Risk Aversion				Adjustment Costs			Workplace Amenities	
Outcomes	ΔCV of Log Earnings		P10 $\{0,1\}$ $\Delta \text{Log}(\text{Earnings})$		Microregion Change	Sector Change	Occupation Change	PageRank	Poaching Index
	With Informality	With 0s	[-1, 0]	[-1, 2]					
Continuation Bias	0.003** (0.002)	0.028 (0.018)	-0.008 (0.019)	0.009 (0.007)	-0.083*** (0.028)	-0.067** (0.030)	-0.057 (0.039)	-0.001 (0.001)	-0.001 (0.003)
R ²	0.059	0.099	0.112	0.124	0.124	0.134	0.104	0.061	0.131
Observations	426,657	426,657	426,657	426,657	426,657	426,657	426,657	415,935	420,035
JD \times Bankruptcy Year-Quarter FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Employee Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: Columns (1) to (4) provide estimates of the effect of pro-continuation bias on income volatility for employees in firms that file for bankruptcy. In columns (1) and (2), the dependent variable is the change in the coefficient of variation of log earnings between the post- and pre-bankruptcy period. In columns (3) and (4), the dependent variable is an indicator equal to 1 if the change in the employee's earnings over different time windows is in the lower 10th percentile, and 0 otherwise. Columns (5) to (7) examine the role of adjustment costs by estimating the effect of pro-continuation bias on the probability of geographical relocation or the probability of changing the sector of employment or occupation in the post-bankruptcy period. Columns (8) and (9) report estimates of the effect of pro-continuation bias on changes in workplace amenities as captured by the PageRank and Poaching Index described in Section IV.G. Continuation bias is the leave-one-out measure of continuation bias at the court level described in Section IV.A. Our sample includes full-time employees present as of $T = -1$ in firms that file for bankruptcy at $T = 0$. Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level. 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.

TABLE A1: COMPARING IN-SAMPLE FIRMS AND EMPLOYEES WITH POPULATION OUTSIDE STATE OF SÃO PAULO

Panel A: Firm-Level Characteristics					
Variables	Bankrupt Firms in São Paulo	Non-Bankrupt Firms in São Paulo	Difference	Population (Excluding São Paulo)	Difference
	Mean	Mean		Mean	
Number of Employees	128	16	112***	15	113***
Total Wage Bill (R\$)	2,128,065	165,897	1,962,168***	131,280	1,996,785***
Log Employment	2.96	1.25	1.71***	1.17	1.79***
Log Total Wage Bill	12.27	9.66	2.61***	9.31	2.96***
High-Skilled Share	0.20	0.11	0.09***	0.09	0.11***
Number of Firms	3,343	1,574,348		4,386,518	
Panel B: Sectoral Composition					
Variables	Bankrupt Firms in São Paulo	Non-Bankrupt Firms in São Paulo	Difference	Population (Excluding São Paulo)	Difference
	Mean	Mean		Mean	
Agriculture	0.00	0.06	-0.06***	0.10	-0.10***
Manufacturing	0.52	0.11	0.41***	0.12	0.40***
Retail	0.29	0.43	-0.14***	0.43	-0.14***
Services	0.13	0.35	-0.22***	0.32	-0.19***
Transportation/Utilities/Communications	0.06	0.05	0.01	0.04	0.02**
Panel C: Employee-Level Characteristics					
Variables	Bankrupt Firms in São Paulo	Non-Bankrupt Firms in São Paulo	Difference	Population (Excluding São Paulo)	Difference
	Mean	Mean		Mean	
Years of Education	11.59	11.67	0.08	11.34	0.25***
Female	0.34	0.43	-0.09***	0.43	-0.09***
Age	37.70	35.60	2.10***	36.05	1.65***
Tenure (in Months)	60.23	55.15	5.08***	62.38	-2.15***
Log(Wage)	6.80	6.54	0.26***	6.33	0.47***
Number of Employees	426,657	24,108,513		58,929,739	

Notes: Panel A table reports descriptive statistics for firms in our sample in the year prior to the bankruptcy event, the population of firms in São Paulo that have never filed for bankruptcy, and the population of firms outside São Paulo. Panel B reports the sectoral distribution of firms in our sample, the population of firms in São Paulo that have never filed for bankruptcy, and the population of firms outside São Paulo. In Panel C, the table reports descriptive statistics for employees in our sample in the year prior to the bankruptcy event, employees in firms in São Paulo that never filed for bankruptcy, and the population of employees outside São Paulo.

