The Real Effects of Bankruptcy Reform

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Abstract

We construct the most comprehensive bankruptcy database of Chinese firms to date and document significant real effects arising from the establishment of specialized bankruptcy courts. Specifically, the recovery rate for unsecured creditors increases by 38.6 percentage points after the reform. This improvement is not driven by shorter case durations or lower direct bankruptcy costs, as intuition might suggest. Instead, it results primarily from greater efficiency in the discovery and disposal of assets during bankruptcy proceedings. The reform also increases the likelihood of reorganization and promotes capital infusion in such cases. Higher recovery rates generate broader spillovers: reductions in non-performing loans, expansion of unsecured lending by local banks, relaxation of firms' financial constraints, shifts in capital structure and investment, and greater public willingness to file for bankruptcy when distressed.

Keywords: Bankruptcy Reform; Asset Recovery Rate; Real Effects

JEL Codes: G33; P21; K22

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1 Introduction

Legal infrastructure plays a critical role in the development of economic and financial markets (La Porta et al., 1998; Ash et al., 2025). In theory, more effective judicial enforcement of bankruptcy should increase expected recovery rates after default, thereby influencing the cost of debt (La Porta et al., 1997, 1998; Djankov et al., 2008; Müller, 2022). However, there is limited causal evidence on how and to what extent judicial enforcement of bankruptcy affects *ex post* recovery rates, as cases with detailed recovery data and sufficient case-level information to uncover underlying mechanisms are relatively rare (Ponticelli and Alencar, 2016). Bankruptcy enforcement is also endogenous to prevailing economic and financial conditions, complicating causal inference.

We examine the causal impact of bankruptcy enforcement on recovery rates in China by exploiting the staggered introduction of specialized bankruptcy courts as a quasi-natural experiment. The reform aimed to improve bankruptcy enforcement and strengthen creditor protection by building a professional judicial team and establishing a more systematic bankruptcy resolution framework. Using a difference-in-differences (DID) design, we compare bankruptcy cases handled by specialized bankruptcy courts with those adjudicated by traditional civil courts within the same city, before and after the reform, to isolate causal effects.[1]

To conduct this analysis, we compile the most comprehensive bankruptcy database of Chinese firms to date, drawing from the National Corporate Bankruptcy Information Disclosure Platform (NCBIDP). This platform records basic details for nearly all corporate bankruptcy cases in China since 2016, including the case year, the name of the court handling the case, the firm name, and the applicant name. For a substantial subset of cases, the platform also provides judgment documents containing detailed bankruptcy outcomes and financial information, such as recovery rates, direct bankruptcy costs, creditor claims, bankruptcy estates, and case durations, as well as granular details on case processing. In total, there are approximately 270,000 judgment documents since 2016. We therefore employ modern large language models to process this extensive collection of textual and numerical data contained in the judgment documents.

We find that the establishment of specialized bankruptcy courts increases the recovery rate for unsecured creditors by 38.6 percentage points.[2] We further investigate the dynamic

[1] In this paper, "city" refers to all prefecture-level cities in China as well as the four municipalities directly under the central government (Beijing, Shanghai, Tianjin, and Chongqing).

[2] Unless otherwise noted, all references to the recovery rate in this paper pertain to unsecured creditors. For convenience, we sometimes use the shorthand "recovery rate," while at other times explicitly state "recovery rate for unsecured creditors." Section 4.1 discusses the rationale for focusing our analysis on this

effects and find that the results conform to the parallel trends assumption, with recovery rates exhibiting a sharp increase in the policy year and remaining steady thereafter. Potential interference from forum shopping, which may violate the Stable Unit Treatment Value Assumption, is mitigated, thereby reinforcing the validity of the DID design.[3] To address concerns about heterogeneous treatment effects, we adopt a stacked difference-in-differences approach, and the results remain consistent with those from the baseline dynamic analysis (Cengiz et al., 2019; Goodman-Bacon, 2021; Cunningham, 2021; Baker et al., 2022).

This increase in the recovery rate is not simply due to faster proceedings, as intuition may suggest. In fact, the reform did not significantly shorten overall case duration. The reform reduced the length of certain types of cases but extended others. There is also significant heterogeneity across firm size, ownership, and industry. If higher recovery rates are associated with shorter case durations, as intuition may suggest, then changes in recovery rates are unlikely to be consistent between cases experiencing shorter versus longer durations. However, despite these divergent patterns in case duration, we find that the improvement in recovery rates is remarkably consistent across cases.

We also show that the improvement in the recovery rate is not attributable to a reduction in direct bankruptcy costs. Theoretically, high deadweight bankruptcy costs are harmful to creditor recoveries. Our data show that direct bankruptcy costs in China are substantially higher than those estimated for the United States. However, we find that reformed Chinese bankruptcy courts do not significantly reduce direct bankruptcy costs, as measured by the ratio of direct bankruptcy costs to distributable bankruptcy assets. This is consistent with the fact that the reform did not explicitly aim to reduce direct bankruptcy costs. The bankruptcy reform lacks a formal policy document. Its stated aims are relatively vague, emphasizing broad themes such as improving the business environment, strengthening the rule of law, promoting orderly exit of enterprises, protecting creditors' rights, optimizing resource allocation, and mitigating financial risks.

Instead, we find that the primary driver is greater efficiency in the discovery and disposal of assets during bankruptcy proceedings, as well as increased capital infusion in reorganizations. In the case of firm liquidation, this includes deeper investigations to uncover hidden or undervalued assets and the adoption of more efficient methods of asset disposal to maximize recovery. In the case of firm reorganization, this involves both the improvement mechanisms

measure.

[3]Under Chinese bankruptcy law, firms are generally only allowed to file for bankruptcy in the city where they are registered. Cross-city filings are not permitted. However, our data show that filings across different counties within the same city are common. Counties and districts are at the same administrative level, both below the city. For simplicity, we refer to them collectively as counties. Therefore, in this paper, forum shopping refers specifically to within-city, across-county filings.

from liquidation and an additional channel for attracting reorganization investors to increase the pool of distributable assets. We collectively define these three channels as value creation. In other words, the reform primarily promotes higher recovery rates through enhanced value creation.

This finding is supported by several forms of evidence. According to our theoretical framework, depreciation from case duration and deadweight bankruptcy costs reduces only the initial asset value. Thus, when final distributable assets exceed the initial book value of assets at filing, this provides a sufficient condition for the existence of value creation. Our empirical results show that specialized bankruptcy courts significantly increase the likelihood that distributable assets surpass the book value at filing. Further analysis indicates that this effect is driven primarily by reorganization cases. Unlike liquidations, which can increase value only through the discovery and disposal of existing assets, reorganizations can attract substantial new capital, making them more likely to generate distributable assets above the initial book value. Accordingly, the contrast between reorganizations and liquidations highlights the distinct role of capital infusion in the former and asset realization in the latter.

Then, since mean case duration and direct bankruptcy costs do not exhibit substantial changes after the reform, we also use the ratio of distributable assets to book assets at filing as an indirect measure of value creation, focusing on cases where distributable assets do not exceed book assets at filing. We find that specialized bankruptcy courts significantly increase value creation for both reorganizations and liquidations. Consistent with previous findings, this effect is more pronounced in reorganization cases. We also provide suggestive evidence that changes in case duration and direct bankruptcy costs do not interfere with the observed increase in value creation. This further indicates that Chinese bankruptcy court reform primarily enhances recovery rates and creditor protection by improving value creation, rather than by reducing either direct or indirect bankruptcy costs.

The above analysis provides sufficient evidence of value creation after bankruptcy reform. Building on this, we leverage large language model–based analysis of Chinese bankruptcy cases to document how value creation operates in practice. First, asset discovery occurs in 12.3% of cases, primarily through the identification of unpaid capital contributions by shareholders (accounting for 70.7% of discoveries) and previously unreported assets (30.3%). Second, asset disposal is documented in 54.4% of cases, with auctions as the most common mechanism (91.4%), while non-auction methods, such as asset or debt transfers, are used in 19.7% of cases. Third, reorganization investors participate in 91.3% of reorganization cases, injecting on average about RMB 300 million. Finally, we show that bankruptcy courts are associated with greater efficiency in asset discovery and disposal during bankruptcy proceedings, as well as increased capital infusion in reorganizations.

We additionally find that specialized bankruptcy courts increase the likelihood of firms entering reorganization proceedings, which is associated with higher recovery rates. Moreover, the reform raises recovery rates in both reorganizations and liquidations. Therefore, our baseline results cannot be attributed solely to greater use of reorganizations. Notably, the bankruptcy reform exerts a more pronounced impact on enhancing recovery rates in reorganization cases, consistent with previous findings.

We also seek to understand the underlying mechanisms that affect our empirical results through the lens of a stylized theoretical model. Under this model, the optimal recovery rate reflects the trade-off between faster case processing and the time-consuming effort of value creation. Faster case processing can reduce asset value depreciation but may overlook valuable assets that could be recovered and sold. Empirically, we find that the recovery rate does not show a significant negative monotonic relationship with case duration. Instead, there is some evidence of a non-monotonic relationship between recovery rates and case duration. A specification including both a duration term and a squared duration term produces significant coefficients and suggests a trade-off relationship. Accordingly, bankruptcy courts may partially enhance recovery rates by optimizing the allocation of case duration.

The above explanation is based on the assumption that no other factors directly affect the ability to create value or reduce costs, so there exists a trade-off with respect to case duration that optimizes the recovery rate. However, we empirically find that even after controlling for case duration, bankruptcy courts still significantly improve recovery rates. This implies that, beyond optimizing case duration, bankruptcy courts primarily increase value creation, and this mechanism plays a more prominent role. This aligns with our finding of significantly enhanced value creation, while case duration and direct bankruptcy costs exert only a minor influence on its measurement.

A few additional tests support a causal interpretation of the improved recovery rate for unsecured creditors. First, we find that in cities with bankruptcy courts, the non-performing loan ratio of local commercial banks decreases, and local commercial banks also increase the ratio of unsecured lending. Second, by studying a newly constructed large-scale sample of Chinese firms, we show that firms in cities with bankruptcy courts are able to finance more debt without increasing total financial costs. This relaxation of financing constraints is more pronounced for small and micro-sized firms, which are typically more financially constrained, and subsequently results in increased investment by small and micro-sized firms. The above findings support the theoretical prediction that a higher expected recovery rate is priced into the financial cost and facilitates investment (Ponticelli and Alencar, 2016; Müller, 2022).

Our paper offers a contribution to a wide range of studies on law and finance. First, our work adds to research that focuses on the real effects of the enforcement of existing

law, especially bankruptcy law (Djankov et al., 2008; Ponticelli and Alencar, 2016; Gopalan et al., 2016; Iverson, 2018; Li and Ponticelli, 2022; Müller, 2022). Our contribution is to study whether and how improved bankruptcy enforcement affects one of the most important bankruptcy outcomes—the recovery rate (Djankov et al., 2008), for which the literature typically lacks comprehensive data from bankruptcy judgment documents that can be used for causal analysis (Ponticelli and Alencar, 2016). We first develop a theoretical framework to guide the design of the empirical specification and to identify the potential mechanisms affecting the recovery rate for unsecured creditors. We then exploit the staggered establishment of specialized bankruptcy courts in China as a quasi-natural experiment. By comparing reformed and unreformed civil courts within the same city, our design effectively mitigates concerns about time-varying confounders at the city level. In addition, we account for potential confounding factors such as pre-trends, forum shopping (which may violate the SUTVA for the DID design), and heterogeneous treatment effects, thereby providing a credible causal identification strategy.

Second, our findings contribute to the literature on the optimal design of and frictions within bankruptcy law and its enforcement (Aghion et al., 1992; Acharya and Subramanian, 2009; Acharya et al., 2011; Vig, 2013; Corbae and D'Erasmo, 2021; Li and Ponticelli, 2022; Antill, 2022, 2024). Contrary to the conventional view that more efficient bankruptcy enforcement is typically associated with shorter case durations, which in turn increase recovery rates (Dou et al., 2021; Müller, 2022), we find that the reform reduces durations for certain types of cases but lengthens them for others, with significant heterogeneity across firm size, ownership, and industry. Nevertheless, the improvement in recovery rates remains consistent across cases despite the divergent patterns in case durations. Based on our conceptual framework and empirical evidence, we offer two explanations for this seemingly counterintuitive result. First, there is a possible non-monotonic relationship between recovery rates and case duration, indicating that higher recovery rates do not necessarily require shorter proceedings. The optimal recovery rate reflects a balance between time-intensive value creation and faster case resolution, which limits asset value depreciation. Second, in the Chinese context, the effect of time costs on recovery rates is minimal compared with the gains from value creation channels. Thus, we contribute to the literature on bankruptcy design and frictions by emphasizing the relative importance of value creation versus cost-reduction strategies, and the inherent tension between them in terms of time allocation. Importantly, our findings suggest that in an imperfect legal and institutional environment, the influence of case duration is modest relative to the value losses stemming from factors such as information asymmetry, incomplete legal frameworks, and limited bankruptcy resolution capacity.

Third, this paper contributes to the construction of a micro-level bankruptcy database

in developing countries and to the understanding of the Chinese bankruptcy system. In developing countries such as China, India, and Brazil, bankruptcy enforcement is usually regarded as inefficient, even when they have introduced modern bankruptcy laws from developed countries. Extensive literature has focused on understanding the efficiency of the bankruptcy system in the U.S. by constructing detailed bankruptcy datasets, such as Warner (1977), Bris et al. (2006), Antill (2022), Antill (2024), and Antill and Bellon (2024). However, limited attention has been paid to the developing world because these countries usually lack comprehensive data on bankruptcy cases (Ponticelli and Alencar, 2016). We construct the most comprehensive bankruptcy database of Chinese firms to date and document stylized facts on key variables, such as the recovery rate and direct bankruptcy costs, as suggested by Bris et al. (2006) and Djankov et al. (2008), thereby providing a systematic statistical description of core bankruptcy variables for Chinese firms. We also leverage large language models to identify key frictions in China's bankruptcy resolution process from judgment documents, thus contributing to a deeper understanding of the efficiency of the bankruptcy system in China.

The remainder of the paper is organized as follows. Section 2 describes the institutional background and motivates the research design. Section 3 presents a simple conceptual framework to guide the empirical analysis. Section 4 introduces the data and sample construction and presents descriptive statistics. Section 5 presents the baseline findings and addresses potential issues that may affect our empirical analysis. Section 6 explores the mechanisms through which bankruptcy reform affects the recovery rate. Section 7 investigates the subsequent real impacts of the increased recovery rate on banks and firms, as well as the judicial and social implications following the reform. Section 8 concludes.

2 Institutional Background

2.1 The Establishment of Bankruptcy Courts

The modern bankruptcy system in China was formally established with the enactment of the 2007 Enterprise Bankruptcy Law, which replaced the 1986 trial law applicable only to state-owned enterprises (SOEs). The 2007 law extended coverage to virtually all corporate entities, unified the insolvency framework across ownership forms, and strengthened creditor protection by revising the absolute priority rule (APR) and introducing a reorganization procedure resembling Chapter 11 in the United States. Specifically, the new order of priority is: bankruptcy expenses, secured claims, employee claims, tax claims, and unsecured claims. For simplicity, we refer to all claims other than unsecured claims collectively as senior claims.

Within our sample of bankruptcy cases, unsecured claims constitute 81% of the total claims on average, and thus represent the primary component of the overall claims structure.

Despite this major legislative step, judicial enforcement of bankruptcy in traditional civil courts continued to be problematic. A lack of judicial specialization and systemic inefficiencies in the bankruptcy resolution process undermined effective implementation. In our sample, bankruptcy cases take on average over 19 months to resolve, with a standard deviation of 16 months. Some cases are resolved very quickly, while others take much longer.[4] By firm size, large firms take an average of 24 months to complete the process, whereas non-large firms take an average of 17 months. The ultimate recovery rate also exhibits considerable uncertainty. The average recovery rate for unsecured creditors is 13%, with an even larger standard deviation of 23%.

To improve judicial capacity in bankruptcy resolution and increase protection of creditors, starting in 2019, under the guidance of the Supreme People's Court, China gradually established specialized bankruptcy courts in 17 intermediate people's courts,[5] staffed by professional judges and equipped with more effective bankruptcy resolution system.

2.2 Unique Institutional Features and Research Design

There are several unique institutional features in China. First, Chinese bankruptcy law does not allow creditors or firms to choose the city in which to file for bankruptcy, meaning that forum shopping is generally prohibited except in exceptional cases. In our sample of 3,145 cases, only 32 were handled by courts located in cities different from those of the bankrupt firms, implying that cross-city case transfers—i.e., cross-city spillover effects—can be effectively ruled out. Second, while specialized bankruptcy courts were introduced in selected civil courts, other civil courts within the same city continued to adjudicate bankruptcy cases. Third, these selected civil courts are all intermediate people's courts. Since a city typically has only one intermediate people's court, the main sources of endogeneity should be addressed at the city-year level rather than the court-year level.

Leveraging these institutional features, we identify the causal effect of establishing specialized bankruptcy courts on recovery rates by comparing similar cases handled by treated civil courts and untreated civil courts within the same city, before and after the reform, using a difference-in-differences (DID) design that controls for all city-year level endogenous factors.

[4] In our sample, the 99th percentile of case duration is 97 months, whereas the 1st percentile is 1 month.

[5] Specialized bankruptcy courts were successively established in intermediate people's courts in the following cities: Shenzhen, Beijing, Shanghai, Tianjin, Guangzhou, Wenzhou, Chongqing, Hangzhou, Jinan, Qingdao, Nanjing, Xiamen, Suzhou, Chengdu, Haikou, Changchun, and Wuhan.

However, applicants may choose a court among multiple courts in the city where the bankrupt firm is located—for example, a court in a county different from the bankrupt firm—which we call within-city forum shopping.[6] For simplicity, forum shopping refers specifically to within-city forum shopping throughout the paper. In our sample, 27% of bankruptcy cases involve forum shopping. This suggests that although forum shopping is common in China, non-forum shopping cases still constitute the majority, consistent with the empirical results of Li and Ponticelli (2022), which show that geographical distance strongly predicts court choice.

The existence of forum shopping may violate the Stable Unit Treatment Value Assumption (SUTVA) of the DID framework. After the establishment of bankruptcy courts, some cases with potentially higher recovery rates may forum shop to these courts, leading to a significant reduction in recovery rates at other civil courts within the same city, thereby preventing these courts from serving as a valid counterfactual. We show in Section 5 that the existence of forum shopping does not affect the SUTVA in our DID design. Moreover, the effect of bankruptcy courts is virtually identical between forum shopping and non-forum shopping cases.

3 Conceptual Framework

In this section, we develop a simple model that integrates the key economic and legal factors shaping the recovery rate for unsecured creditors and provides the foundation for our empirical analysis.

Under the absolute priority rule (APR), unsecured creditors occupy the lowest position in the repayment hierarchy and therefore receive only the residual value of the bankruptcy estate. Their recovery depends critically on the size of the distributable pool of assets net of senior claims. Conceptually, given the initial book value of assets at filing, two forces can increase the distributable pool of assets. On the one hand, distributable assets expand when the costs of the bankruptcy process are reduced (*cost reduction*). These costs include both direct expenses, such as legal fees and trustee fees, and indirect losses, most notably the depreciation of asset value during lengthy proceedings. On the other hand, distributable assets increase when new value is "created" (*value creation*). Value creation may occur through the discovery of previously hidden or unidentified assets, the efficient disposal of assets in well-functioning markets rather than at fire-sale discounts, or, in reorganizations, the injection of new capital by outside investors. The first two channels apply to both

[6]China has a five-tier administrative hierarchy. Cities govern districts and counties. For simplicity, we refer to them collectively as counties.

liquidation and reorganization, while the third is unique to the latter.

To formalize these ideas, we adopt a relatively parsimonious framework. Let A^0 denote the book value of the debtor's assets at the onset of bankruptcy. The final distributable assets for creditors is given by,

$$A^R = [A^0\,\theta\,\varphi\,(1-\delta) + \mathbf{1}_{\{\text{Reorganization}\}} I](1-c), \tag{1}$$

where θ with $\theta \geq 1$ measures the extent of additional asset discovery, φ with $\varphi > 0$ reflects the efficiency of asset disposal, δ with $\delta \leq 1$ captures the depreciation of asset value over time, I with $I \geq 0$ represents new capital injected in the event of reorganization, and c with $c > 0$ denotes the ratio of direct bankruptcy costs. The indicator $\mathbf{1}_{\{\text{Reorganization}\}}$ equals one if the case is resolved through reorganization. It is worth highlighting that $[A^0\,\theta\,\varphi\,(1-\delta) + \mathbf{1}_{\{\text{Reorganization}\}} I]$ represents the total distributable bankruptcy estate as documented in bankruptcy judgment documents, which is used to cover bankruptcy expenses and to satisfy the claims of creditors.

For simplicity, it is equivalent to assume that $I = \eta A^0$, where $\eta \geq 0$ and η reflects the intensity of capital infusion compared to the initial asset value A^0. Then the expressions can be combined to become,

$$A^R = A^0[\,\theta\,\varphi\,(1-\delta) + \mathbf{1}_{\{\text{Reorganization}\}}\eta](1-c). \tag{2}$$

Then, the recovery rate for unsecured creditors is straightforward under APR:

$$RR^U = \max\left\{\frac{A^R - D^S}{D^U},\, 0\right\}, \tag{3}$$

where D^S denotes senior claims except bankruptcy expenses as mentioned in Section 2 and D^U denotes unsecured claims. This expression underscores a central insight: the recovery rate for unsecured creditors hinge not only on the determinants of A^R but also on the liability structure, specifically the level and share of unsecured claims.