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

TABLE A2: RELEVANT PROVISIONS

Article	Provision	Pro-continuation Decision
Art. 49, Par. 3	Certain Secured Claims Excluded from Automatic Stay	Not Excluded
Art. 6, Par. 3	Non-extendable 180 Days for Reorganization Plan	Extended
Art. 73, 61	Request to Convert Reorganization into Liquidation	Denied
Art. 64	Creditors Request Managers' Removal	Denied
	Liquidation Request by Creditors	Denied

Notes: The table lists the five critical bankruptcy provisions – and relevant articles of the Brazilian bankruptcy code – used to examine the effect of pro-continuation bias on judicial decisions.

TABLE A3: THE EFFECT OF PRO-CONTINUATION BIAS ON CASE-LEVEL DECISIONS

Outcomes	(1)	(2)	(3)	(4)	(5)
	Liquidation Dismissed	Conversion to Liquidation {0,1}	Pro-continuation Article 180	Pro-continuation Article 49	Pro-continuation Article 64
Continuation Bias	0.301*** (0.088)	-0.308*** (0.039)	0.104** (0.040)	0.071*** (0.017)	-0.002 (0.002)
R ²	0.124	0.036	0.039	0.024	0.353
Observations	2,758	703	703	703	703
JD × Bankruptcy Year-Quarter FE	✓	✓	✓	✓	✓

Notes: The table reports the relation between pro-continuation bias and the type of bankruptcy resolution in liquidations and reorganization by employing equation (3). In column (1), the dependent variable is an indicator variable equal to 1 if a liquidation case is dismissed, and 0 otherwise. In column (2), the dependent variable is an indicator variable equal to 1 if a reorganization case is converted into liquidation, and 0 otherwise. In columns (3) to (5), the dependent variables are indicator variables equal to 1 if courts in reorganization cases adopt pro-continuation decisions, namely extending of the time available to present a reorganization plan (Article 180), imposing an automatic stay on assets for which the law mandates exclusion (Article 49), or granting a request to remove the current management of the bankrupt firm (Article 64), respectively, and 0 otherwise. Continuation bias is the leave-one-out measure of continuation bias at the court level described in Section IV.A. Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level.

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

TABLE A4: IN-SAMPLE PROBABILITY

	(1)	(2)	(3)
Outcomes	Present in RAIS {0,1}		
	T=1	T=3	T=5
Continuation Bias	0.018 (0.014)	0.008 (0.010)	0.006 (0.010)
R ²	0.062	0.057	0.060
Observations	426,657	426,657	426,657

Notes: The table reports the effects of pro-continuation bias on the probability of employees in firms that file for bankruptcy to be present in the RAIS sample in the post-bankruptcy period. The outcome variable is an indicator variable equal to 1 if the worker is formally employed (observed in RAIS) at different horizons after the bankruptcy filing ($T = 1, 3,$ and 5 years after the filing), and 0 otherwise. Continuation bias is the leave-one-out measure of continuation bias at the court level described in Section IV.A. Our sample includes full-time employees present as of $T = -1$ in firms that file for bankruptcy at $T = 0$. Employee controls include years of education, age, and gender observed as of $T = -1$. Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE A5: ROBUSTNESS TO USING LOG WAGES = 0 FOR OUT-OF-SAMPLE EMPLOYEES

Outcomes	(1)	(2)	(3)
	Log Wage (t=T) - Log Wage (t=-1)		
	T=1	T=3	T=5
Continuation Bias	0.079 (0.094)	-0.054* (0.031)	-0.049* (0.028)
R ²	0.085	0.081	0.043
Observations	426,657	426,657	426,657

Notes: The table reports the results obtained by estimating the regression specification described in equation (2). The outcome variable is the log of average employee wages at different horizons after the bankruptcy filing ($T = 1, 3$, and 5 years after the filing) minus the log of average employee wages observed in the year before bankruptcy filing ($T = -1$). Continuation bias is the leave-one-out measure of continuation bias at the court level described in Section IV.A. Our sample includes full-time employees present as of $T = -1$ in firms that file for bankruptcy at $T = 0$. Employees who exit the sample at each horizon are assigned a log wage equal to 0. Employee controls include years of education, age, and gender observed as of $T = -1$. Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level.