This framework generates several theoretical and empirical implications. First, it informs the design of our baseline specifications. Equation 3 makes clear that accurate estimation of the effect of bankruptcy courts on the recovery rate for unsecured creditors requires not only controls for basic firm characteristics such as industry, size, capital, and age, but also controls for the firm's debt structure, namely the level of unsecured claims and their share in total claims. Without these, differences in recovery rates could simply reflect differences in creditor composition rather than the institutional treatment under study.

Second, the framework provides clear guidance for investigating the mechanisms. The

establishment of specialized bankruptcy courts may influence unsecured recoveries through any of the channels embedded in A^R: enhanced asset discovery, more efficient asset disposal, facilitated external capital injections in reorganization proceedings, reduced depreciation through faster resolution, or lower direct bankruptcy costs.

Third, the framework predicts heterogeneity across case types. Because only reorganization can attract new capital, it may generate more value than liquidation. This asymmetry suggests that bankruptcy court reform may enhance value creation to a greater extent and eventually raise recoveries more in reorganization cases, and that overall improvements may partly operate through an extensive margin: by increasing the likelihood that cases are resolved through reorganization rather than liquidation.

Fourth, the framework further motivates a novel theoretical insight: shorter bankruptcy duration is not necessarily associated with a higher recovery rate, contrary to standard intuition. Equation 2 suggests that the determinants of the final distributable assets for creditors may respond differently to the duration of the bankruptcy process. For simplicity, we denote case duration by T. Specifically, asset discovery, θ, and asset disposal efficiency, φ, are likely increasing functions of T, as longer case duration allows more time for courts and administrators to uncover hidden or unidentified assets and conduct more efficient asset disposal. Likewise, in reorganization cases, the capital injection I may also rise with T since investors require time for due diligence and negotiation. We provide some suggestive evidence on this increasing relationship in Section 6.3. At the same time, depreciation ratio δ and direct bankruptcy cost ratio c are also typically increasing in T, making $(1-\delta)$ and $(1-c)$ decreasing functions of T. Consequently, the optimal recovery rate for unsecured creditors need not vary monotonically with case duration. There exists a trade-off between time-consuming value creation and cost reduction achieved through shorter case duration. This implies that bankruptcy reform affecting the speed of proceedings does not necessarily change the average duration in a predictable way. Although this implication may seem counterintuitive, it is economically and legally reasonable, and we also provide empirical evidence to test the prediction in Section 6.1.

Notably, although case duration affects cost reduction and value creation in opposite directions, it is not the sole determinant of either channel. As a result, the trade-off described above is derived under the simplifying assumption that case duration is the only factor shaping both cost reduction and value creation. When bankruptcy reforms simultaneously enhance the capacity for value creation, the role of case duration in governing this trade-off becomes substantially less important. Nonetheless, the non-monotonic relationship between recovery rates and case duration that we propose has been largely overlooked in the literature.

Although stylized, the framework captures the essential economic and legal determinants

of unsecured creditor recoveries, informs the design of empirical specifications, and clarifies the channels through which bankruptcy reform may operate.

4 Data

4.1 Data

We combine several datasets for our empirical analysis which are described in detail below.

National Corporate Bankruptcy Information Disclosure Platform. We construct a comprehensive bankruptcy database of Chinese firms from the National Corporate Bankruptcy Information Disclosure Platform (NCBIDP), an official website established by the Supreme People's Court (SPC) to disclose basic case information and judgment documents starting in August 2016. We processed all basic case information (around 190,000 bankruptcy application cases and 150,000 bankruptcy cases) and judgment documents (around 80,000 documents in bankruptcy application cases and 190,000 documents in bankruptcy cases) related to corporate bankruptcy posted up to June 30, 2025, from this platform and employed both traditional textual analysis methods and large language model-based textual analysis methods to extract key information. Before the wide availability of large language models, the manual processing of such a large quantity of data was infeasible.

The NCBIDP displays the basic information of nearly all bankruptcy cases in China since 2016, such as the unique case number (which includes the case year), the name of the applicant, the name of the bankrupt firm, and the court that handles the case. To verify the representativeness of the total bankruptcy case number in the NCBIDP, we also collect the total number of bankruptcy cases each year in China reported on the official website of the Supreme People's Court (SPC) and then compare them with the aggregated data of bankruptcy cases from the NCBIDP. Appendix Figure A1 shows that the two official sources produce nearly the same numbers between 2017 and 2024, implying that data from the NCBIDP is highly representative.[7]

For about 45% of the bankruptcy cases, the NCBIDP also publicly posts some bankruptcy judgment documents, which provide more information, such as the bankrupt firm's total liabilities, total assets, distributable bankruptcy estate, total direct bankruptcy costs including the trustee fee, the amount of total claims, the amount of unsecured claims, the number of unsecured creditors, and whether it is a liquidation or reorganization case. We retain only reorganization and liquidation cases in our sample, following Bris et al. (2006). Some of these judgment documents also contain the following information about the bankruptcy

[7]The SPC does not disclose the total number of bankruptcy cases each year in China before 2017.

outcomes: (i) the recovery rate for unsecured creditors and (ii) the bankruptcy filing date and closing date, which we use to calculate the duration of the bankruptcy proceedings.

We focus primarily on the recovery rate for unsecured creditors for several reasons. First, unsecured claims constitute the vast majority of claims in our sample, accounting for approximately 81% of total claims (also see Table 1), and thus represent the interests of the majority of creditors. Second, according to the absolute priority rule (APR), unsecured claims have the lowest priority and typically receive only a small fraction of repayment. In our sample, the average recovery rate for unsecured claims is merely 13%, with a standard deviation of 23%, indicating relatively weak creditor protection in China overall. Importantly, improvements in unsecured creditor recovery rates serve as a sufficient condition for increases in overall recovery rates, allowing us to draw stronger conclusions. Third, although the dataset contains some information on employee claims and tax claims, the extent of missing data is substantial. In cases where assets are available for distribution, secured claims are always repaid first. Among the 1,643 cases with available employee claim recovery information, the average recovery rate is 82%, while in the 1,476 cases with tax claim recovery data, the average recovery rate is 72%. The gradually decreasing recovery rates across employee, tax, and unsecured claims reflect the spirit of the APR, but evidently unsecured claims are considerably lower, justifying our focus on their recovery rates.

The aforementioned bankruptcy cases refer to those that have been formally accepted by the court and have officially entered the process of handling corporate bankruptcy. The website also displays bankruptcy applications. Similarly, the NCBIDP displays the same basic information for nearly all bankruptcy applications in China since 2016. Appendix Figure A2 shows that the two sources produce almost the same numbers from 2017 to 2024, again, implying that data from the NCBIDP is highly representative.[8] Similarly, for about 33% of the bankruptcy applications, it also publicly posts some bankruptcy judgment documents, which potentially provide more information, such as whether the firm plans to liquidate or reorganize, whether the case is accepted or rejected, and the exact date when the case is accepted or rejected.

Chinese Firm Registration Database. We identify basic information on firms that have undergone the bankruptcy process using the Chinese Firm Registration Database (CFRD), a comprehensive administrative firm-level dataset. The CFRD provides registration details for virtually all firms in China, including precise location, industry, scale,[9] year of establishment, and registered capital. We obtain these data from *Tianyancha*, the official platform for

[8]The SPC also does not disclose the total number of bankruptcy applications each year in China before 2017.

[9]Firm scale categories include large, medium, small, and micro-sized firms.

accessing this information.

Bankruptcy Court. We manually collect data on all bankruptcy courts in China, including their founding date, location, and the intermediate people's courts to which they belong. Sources of information include the official websites of local courts, the encyclopedic site *Baidu Baike*, and news articles reporting the establishment of bankruptcy courts. If a bankruptcy court was introduced between January and June of a given year, the corresponding intermediate people's court is considered treated in that year. If a bankruptcy court was introduced between July and December, the intermediate people's court is counted as treated in the following year. In total, our sample includes 17 such reform policy shocks.

Chinese Commercial Bank Database. Bank loans are the primary source of financing for Chinese firms, but detailed data on interest rates for bank lending are scarce. The financial information of local commercial banks serves as a useful supplement, as these banks primarily serve local firms. We collect data from local commercial banks to examine the real impacts of bankruptcy reform on bank lending, such as whether the reform reduces the proportion of non-performing loans or increases the issuance of unsecured loans. The data come from CSMAR and CNDeepData (CNDD).

National Tax Survey Database. We use the National Tax Survey Database (NTSD) of the Chinese State Administration of Tax for the period 2016–2020 to analyze the impact of bankruptcy reform on firms' financing constraints, capital structure, and investment. Unlike the commonly used databases of listed firms, the NTSD includes a substantial number of non-public firms (around 450,000 each year). It also covers large, medium, small, and micro-sized firms.

4.2 Sample Construction and Summary Statistics

We now describe our sample construction and basic summary statistics in this section.

Full sample of closed bankruptcy cases: We collect data on closed bankruptcy cases from the NCBIDP to characterize the procedural features of the Chinese bankruptcy system. The dataset includes 31,420 cases with detailed information on the case year, the applicant's name, the bankrupt firm's name, the court handling the case, whether it is a reorganization or liquidation, and whether the bankruptcy was filed by a creditor or a debtor. For this full sample, we can identify case durations.[10] We then match the bankrupt firms with their

[10]For reorganization cases, we define the duration as the period from case acceptance to the approval of the reorganization plan, at which point the court typically issues a ruling to close the case. For liquidation cases, the duration is defined as the period from case acceptance to the court's ruling that the case is closed. For a small number of cases where the court's closing ruling cannot be identified, we use the date of the ruling on the property distribution plan as the case closing date. In general, once the property distribution plan is approved, the court issues the closing ruling shortly thereafter.

financial information using the Chinese Firm Registration Database (CFRD). Finally, we construct a comprehensive sample of closed bankruptcy cases with detailed firm-level and procedural information. This sample allows us to analyze the effect of bankruptcy courts on case duration across a large number of cases.

* *Closed bankruptcy cases with recovery rate information*: For the main part of our paper, we focus on a subsample of 3,145 closed bankruptcy cases with identifiable recovery rates, which are considered among the most important pieces of information in bankruptcy research (Djankov et al., 2008). In these cases, we also seek to identify additional financial information beyond that available in the full sample, such as the bankrupt firm's total liabilities, total assets, distributable assets, total direct bankruptcy costs (including trustee fees), the total amount of claims, the amount of unsecured claims, and the number of unsecured creditors. We then construct a comprehensive sample of closed bankruptcy cases with recovery rates. This sample enables us to examine whether and how the establishment of bankruptcy courts affects recovery rates. To the best of our knowledge, this sample of 3,145 cases represents the largest dataset of bankruptcy cases with recovery rates in the existing literature and the first dataset used to estimate direct bankruptcy costs in China. For the remainder of the paper, we refer to this subsample as the recovery rate sample.

4.3 Stylized Facts about Corporate Bankruptcy in China

We conclude this section by providing a comprehensive description of corporate bankruptcy. We particularly focus on the recovery rate in China based on the recovery rate sample. In addition, we present some description on bankruptcy costs.

Recovery Rate. We start by describing the characteristics of recovery rate for unsecured creditors. Table 2 shows that the average recovery rate across 3,145 bankruptcy cases is 13.1%. Reorganization cases have significantly higher recovery rates (23.2%) compared with liquidation cases (10.2%). This marked difference is consistent with the statistics reported by Bris et al. (2006) for 300 U.S. Chapter 11 and Chapter 7 bankruptcy cases, although the gap is even more pronounced in their sample. State-owned enterprises (SOEs) exhibit slightly lower recovery rates than privately-owned enterprises (POEs). Recovery rates also vary modestly by firm size, with medium-sized firms slightly outperforming smaller and larger firms. At the industry level, health and social work, resident services, and mining exhibit the highest recovery rates, followed by construction and real estate, whereas finance has by far the lowest. These patterns indicate pronounced heterogeneity in recovery outcomes across case type, ownership, firm size, and industry in China's bankruptcy system.

Bankruptcy Costs. Table 1 reports descriptive statistics on direct bankruptcy costs in

China. Direct bankruptcy costs average 4.7 million CNY, and trustee fees average 0.98 million CNY, yielding an average direct cost-to-distributable bankruptcy assets ratio of 34.8%, which is significantly higher than that in the US, implying high direct bankruptcy costs in China. To the best of our knowledge, we are the first to compile direct bankruptcy costs for Chinese firms. However, there is a large literature discussing direct bankruptcy costs in the United States.

Warner (1977) is the first paper to estimate direct costs, using a sample of 11 railroad bankruptcy cases. Limited by its small sample size and the unique industry, it is difficult to generalize the findings. Since then, many papers have extended the work by using more data (Weiss, 1990; Ferris et al., 1997; LoPucki and Doherty, 2004; Bris et al., 2006; LoPucki and Doherty, 2011; Lubben, 2012). The main conclusion derived from data on U.S. firms is that direct costs are small in the U.S. and account for only about 1% to 5% of pre-bankruptcy assets. As Weiss (1990) concludes, direct costs are unlikely to have a substantial impact on *ex ante* debt pricing. However, the ratio is significantly higher in China. Second, there exists a scale effect: the larger the firm, the lower the proportion of direct costs, which is consistent with our findings. In our sample, large firms have an average direct cost of approximately 30%, medium firms 34%, small firms 35%, and micro firms 37%. Therefore, the direct bankruptcy costs in China also exhibit a scale effect. Beyond direct bankruptcy costs, corporate bankruptcy typically generates indirect costs (Altman, 1984; Antill and Hunter, 2023) and even spillover effects (Lang and Stulz, 1992; Ferris et al., 1997; Bernstein et al., 2019), which have been scarcely studied in the context of China.

Additional Description of the Recovery Rate Sample. Table 1 reports more detailed summary statistics for 3,145 bankruptcy cases in the recovery rate sample. The average case duration is 557 days. About 22.5% of cases are reorganizations, and only 2.4% involve SOEs. Firms display wide heterogeneity in size and financial characteristics: the mean registered capital is 64.5 million CNY, total book assets average 170 million CNY, and total book liabilities average 424 million CNY. Distributable bankruptcy assets average 62.7 million CNY, total debt 415 million CNY, and unsecured debt 264 million CNY, with an average unsecured debt ratio of 80.5%, indicating that unsecured debt dominates total debt.

5 Main Results

5.1 Empirical Specification

To estimate the causal effect of specialized bankruptcy courts, we exploit a difference-in-differences design as outlined in Section 2. The specialized bankruptcy courts are established

in a staggered fashion by updating and reforming existing Chinese civil courts. We compare bankruptcy cases handled by bankruptcy courts with those handled by other untreated civil courts within the same city before and after the bankruptcy reform, controlling for city $\times$ year of acceptance fixed effects. The specification is as follows:

$$\text{Recovery Rate}_{ijcdt} = \beta \text{Bankruptcy Court}_{ct} + \gamma X_{ijcdt} + \delta_{dt} + \lambda_{jt} + \eta_c + \epsilon_{ijcdt}, \tag{4}$$

where i, j, c, d, and t denote case (or the bankrupt firm), industry, court, city, and year of acceptance, respectively. Recovery Rate$_{ijcdt}$ denotes recovery rate for unsecured creditors. Bankruptcy Court$_{ct}$ denotes whether the civil court c has established a bankruptcy court in year t. β captures the effect of the bankruptcy court on the recovery rate.

To ensure that cases handled by untreated civil courts can serve as valid counterfactuals for cases handled by bankruptcy courts, we introduce a comprehensive set of fixed effects and control variables. First, we include city $\times$ year of acceptance fixed effects (δ_{dt}) to account for all city-level time-varying shocks, particularly those that may simultaneously influence the endogenous introduction of bankruptcy courts and the recovery rate, such as the city-year credit cycle. Second, given that the recovery rate for unsecured creditors varies significantly across industries, as shown in Table 2, we include industry $\times$ year of acceptance fixed effects (λ_{jt}), which further control for all industry-level time-varying factors, such as industry cycles. Third, we include court fixed effects (η_c) to account for time-invariant characteristics across courts, including court culture and administrative capacity.

We control for firm size by including firm size fixed effects and the logarithm of registered capital. We also control for the logarithm of firm age. Finally, as suggested by our conceptual framework in Section 3, the level of unsecured claims and their share in total claims must be controlled for. Without these, differences in recovery rates could simply reflect differences in creditor composition rather than the institutional treatment under study. Hence, we also include these two variables as additional controls to achieve a fair comparison. The error term, ϵ_{icjt}, is clustered at the city-year acceptance level. We also report the results where ϵ_{icjt} is clustered at the city level in Section 5.5.

In our baseline estimation, we primarily focus on cases that for which the case year is from 2016 to 2022 inclusive and are in the recovery rate sample. There are two main considerations behind this choice. First, the NCBIDP only started uploading case information in the second half of 2016, and the coverage is largely concentrated on cases filed from 2016 onwards, while cases prior to 2016 suffer from severe missing data. Second, since our data collection ended in June 2025, cases filed in 2023 and 2024 that have already been concluded are likely those that could be processed relatively quickly, which would introduce a nontrivial sample selection

bias. In our sample, the 75th percentile of case duration is 741 days, implying that at least a two-year gap between filing and data collection is necessary to ensure representativeness. For robustness, we also exclude the 2016 cases and, alternatively, include the 2023 cases to verify the stability of our results in Section 5.5, although the latter should be interpreted with caution.

5.2 Baseline Results

Table 3 reports the empirical estimates of the impact of bankruptcy court reform on the recovery rate using several progressively richer model specifications. Across all specifications, the establishment of specialized bankruptcy courts is associated with a statistically significant and economically meaningful increase in the recovery rate. In the most parsimonious specification (Column (1)), which controls for court and city-year of case acceptance fixed effects, the establishment of bankruptcy courts corresponds to an average increase of approximately 24.8% in the recovery rate for unsecured creditors.

As additional controls are introduced, including industry-year and firm size fixed effects in Column (2), the positive effect of bankruptcy courts remains robust and even slightly increases in magnitude to about 30.6%. Further controlling for firm characteristics such as firm age and its squared term, as well as the logarithm of registered capital (Column (3)), does not materially alter the estimated effect. Finally, in Column (4), where we additionally control for the unsecured debt ratio and the amount of unsecured debt, factors that may influence the recovery rate for unsecured creditors, the effect remains strongly significant and stable at around 38.6%. Our estimate of 38.6% may appear quite large given that the sample mean of the recovery rate is 13.1% for unsecured creditors. However, this result is reasonable. Our subsequent mechanism analysis in Section 6 shows that the reform significantly increased value creation, which substantially improved recovery rates. Such substantial increases in recovery rates are also sometimes observed in the literature. Antill (2022) exploit the within-district random assignment of bankruptcy judges to estimate the effect of reorganization relative to liquidation on recovery rates, and also find similarly large coefficients above the sample mean. Overall, these results suggest that bankruptcy reform significantly improves the recovery rate for unsecured creditors.

5.3 The Dynamic Effects

We next examine the dynamic effects of the introduction of bankruptcy courts on the recovery rate using the following specification:

$$\text{Recovery Rate}_{ijcdt} = \beta_0 + \sum_{k=-4, k\neq -1}^{k=2} \tau_k \text{Bankruptcy Court}_{ct}^{k} + \gamma X_{ijcdt} + \delta_{dt} + \lambda_{jt} + \eta_c + \epsilon_{ijcdt}, \quad (5)$$

where $\text{Bankruptcy Court}_{ct}^{k}$ denotes a set of event-time dummies indicating that civil court c in year t is k years relative to the establishment of a specialized bankruptcy court. We collapse the event-time dummies beyond the window $[-4, 2]$ into the endpoints. Specifically, $\text{Bankruptcy Court}_{ct}^{2}$ includes all years that are two or more years after the establishment, while $\text{Bankruptcy Court}_{ct}^{-4}$ includes all years that are four or more years prior to the establishment. To avoid multicollinearity, we drop the year just before the civil court starts the reform (i.e., $k = -1$), and hence, all coefficients should be interpreted relative to this reference group.

The result of this exercise is illustrated in Figure 1. Specifically, the estimated coefficients on the leading periods are all statistically indistinguishable from zero, providing strong evidence in support of the parallel trends assumption. This indicates that, within the same city, there were no differential pre-existing trends in recovery rates between bankruptcy courts and other untreated civil courts before the reform. Such evidence supports the identifying assumption that, absent the reform, recovery rates in treated and untreated courts would have followed parallel paths over time.

Starting from the reform implementation period (period zero/current) and continuing through the first and second post-reform periods, the coefficients become positive and statistically significant, indicating an immediate and sustained improvement in the recovery rate following the introduction of bankruptcy courts. The persistence of these significant positive effects in the post-reform periods demonstrates that the reform not only has an instantaneous impact but also delivers lasting benefits for creditor recovery outcomes.

Overall, these dynamic results reinforce the causal interpretation of our main findings and highlight the timing and persistence of the reform's effect on the recovery rate.

5.4 Stable Unit Treatment Value Assumption (Discussion on Forum Shopping)

The Stable Unit Treatment Value Assumption (SUTVA) is another key assumption in DID design. It ensures that the treatment assigned to one unit does not affect the outcomes of

other units. In our context, it requires that other civil courts besides bankruptcy courts should not be affected by the reform. Chinese law prohibits cross-city forum shopping in bankruptcy filings. However, there may exist some forum shopping within cities, which refers to a situation where an applicant (the debtor or the creditor), deliberately selects the specialized bankruptcy court to file for bankruptcy, in order to obtain a more advantageous result, as mentioned in Section 2.

Hence, one major challenge is that some creditors may strategically file for bankruptcy in a more distant but more specialized bankruptcy court within the city, rather than in the nearest civil court, seeking to maximize debt recovery. As a result, after the reform, the overall recovery rate in civil courts in cities with a bankruptcy court may decline. This implies that, within cities where specialized bankruptcy courts are established, the trend in recovery rates for civil courts without a bankruptcy court cannot serve as a valid counterfactual for the trend in recovery rates for civil courts with a bankruptcy court.