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

TABLE A6: MAIN RESULTS WITH ESTIMATION-ERROR-CORRECTED P-VALUES

Outcomes	Source	(1)	(2)
		Estimated Coefficients and Standard Errors	Corrected p-values
Continuation Years (Firm)	Table III, Panel A, Column (4)	0.338*** (0.083)	[0.016]
Stay Years (Employees)	Table III, Panel B, Column (4)	0.423*** (0.138)	[0.042]
Log Wage (t=3) - Log Wage (t=-1) (Correction with Informal Wages)	Table IV, Panel A, Column (2)	-0.046*** (0.006)	[0.002]
Log Wage (t=5) - Log Wage (t=-1) (Correction with Informal Wages)	Table IV, Panel A, Column (3)	-0.044*** (0.013)	[0.006]
Log Wage (t=3) - Log Wage (t=-1) (2SLS Estimation)	Table IV, Panel B, Column (2)	-0.109*** (0.033)	[0.041]
Log Wage (t=5) - Log Wage (t=-1) (2SLS Estimation)	Table IV, Panel B, Column (3)	-0.105* (0.061)	[0.105]
Fixed Effects and Employee Controls		Yes	Yes
Observations		426,657	426,657

Notes: The table repeats the baseline results of the paper in column (1) and presents the respective p-values that adjust for estimation error in the construction of our continuation-bias measure following Cameron et al. (2008) and Dobbie et al. (2017b) in column (2). Specifically, we cluster bootstrap our specification by (i) drawing 1,000 samples at the judicial-district level with replacement, (ii) generating the bias measure within each bootstrapped sample, and (iii) re-estimating the regression specification described in equation (2) and our two-stage least-squares regressions within the sampled data. We extract the parameter values and generate a distribution of t-statistic values and calculate the standard errors.

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

TABLE A7: CASELOAD AND CASE
ASSIGNMENT

	(1)	(2)
Outcomes	1(Assigned)	
Cases Assigned from (-7,-1)	-0.001 (0.002)	
Cases Assigned from (-14,-1)		-0.000 (0.002)
R ²	0.147	0.147
Observations	17,365	17,365

Notes: The table examines the relationship between a court's caseload and the probability of a case being assigned to the specific court within a judicial district. The outcome variable is an indicator variable equal to 1 for the court that the case is assigned to, and 0 for any potential candidate court within the judicial district. The caseload is estimated as the number of bankruptcy cases assigned to a specific court within the previous week (column (1)) or within the previous two weeks (column (2)). Our sample includes bankruptcy cases from June 2005 to 2015. Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE A8: LIQUIDATION VS. REORGANIZATION SAMPLE

Outcomes	(1)	(2)
	Log Wage (t=5) - Log Wage (t=-1)	
	Liquidation	Reorganizations
Continuation Bias	-0.049*** (0.012)	0.047 (0.061)
R ²	0.248	0.230
Observation	386,889	39,757

Notes: The table reports the effects of pro-continuation bias on employees' wages by estimating the regression specification described in equation (2) separately for liquidation and reorganization cases. The outcome variable is the log of average employee wages five years after the bankruptcy filing ($T = 5$) minus the log of average employee wages observed in the year before bankruptcy filing ($T = -1$). Continuation bias is the leave-one-out measure of continuation bias at the court level described in Section IV.A. Our sample includes full-time employees present as of $T = -1$ in firms that file for bankruptcy at $T = 0$. Employees who exit the sample at each horizon are assigned the average wage observed in the informal labor market in their municipality and year as reported in the Brazilian National Household Sample Survey (PNAD). Employee controls include years of education, age, and gender observed as of $T = -1$. Standard errors are clustered at the judicial-district and bankruptcy-year-quarter level. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.