In fact, our baseline specification already includes a rich set of controls and fixed effects to compare highly similar cases. Forum shopping driven by factors already captured by our controls or fixed effects is unlikely to violate the SUTVA. For example, suppose firms in certain industries are more likely to engage in forum shopping, and these firms also have higher potential recovery rates; since we control for numerous industry characteristics, this channel should theoretically have little impact on the causal estimates. However, there may be unobserved factors that cannot be accounted for by controls or fixed effects, which could endogenously drive forum shopping and ultimately challenge the validity of the SUTVA.

To examine this potential violation of the SUTVA, we study other civil courts located in the same city as the bankruptcy court, focusing on changes in unsecured recovery rates before and after the introduction of bankruptcy courts. Specifically, using our baseline regression sample, we first exclude courts that underwent the reform. We then treat all remaining civil courts in these cities as a pseudo-treatment group and use other civil courts in the same province as the control group. We then construct the following specification:

$$\text{Recovery Rate}_{ijcdt} = \beta \text{Pseudo Court}_{dt} + \gamma X_{ijcdt} + \delta_{pt} + \lambda_{jt} + \eta_c + \epsilon_{ijcdt}, \tag{6}$$

where i, j, c, d, p, and t denote case (or the bankrupt firm), industry, court, city, province, and year of acceptance, respectively. Recovery Rate_{ijcdt} denotes the recovery rate for unsecured creditors, Pseudo Court_{dt} denotes whether the city d has established a bankruptcy court in year t, δ_{pt} denotes province $\times$ year of acceptance fixed effects, λ_{jt} denotes industry $\times$ year of acceptance fixed effects, η_c denotes court fixed effects, and X_{ijcdt} denotes other firm/case level control variables: firm size fixed effects, firm age, log registered capital, the proportion

of unsecured claims to total claims, and log unsecured claims. Again, ϵ_{icjt} is clustered at the city-year of acceptance level.

The results are shown in Table 4. We find that the establishment of a bankruptcy court has no effect on other civil courts. We further estimate the dynamic effects (see Figure 2) and find that all the coefficients are close to zero, before or after the reform. Overall, these results reject the violation of the SUTVA and reinforce the causal interpretation of our baseline findings.

Although the inevitable existence of forum shopping does not affect the basic conditions of DID design, we also further investigate whether the baseline results exhibit obvious heterogeneity between cases involving forum shopping and cases without forum shopping. First, we control for whether the case belongs to forum shopping in the baseline specification. Second, we decompose the effect of the bankruptcy court into two parts: the effect on cases that involve forum shopping and the effect on cases that do not involve forum shopping.

The results are shown in Table 5. Following Column 1, we find that forum shopping has no effect on the recovery rate and the coefficient of the bankruptcy court is similar to the baseline results. Column 2 shows that the effect of the bankruptcy court on forum shopping cases and non-forum shopping cases is also similar to the baseline results.

The above results indicate that the trend in other civil courts located in the same city as the bankruptcy court can serve as a credible counterfactual for the bankruptcy court, suggesting that our baseline estimates are reliable. Moreover, despite the presence of forum shopping, the effect of the bankruptcy court on forum shopping and non-forum shopping cases is nearly identical. This indicates that the bankruptcy court increased the overall recovery rate, regardless of case origin.

5.5 Robust Checks

In this section, we provide several robustness checks to further strengthen the credibility of the baseline results.

5.5.1 Alternative Clustering of Standard Errors

In the baseline regressions, standard errors are clustered at the city $\times$ year of acceptance level, allowing for correlation across bankruptcy cases within the same city in a given year. For robustness, we also cluster standard errors at the city level, which allows for correlation across all bankruptcy cases within the same city, regardless of the year of acceptance. The results are shown in Table 6, and they remain quite robust. This check accounts for potential correlations across cases within the same city and ensures that our results are not too sensitive

to the choice of clustering.

5.5.2 Selection of Sample Intervals

Our baseline regression relies on cases from 2016 to 2022 based on the case year, mainly because cases before 2016 and after 2022 are less representative. Considering that most cases in 2016 were only uploaded in the second half of the year, we first exclude the 2016 observations and re-estimate the model using the 2017–2022 sample. In addition, we extend the sample by including cases from 2023, and separately analyze the 2016–2023 and 2017–2023 periods. Appendix Figure A3 plots the dynamic effects from the baseline specification together with those based on the three alternative samples. We find that altering the sample window does not materially affect the baseline results. However, the inclusion of the 2023 sample should be interpreted with caution.

5.5.3 The Conflict of Creditors

As suggested by the theoretical paper of Diamond (2004) and the subsequent empirical examination of Gopalan et al. (2016), an increase in bankruptcy enforcement costs is associated with an increase in the number of creditors from which the firm borrows. This is typically because a larger number of creditors leads to more conflicts of interest and coordination failures, thereby increasing additional costs and ultimately reducing recovery rates. Building on our baseline regression, we control for the number of unsecured creditors and find that the coefficient on the Bankruptcy Court in Table 7 remains significantly positive, although the economic magnitude becomes slightly smaller. The dynamic effects in Appendix Figure A4 also remain similar to the baseline dynamic effects. Due to data limitations, controlling for the number of unsecured creditors substantially reduces the effective sample size, and thus this exercise serves only as a robustness check.

5.5.4 Stacked Difference-in-Differences

Our baseline difference-in-differences (DID) specification estimates the effect of the introduction of bankruptcy courts on the recovery rate at the court–year level, with observations at the individual case level. Given the staggered implementation of the reform across courts, the conventional two-way fixed effects (TWFE) estimator may suffer from bias arising from heterogeneous treatment effects and the use of already-treated courts as controls for later-treated courts, a problem documented by Goodman-Bacon (2021) as "forbidden comparisons."

To address this issue, we employ the stacked difference-in-differences approach, discussed by Cunningham (2021) and Baker et al. (2022) and implemented in Cengiz et al. (2019).

This method constructs separate "stacks" for each cohort of courts initiating reform in the same year, combined with never-treated courts serving as clean controls. By restricting comparisons within each stack, the approach avoids contamination from treated units serving as controls and properly accounts for treatment effect heterogeneity across cohorts.

We plot the event-study estimates from the stacked DID approach in Figure 3. The resulting dynamic trend graph closely aligns with that from the baseline TWFE specification (see Figure 1). The close similarity in pre-treatment trends suggests that biases commonly associated with TWFE estimators under staggered adoption are unlikely to materially affect our conclusions. Moreover, in this robust approach, after the establishment of bankruptcy courts, the improvement in recovery rates becomes more pronounced, both economically and statistically significant. This graphical evidence reinforces confidence in the validity of our identifying assumptions and supports the robustness of our main findings.

6 Mechanisms: Cost Reduction or Value Creation?

We have identified a significant positive effect of the establishment of bankruptcy courts on the recovery rate. A natural question then arises: how do bankruptcy courts increase recovery rates?

Building on our conceptual framework, we categorize the potential channels through which bankruptcy courts may enhance the recovery rate for unsecured creditors into two broad types. The first channel is *cost reduction*, which aims to preserve existing asset value by lowering various costs, including indirect bankruptcy costs (such as asset deterioration from prolonged case duration) and direct bankruptcy costs (such as administrative expenses and trustee fees incurred during proceedings). The second channel is *value creation*, which expands the distributable estate by enhancing asset discovery, improving asset disposal, and attracting additional reorganization investment (available only under reorganization). Since reorganization generally yields higher recovery rates than liquidation, facilitating its use may also enhance recovery rates.

Guided by this framework, we next examine these potential mechanisms in turn to better understand how China's bankruptcy court reform improved recoveries for unsecured creditors, who represent the majority of claimants. In the mechanism analysis, we also test several theoretical predictions outlined in our conceptual framework to further demonstrate its explanatory power. For instance, the potential non-monotonic relationship between recovery rate and case duration, as well as the heterogeneity between reorganization and liquidation cases.

6.1 Case Duration

We start by exploring the effect of bankruptcy courts on case duration using the same recovery rate sample as our baseline regression (described in Section 4). Then, given the limitations of sample size, we further explore the effect of bankruptcy courts on case duration in the full sample with duration information (31,420 cases) collected from the NCBIDP (described in Section 4). We also demonstrate that the same pattern holds in both datasets, which ensures the representativeness of the recovery rate sample.

First, we replace the dependent variable in Equation 4 with case duration and run the same regression as in columns (1) through (4) of Table 3. The results are shown in Table 8. The coefficient of the core independent variable is negative across all columns, suggesting that the bankruptcy reform may reduce the duration of bankruptcy cases on average. However, the effect is not statistically significant in any specification, as indicated by the large standard errors and the absence of statistical significance. Registered capital and unsecured debt levels show statistically significant effects (positive at the 1% level), which makes sense since larger firms and firms with more debt typically take more time in bankruptcy.

We also plot dynamic trends in Figure 4 and find that, prior to the reform, the trends in case duration are parallel between the treatment and control groups, satisfying the parallel trends assumption. After the establishment of specialized bankruptcy courts, although there is a downward trend in case duration, the large standard errors prevent the effect from reaching statistical significance.

These results suggest that the bankruptcy reform did not have a statistically detectable effect on case duration on average, at least within the observed sample. This aggregate insignificance, however, masks substantial heterogeneity across firm sizes. As shown in Table 9, when we partition the sample into large firms and non-large firms, the bankruptcy reform is associated with a statistically significant reduction in case duration for large firms, but a statistically significant increase for non-large firms. The opposite signs and comparable magnitudes of these effects suggest that the aggregate non-significant estimate is likely the result of offsetting impacts between different groups. Moreover, it appears that for a larger share of firms, case duration increased, as suggested by the sample sizes of large and non-large firms.

Since the two types of firms display opposite patterns in case duration, a natural question is whether the associated improvements in recovery rates also differ systematically. In particular, consistent with conventional intuition, shorter case duration for larger firms may translate into significantly higher recoveries, whereas for smaller firms, longer duration may instead reflect procedural inefficiencies that ultimately depress recoveries.

To answer this question, we compare the differential impact of the bankruptcy reform on the recovery rate for large versus non-large firms. Specifically, we introduce the interaction term between Bankruptcy Court and a Large Firm dummy and construct a saturated model based on our baseline specification. The results are shown in column (1) of Table 10. We find that there is no significant effect on Bankruptcy Court $\times$ Large Firm, which implies that although the reform decreases case duration for large firms and increases case duration for non-large firms, the increase in recovery rate for them is similar.

Before turning to the interpretation of this counterintuitive finding, we first examine whether the observed pattern—some cases exhibiting longer durations while others becoming shorter—arises from sample selection or instead reflects a more general effect of the reform. To address these concerns and to test the robustness of our findings based on the recovery rate subsample, we re-estimate the impact of the bankruptcy reform on case duration by using the full set of cases for which case duration can be identified, thereby leveraging a much larger and more representative dataset. We also restrict the case year from 2016 to 2022.

Appendix Table A1 reports the results of the analysis on the full sample. Consistent with our preceding analysis using the recovery rate subsample, we find no statistically significant average effect of bankruptcy courts on case duration. Importantly, when splitting the full sample by firm size, as shown in Appendix Table A2, we continue to observe the same heterogeneous pattern as before: the reform significantly shortens case duration for large firms, but significantly lengthens it for non-large firms. The persistence of this pattern in a much larger dataset provides supportive evidence that our baseline sample is broadly representative in terms of case-duration-related outcomes.

We further explore additional heterogeneity in the full sample, including ownership heterogeneity (see Appendix Table A3) and industry heterogeneity (see Appendix Table A4). The results indicate that following the bankruptcy court reform, case duration increased in some cases while decreasing in others, depending on specific case characteristics. For ease of interpretation, we summarize all heterogeneity analyses of case duration for the full sample in Figure 5.

Interpretation of the Counterintuitive Changes in Case Duration

We now turn to the interpretation of this seemingly counterintuitive finding: why improvements in bankruptcy resolution efficiency do not lead to a reduction in average case duration. Moreover, despite these divergent patterns in case duration, the improvement in recovery rates is ultimately consistent across cases. We propose two interpretations: first, higher recovery rates are not monotonically linked to faster proceedings as intuition may suggest;

and second, in our sample, changes in recovery rates may only be weakly explained by case duration, such that even large variations in case length do not significantly affect recoveries.

We now empirically test these two interpretations. Specifically, we regress the recovery rate on the logarithm of case duration and its square, while controlling for the same control variables and fixed effects as the baseline regression: the logarithm of firm age, firm size fixed effects, the logarithm of registered capital, the proportion of unsecured claims, the amount of unsecured claims, as well as court, city-year, and industry-year fixed effects. In some specifications, we also control for whether the case is handled by bankruptcy courts. This enables us to estimate, to the greatest extent possible, the relationship between different case durations and the ultimate recovery rate by comparing cases with similar characteristics handled by the same court. The specification is as follows:

$$\text{Recovery Rate}_{ijcdt} = \beta_0 + \beta_1 \ln T_{ijcdt} + \beta_2 \big(\ln T_{ijcdt}\big)^2 + \gamma X_{ijcdt} + \delta_{dt} + \lambda_{jt} + \eta_c + \epsilon_{ijcdt}, \quad (7)$$

where $\ln T_{ijcdt}$ denotes the logarithm of case duration (days). The meaning of the other variables is consistent with Equation 4.

Before we examine the specification, we first include only the term of $\ln T_{ijcdt}$, with the regression results reported in column (1) of Table 11. We find that the relationship between the recovery rate and case duration is not monotonic. When we further control for the Bankruptcy Court, as shown in column (2), the conclusion remains unchanged.

The regression results in column (3) suggest a non-monotonic relationship between the recovery rate and case duration. After controlling for the Bankruptcy Court, the results in column (4) indicate that the coefficient on $\ln T$ is positive and significant ($\hat{\beta}_1 = 0.212$), while the coefficient on $(\ln T)^2$ is negative and significant ($\hat{\beta}_2 = -0.018$). This suggests an inverted U-shaped relationship between the recovery rate for unsecured creditors and case duration, consistent with our model's prediction. The turning point can be calculated by solving

$$\frac{\partial \,\text{Recovery Rate}}{\partial \ln T} = \hat{\beta}_1 + 2\hat{\beta}_2 \ln T = 0,$$

which gives

$$\ln T^* = -\frac{\hat{\beta}_1}{2\hat{\beta}_2} \approx -\frac{0.212}{2 \times (-0.018)} \approx 5.889, \qquad T^* \approx e^{5.889} \approx 361 \text{ days}.$$

Thus, the recovery rate tends to increase with duration up to around 361 days, after which it starts to decline.[11] This empirical evidence mirrors the theoretical framework: faster

[11] We also present a diagram to illustrate this inverted U-shaped relationship, see Appendix Figure A10. However, this result ($T^* \approx 361$ days) should be interpreted with caution. It represents an average effect

procedures are not always better, as excessively short durations fail to uncover sufficient assets or to realize their full value, while overly protracted processes erode asset value due to depreciation. For cases historically resolved too quickly, creating asset value could improve recoveries; for cases with excessive delays, streamlining procedures would be more effective.

However, the results in Table 11 confirm that the overall increase in the recovery rate can weakly be explained by changes in case duration, even though we previously observed a substantially large—but statistically insignificant—downward trend in case duration. In fact, as shown in columns (2) and (4) of Table 11, when controlling for case duration or its quadratic term, our baseline results remain significant and the coefficients do not change substantially. This implies that, even holding case duration constant, bankruptcy reform continues to significantly improve the recovery rate overall. Consequently, even large variations in case duration exert a negligible impact on the recovery rate in our sample. Hence, while the first interpretation is both logically and empirically reasonable and plays some role, the second interpretation provides a more compelling explanation of our findings. These findings suggest that bankruptcy reform may improve recovery rates through alternative channels that are more significant.

6.2 Direct Bankruptcy Costs

In the preceding analysis, our analysis shows that shorter case duration, which serves as a measure of decreased indirect bankruptcy costs, does not account for the observed increase in the recovery rate for unsecured creditors. A natural follow-up question is whether direct bankruptcy costs may explain this effect, as suggested by our conceptual framework.

To investigate this channel, we construct a measure of direct bankruptcy costs consistent with the framework. Specifically, we define the direct bankruptcy cost ratio as the share of bankruptcy expenses relative to the total distributable estate, that is, the parameter c in the framework. We then re-estimate the baseline specification by replacing the recovery rate with the direct bankruptcy cost ratio as the dependent variable.

Table 12 presents the results. Column (1), which uses the recovery rate sample, shows a negative coefficient of -0.301, although it is not statistically significant. Figure 6 further illustrates the dynamics by plotting the dynamic effects. The parallel trend is well aligned, and no significant divergence is observed post-reform. These findings indicate that, at the aggregate level, direct bankruptcy costs do not account for the observed improvements in

after controlling for a wide range of factors, rather than pinpointing the precise optimal duration for any given case. Due to data limitations, we are unable to identify the exact recovery-maximizing time at the case level. Nevertheless, the findings provide evidence of an inverted U-shaped relationship, thereby lending support to our theoretical argument.

the recovery rate.

One potential concern is that in a portion of cases (approximately 5% of the recovery rate sample), the direct bankruptcy cost ratio exceeds one. Descriptive statistics in Table 1 further confirm that the 99th percentile of the ratio is 5.626, suggesting that in these cases the distributable estate is insufficient even to cover bankruptcy expenses. Such extreme values may inflate variance and bias the estimates. To address this, we restrict the sample to cases with the bankruptcy cost ratio less than or equal to one. Re-estimating the specification under this restriction yields a positive, albeit still insignificant, coefficient on the Bankruptcy Court.

Taken together, these results provide consistent evidence that the reduction in direct bankruptcy costs can not explain the observed increase in the recovery rate for unsecured creditors.

6.3 Value Creation

The results from the preceding two subsections indicate that *cost reduction* is not the mechanism through which China's bankruptcy reform has improved the recovery rate of unsecured creditors. Hence, it is highly likely that the reform has enhanced *value creation*. In this section, we establish the existence of value creation; in Section 6.4, we provide more detailed evidence. The available financial disclosures in judgment documents allow us to present supportive evidence of value creation. Specifically, we can indirectly infer value creation by comparing the book value of assets prior to bankruptcy with the value of distributable bankruptcy estates reported in the judgment documents, as outlined in our theoretical framework. Our analysis proceeds in two steps.

First, we define a binary variable, $More$, which equals one if the final total distributable asset value (A^R) exceeds the book value of total assets at the time of filing (A^0). Following Equation 2, $(1-\delta)$ and $(1-c)$ are always less than 1. However, when θ, φ, or η increase sufficiently, the total distributable assets may exceed the book value. Hence, $More = 1$ is a sufficient condition for the existence of value creation. In addition, since introducing reorganization investors is unique to reorganization cases and always significantly increases distributable bankruptcy assets, the effect of bankruptcy reform on value creation should be more pronounced for reorganization cases.

Before presenting the empirical results, we illustrate the practical significance of the total distributable assets exceeding the book value through several examples. (i) Asset discovery. In a liquidation case, the court initially determined that the firm had only CNY 260,000 in book assets (see Appendix Figure A5). However, through the collection of receivables

amounting to CNY 60,000, the total value of assets available for distribution eventually reached CNY 320,000 (see Appendix Figure A6). This is a typical case of identifying previously unrecognized but valuable assets. (ii) Asset disposal. In another liquidation case (see Appendix Figure A8), the firm was found to have approximately CNY 370,000 in book asset value at the beginning. By conducting an online judicial auction through the *Taobao* platform (see Appendix Figure A7), the assets were sold at a higher value, increasing the total asset value available for distribution to CNY 430,000. (iii) Attracting new investors. This is a common approach in reorganization cases. In one such case (see Appendix Figure A9), the firm itself possessed only about CNY 1 million in assets, but by introducing a reorganization investor, an additional CNY 140 million in assets was directly injected for recovery.

Moreover, it is common for multiple mechanisms to appear within the same case. For instance, in the reorganization case mentioned above (see Appendix Figure A9), the trustee indicated that further recovery of the firm's other assets through asset discovery would continue. Therefore, these examples also reinforce the practical relevance of our model.

The results are presented in Table 13. Column (1) shows that the establishment of bankruptcy courts raises the probability of $More = 1$ by about 30.2%, and this effect is statistically significant at the 5% level. This result provides a strong sufficient condition for the existence of value creation. We also plot the dynamic effects in Figure 7, and find that the pre-reform trends satisfy the parallel trends assumption, while post-reform, a clear upward trend emerges. In column (2), we replace the Bankruptcy Court indicator with its interaction terms with case type dummies—Bankruptcy Court $\times$ Reorganization and Bankruptcy Court $\times$ Liquidation—to examine potential heterogeneity across different types of bankruptcy proceedings. The positive effect is driven almost entirely by reorganization cases: the probability increases by roughly 30.7% in reorganizations, which is both statistically and economically significant. In contrast, the effect for liquidation cases is smaller in magnitude and fails to reach statistical significance. The heterogeneous performance is consistent with our theoretical prediction.

In Column (3), we extend the specification in column (1) by additionally controlling for the logarithm of case duration. The results show a significantly positive relationship between case duration and $More = 1$, significant at the 5% level. This finding suggests that longer case duration is positively associated with the likelihood that distributable assets exceed the initially recorded book value through various forms of value creation. Overall, this evidence lends empirical support to the argument that creating value in bankruptcy may require additional time from Section 3.

Second, we restrict the sample to cases with $More \leq 1$, i.e., cases in which the distributable asset value does not exceed asset the book value at bankruptcy filing and directly

estimate the extent of increased value creation. We do not use the full sample because, in some cases where $More = 1$, the amount of restructuring investment introduced far exceeds the book value of total assets, which would lead to substantial bias.

We construct an Asset Value Creation Ratio variable, defined as

$$\text{Asset Value Creation Ratio} = \frac{\text{Distributable Asset Value}}{\text{Book Value of Total Assets}}$$

where a higher value indicates greater value creation and the variable ranges from 0 to 1, which corresponds to

$$\frac{A^R}{A^0} = \frac{A^0[\,\theta\,\varphi\,(1-\delta) + \mathbf{1}_{\{\text{Reorganization}\}} \cdot \eta](1-c)}{A^0} = [\theta\,\varphi\,(1-\delta) + \mathbf{1}_{\{\text{Reorganization}\}} \cdot \eta](1-c)$$

in our conceptual framework.

Since we have already established that case duration and direct bankruptcy costs do not serve as the mechanisms through which bankruptcy courts affect recovery, it is reasonable to believe that our measure of the Asset Value Creation Ratio is largely influenced only by θ, φ, and $\mathbf{1}_{\{\text{Reorganization}\}} \cdot \eta$. In other words, it allows us to identify the net effect of asset value creation to the greatest extent possible. Moreover, it is evident that the effect on reorganizations should be stronger than on liquidations since η is unique to reorganizations.

The results are presented in Table 14. Column (1) shows that the establishment of bankruptcy courts increases the asset value creation ratio by 112%, and this effect is statistically significant at the 1% level. We also plot the dynamic effects in Figure 8 and find that pre-reform trends are parallel, whereas post-reform, there is a significant upward trend, providing strong support for the value creation mechanism. In column (2), we further explore heterogeneity by interacting the Bankruptcy Court indicator with case type dummies. The positive effect is also more pronounced for reorganization cases. By contrast, the effect for liquidation cases is slightly smaller in magnitude. This heterogeneity finding further supports our theoretical prediction.

Taking into account other factors such as case duration and direct bankruptcy costs, which could still potentially affect the measurement of Asset Value Creation Ratio, we sequentially control for them to examine the extent to which they confound the coefficient on the Bankruptcy Court indicator. However, we must also acknowledge that, due to sample limitations, we are unable to estimate the Bankruptcy Court coefficient once direct bankruptcy costs are controlled, primarily because the inclusion of city-year fixed effects is too restrictive. To maintain comparability, we provide suggestive evidence by ignoring the city-year fixed effects and estimating a parsimonious specification.

In this parsimonious specification, we first replicate the results reported in Table 14 to show that, although the specification is relaxed, the basic patterns remain consistent. The results are shown in Appendix Table A5. Column (1) shows that the Bankruptcy Court coefficient remains positive and statistically significant. In column (2), we further explore heterogeneity by interacting the Bankruptcy Court indicator with case type dummies, finding that the positive effect is again more pronounced for reorganization cases. These findings suggest that the basic patterns are robust in the parsimonious specification. In columns (3) and (4), we sequentially control for the logarithm of case duration and the direct bankruptcy cost ratio, and observe that the Bankruptcy Court coefficient changes little. Taken together, these results imply that, even conditional on the same case duration and direct bankruptcy cost ratio, the establishment of bankruptcy courts continues to promote asset value creation, providing strong support for the value creation mechanism.

6.4 Granular Evidence on Value Creation: LLM-Based Case Analysis

We have established strong sufficient conditions for the existence of value creation. We next leverage large language model-based text analysis of Chinese bankruptcy cases to shed light on how value creation manifests in practice. Specifically, we examine three key channels—asset discovery, asset disposal, and the attraction of reorganization investors—and provide suggestive evidence on how the establishment of specialized bankruptcy courts enhances value creation along these more granular dimensions.

6.4.1 Asset Discovery

In our recovery rate sample, 12.3% of cases exhibit asset discovery. Two mechanisms dominate. First, approximately 70.7% of these cases involve the identification of shareholders who either failed to contribute their registered capital or only partially fulfilled their capital commitments. Administrators subsequently initiated litigation to recover the unpaid contributions for creditor repayment. This pattern suggests that many shareholders in China strategically under-contribute capital and omit these obligations from the balance sheet to evade repayment responsibility. Second, about 30.3% of cases involve the discovery of previously unreported but valuable assets. A very small number of cases involve both types of discoveries, so the shares do not sum to 100%.

We then analyze the association between bankruptcy courts and the likelihood of asset discovery. It is important to note that, unlike our baseline regressions, we cannot credibly claim strict causal identification here. Asset discovery requires the presence of hidden

assets—an inherently unobservable condition that differs across firms. Comparing "treated" versus "untreated" cases using the baseline empirical design would therefore produce biased comparisons. For this reason, we restrict our analysis to simple correlations. To mitigate concerns that cases with hidden assets are disproportionately filed in jurisdictions equipped with bankruptcy courts, we include court fixed effects and compare cases before versus after the establishment of bankruptcy courts within the same court.

As reported in Column (1) and Column (2) of Table 15, the establishment of bankruptcy courts is strongly associated with greater asset discovery. The probability of identifying and recovering unpaid capital contributions increases significantly, as does the likelihood of detecting previously unreported valuable assets. These patterns suggest that bankruptcy courts substantially enhance the ability to uncover hidden assets.

6.4.2 Asset Disposal

Turning to asset disposal, 54.4% of cases mention at least one disposal channel. Among these, auctions dominate: 91.4% of cases with asset disposal involve auctioning trademarks, equity stakes, real estate, vehicles, accounts receivable, machinery, intellectual property, and other assets. Meanwhile, 19.7% of cases involve alternative disposal mechanisms, such as asset transfers, debt transfers, equity liquidations, or other non-auction methods explicitly or implicitly identified. Again, a small number of cases use both channels, explaining why the shares do not sum to 100%.

In China, asset disposal in corporate bankruptcy proceedings predominantly relies on auctions as the default mechanism. This institutional regularity is supported by both the legal framework governing bankruptcy procedures[12] and the empirical patterns observed in our data. The underlying rationale is that auctions are the most direct and standardized method of liquidation, characterized by procedural simplicity and relatively low transaction and enforcement costs. Consequently, the presence of alternative asset disposal methods should not be interpreted as routine substitutes for auctions. Rather, their use indicates circumstances in which these alternatives are expected to generate higher liquidation values, offering a more efficient conversion of assets than auction-based sales.

Column (3) and Column (5) of Table 15 show that after the establishment of bankruptcy courts, the likelihood of asset auctions decreases, while the use of non-auction channels

[12]For example, see "Measures of the Higher People's Court of Beijing Municipality on the Implementation of Online Auction of Property in Bankruptcy Proceedings (Trial)," which explicitly provides that "the disposal of the debtor's property shall follow the principle of prioritizing online auction" (Beijing Municipal Government, available at https://www.beijing.gov.cn/zhengce/zhengcefagui/201905/t20190522_61920.html). This reflects the court's institutional preference for online auctions as the default method of asset disposition in bankruptcy.

increases. This pattern suggests that bankruptcy courts promote more diversified asset-disposal strategies aimed at maximizing value rather than relying mechanically on auctions. We further incorporate an indicator for liquidation and its interaction with the establishment of bankruptcy courts. As expected—Column (4) of Table 15—liquidation cases are substantially more likely to involve auctions, consistent with the need to convert all assets into cash. However, bankruptcy courts significantly reduce the reliance on auctions even within liquidation cases. Moreover—Column (6) of Table 15—liquidation cases are less likely to use alternative disposal methods than reorganization cases, but bankruptcy courts increase the use of such methods in liquidation as well. Taken together, these patterns indicate that bankruptcy courts expand the menu of disposal tools available to administrators, improving value realization beyond traditional auctions.

6.4.3 Attracting Reorganization Investors

Finally, we examine the introduction of reorganization investors. Among reorganization cases, 91.3% involve external investors. Column (7) of Table 15 shows that the establishment of bankruptcy courts increases the probability of introducing a reorganization investor by roughly 13.6 percentage points. The average amount of capital injected by reorganization investors is approximately RMB 300 million. Moreover, Column (8) of Table 15 shows that the establishment of bankruptcy courts increases the amount of reorganization capital by about RMB 220 million, indicating that bankruptcy courts strengthen capital infusion in reorganization cases.

Our analysis offers a coherent and empirically grounded view of how frictions in creditor protection and bankruptcy resolution manifest in China and how the establishment of bankruptcy courts alleviates these frictions across multiple dimensions of value creation. Although these patterns constitute suggestive rather than causal evidence, these findings provide supportive evidence for the mechanisms underlying our main results. To the best of our knowledge, this study is among the first to use large language models to analyze bankruptcy case documents and to organize the frictions in China's bankruptcy resolution process.

6.5 Reorganization

Our previous mechanism analysis indicates that value creation is the primary channel through which China's bankruptcy reform has enhanced creditor recovery rates, with this effect largely realized through reorganization cases. This naturally raises two related questions. First, has the reform increased the likelihood that more firms enter reorganization proceed-

ings; that is, while enhancing the intensive margin of bankruptcy resolution, has it also expanded the extensive margin? Second, given that reorganization plays a dominant role in the mechanism, does the improvement in recovery rates occur mainly in reorganization cases, with relatively limited effects on liquidation cases? If so, the rise in recovery rates could simply result from a greater number of cases entering reorganization.

We first examine whether the bankruptcy reform makes comparable cases more likely to enter reorganization rather than liquidation. We then investigate the differential impact of the bankruptcy reform on the recovery rate between reorganization and liquidation cases to address this concern.

Column (1) in Table 16 shows that, *ceteris paribus*, cases in bankruptcy courts are more likely to enter reorganization. We also plot the parallel trends in Figure 9, and find that the pre-reform trends satisfy the parallel trends assumption, while post-reform, a clear upward trend emerges. To provide a clearer comparison of the differential impact of the bankruptcy reform on the recovery rate between reorganization and liquidation cases, we present the baseline result again in Column (2).

The results in Column (3) indicate that the bankruptcy reform has increased the recovery rate for unsecured creditors not only in reorganization cases but also in liquidation cases. Although the coefficient for reorganization cases is somewhat larger, which is consistent with our earlier mechanism analysis and the theoretical prediction, the difference in their effects is minimal. The evidence thus suggests that the introduction of bankruptcy courts facilitates more asset recovery across different bankruptcy procedures, rather than simply shifting cases toward reorganization.

Summary of Mechanism Analysis

Overall, the mechanism analysis in this section indicates that China's bankruptcy reform has primarily enhanced the recovery rates of unsecured creditors through value creation, including improvements in asset discovery, asset disposal, and the introduction of reorganization investors in reorganization cases. In addition, the reform has significantly increased the likelihood that bankruptcy cases enter into reorganization proceedings.

Moreover, we provide empirical evidence supporting two theoretical predictions outlined in the conceptual framework. First, the relationship between recovery rates and case duration is not monotonic, as might be intuitively expected. This helps explain why case duration does not show a consistent decrease in statistical terms. Second, our empirical findings consistently indicate that the effect is generally larger for reorganization cases than for liquidation cases, primarily because reorganization cases offer greater potential for value

creation.

In addition, we emphasize that the impact of case duration on recovery rates is quite limited, at least within our sample. One potential explanation is that case duration may exert some influence, but its effect is relatively small compared with the much larger impact of value creation. This also helps explain why observed changes in case duration, whether increases or decreases, can be substantial without materially affecting recovery outcomes. Our findings highlight that inefficiencies in asset discovery, asset disposal, and attracting reorganization investors are often overlooked but represent important frictions in bankruptcy resolution. Losses from these frictions could be significantly larger than those from prolonged case duration.

7 Real Impacts

In this section, we explore the real impacts of the increased recovery rate for unsecured creditors on local banks and firms, thereby further supporting a causal interpretation of our baseline findings. Since Chinese law prohibits forum shopping across cities, evaluating the effects of bankruptcy courts at the city level is unlikely to be affected by violations of the Stable Unit Treatment Value Assumption (SUTVA) caused by forum shopping. Therefore, for identification, the main task is to control for city-level endogenous variables that may affect the establishment of bankruptcy courts and to verify that the parallel trends assumption holds.

Theoretically, a higher recovery rate for unsecured creditors can, on the one hand, reduce banks' non-performing loans and, on the other hand, encourage more unsecured lending. This, in turn, lowers firms' financing costs, improves their capital structure, and boosts investment (Ponticelli and Alencar, 2016; Müller, 2022). We collect data from local commercial banks and utilize a large-scale firm database to investigate these issues.

Moreover, we conclude this section by examining the impact of bankruptcy reform on the judicial capacity of bankruptcy courts. Bankruptcy law is an important component of a developed market economy. However, bankruptcy filings remain relatively uncommon in China. We also examine whether the reform enhanced public willingness to file for bankruptcy, thereby reflecting the social implications of the reform.

7.1 Real Impacts on Banks

We start by investigating the real impacts on local commercial banks, which mainly serve local firms, by focusing on the non-performing loan (NPL) ratio and the unsecured lending

ratio. We use the following specification:

$$y_{it} = \beta \text{Bankruptcy Court}_{ct} + \gamma X_{ict} + \eta_i + \lambda_t + \epsilon_{it}, \tag{8}$$

where i, c, and t denote bank, city, and year respectively. y_{it} denotes the non-performing loan (NPL) ratio or unsecured lending ratio of local commercial banks. η_i denotes bank fixed effects. λ_t denotes year fixed effects. X_{it} denotes city-level and bank-level control variables. Specifically, at the city level, we control for GDP per capita, the loan-to-GDP ratio, government fiscal deficit, and industrial structure, all measured with a one-year lag. At the bank level, we include bank size, leverage, capital adequacy ratio, deposit ratio, and income. Specifically, bank size is measured as the logarithm of total assets; leverage is measured as the ratio of total liabilities to total assets; the deposit ratio is measured as the ratio of total loans to total deposits; and income is measured as the logarithm of operating revenue. The aforementioned city-level control variables may simultaneously affect both the establishment of bankruptcy courts and bank performance. Meanwhile, the bank-level controls are likely to influence non-performing loans and the lending of unsecured debt. The error term, ϵ_{it}, is clustered at the bank level.

The results are shown in Table 17. They indicate a lower non-performing loan (NPL) ratio and a higher unsecured lending ratio for local commercial banks after the bankruptcy reform. The dynamic effects are shown in Appendix Figure A11 and Appendix Figure A12, which support the parallel trends assumption.

7.2 Real Impacts on Firms' Financing Constraints, Capital Structure, and Investment

We next explore the real impacts on local firms. From a creditor–debtor contracting perspective, an increase in unsecured creditors' expected recovery rates enhances creditors' expected returns in the event of default. This improvement reduces the risk premium required for lending, thereby lowering firms' borrowing costs. Lower borrowing costs can relax financing constraints, enabling firms to take on more debt at a lower price and potentially to increase leverage. Finally, easier access to credit may also facilitate new investment, as firms finance expansion and readily form capital. The effect should be particularly pronounced for financially constrained firms and for firms facing higher default risk.

Guided by this theoretical prediction, we use the *National Tax Survey Database*, which contains detailed firm-level financial statements, to examine whether the staggered introduction of specialized bankruptcy courts leads to measurable changes in firms' financing conditions, capital structure, and investment behavior.

Our identification strategy is based on a triple-differences (DDD) design, exploiting variation across cities, time, and firm size. The third dimension distinguishes micro-sized and small enterprises (MSEs) from medium-sized and large firms. This distinction is important for three reasons. First, MSEs in China are widely recognized as facing tighter financing constraints. Second, they dominate bankruptcy cases in the Chinese bankruptcy system; nearly 100,000 out of approximately 140,000 cases involve MSEs, implying that these firms have higher default risk and are more sensitive to creditor protection. We expect the effect of the reform on firms to be more pronounced among MSEs. The empirical specification is:

$$y_{ijct} = \beta \text{Bankruptcy Court}_{ct} \times \text{MSE}_i + \lambda X_{ijct} + \gamma_{ct} + \eta_{jt} + \delta_i + \varepsilon_{ijct}, \tag{9}$$

where y_{ijct} denotes the outcome variable for firm i in industry j, city c, and year t, including short-term debt-to-total assets ratio, long-term debt-to-total assets ratio, interest payment-to-total liability ratio, total leverage, and fixed capital investment-to-operating revenue ratio. $\text{Bankruptcy Court}_{ct}$ is an indicator for whether a specialized bankruptcy court has been established in city c and in year t; MSE_i indicates whether the firm is a micro-sized or small enterprise. X_{ijct} includes firm-level controls such as firm size and firm age. γ_{ct} are city-by-year fixed effects capturing local macroeconomic conditions, especially those unobserved factors that simultaneously affect the introduction of bankruptcy courts and the outcomes we care about, η_{jt} are industry-by-year fixed effects controlling for industry-year level heterogeneity, and δ_i are firm fixed effects controlling for firm-level time-invariant heterogeneity. Standard errors are clustered at the city level.

We first show some parsimonious estimates by replacing $\text{Bankruptcy Court}_{ct} \times \text{MSE}_i$ with $\text{Bankruptcy Court}_{ct}$, which faces potential endogeneity caused by the non-random introduction of bankruptcy courts across cities. The results are shown in Appendix Table A6. The results indicate that the establishment of bankruptcy courts is associated with higher short-term debt, greater leverage, and unchanged total financial costs among firms, providing preliminary support for our theoretical prediction.

Table 18 reports the DDD estimates. Column (1) shows that for MSEs, the short-term debt-to-total assets ratio increases by 4.1% following the reform, significant at the 1% level. Column (2) indicates that long-term debt-to-total assets ratio does not change following the reform, which makes sense since non-current liabilities are typically secured debt. Column (3) shows that there is no economically or statistically significant increase in interest payment with increased debt, implying a decreasing financial cost. Column (4) documents a significant increase in total leverage, reflecting expanded debt. Finally, Column (5) shows that MSEs' fixed capital investment-to-operating revenue increases by 1.1%, indicating that better credit access translates into higher investment.

Taken together, these results align with the proposed prediction and support a causal interpretation of the observed improved recovery rate for unsecured creditors. By enhancing creditor confidence and expanding the supply of credit, the reform effectively channels financial resources to the segment of the economy most constrained in credit markets, thereby amplifying its real economic impact.

7.3 Judicial Capacity and Public Willingness towards Bankruptcy

In this section, we explore the judicial and social implications following the bankruptcy reform. Specifically, we find that the reform significantly increased the number of bankruptcy cases. However, this was not due to a relaxation of case acceptance standards; in fact, there is evidence of a stricter trend. We also find that the reform significantly raised the likelihood of debtors voluntarily filing for bankruptcy, thereby promoting the development of the corporate bankruptcy system in China.

7.3.1 Judicial Capacity

First, we investigate whether the introduction of specialized bankruptcy courts has increased the number of bankruptcy cases by examining the dynamics of the number of bankruptcy cases accepted by courts. Specifically, we identify 143,657 bankruptcy cases with basic information on the case year (2016 or later) and the court handling the case. From these data, we calculate the number of bankruptcy cases at the court–case-year level.[13] We then construct a sample based on the number of bankruptcy cases at the court–case-year level. As discussed in Section 4, this sample can accurately represent the distribution of bankruptcy cases at the macro level in China since 2016.[14] This sample allows us to quantify the effect of bankruptcy courts on the number of bankruptcy cases. To the best of our knowledge, due to previous data limitations, this is also the first attempt in the literature to compile bankruptcy statistics at the macro level in China.

Appendix Figure A13 shows the trends in the average number of bankruptcy cases for (potential) bankruptcy courts and other civil courts. It can be seen that the number of cases

[13]Since the NCBIDP began operating in August 2016, it has primarily posted cases from that year onward. Hence, there is substantial missing data before 2016. Accordingly, the 143,657 bankruptcy cases in our dataset are those with case year information since 2016. We also calculate the total number of cases listed on the website, which is 148,586, implying that only about 5,000 cases are recorded before 2016. This figure is inconsistent with the statistics on the number of bankruptcy cases before 2016 in China reported by Lin (2018), which show that there were approximately 2,000–3,000 bankruptcy cases per year between 2007 and 2015 in China.

[14]In 2016, only a portion of cases from the second half of the year were recorded. If we assume that the distribution of these cases is representative of the entire year nationwide, then this distribution can be considered reasonable. More precisely, however, our data are fully representative starting from 2017.

for (potential) bankruptcy courts grew significantly after 2018, while the number of cases for other civil courts increased at a stable but small rate. In Panel A, other civil courts include all other civil courts in the sample, except for those civil courts that are potential candidates for establishing bankruptcy courts. In Panel B, we restrict the sample to cities that introduced bankruptcy courts. We find that the trends displayed in both panels are consistent.

To establish the direction of causality, we next examine the change in the number of bankruptcy cases by using the following specification:

$$\text{Case Number}_{ct} = \beta \text{Bankruptcy Court}_{ct} + \delta_{dt} + \eta_c + \epsilon_{ct}, \tag{10}$$

where c, d, and t denote court, city, and year of acceptance respectively. Case Number_{ct} denotes the total number of bankruptcy cases at the court-case year level. δ_{dt} denotes city $\times$ year of acceptance fixed effects, which capture all city-year of acceptance level shocks that simultaneously affect the endogenous introduction of bankruptcy courts and the outcomes we care about. η_c denotes court fixed effects, which control for all court level time-invariant characteristics. ϵ_{ct} is clustered at the city-year of acceptance level.

The regression result is shown in Table 19, which indicates that the bankruptcy reform results in about 130 more bankruptcy cases accepted by bankruptcy courts each year. We further examine the dynamic effects. As shown in Appendix Figure A14, the pre-treatment trends are parallel across (potential) bankruptcy courts and other untreated civil courts, supporting the validity of the parallel trends assumption. The post-treatment divergence further indicates an increasing treatment effect over time, which reflects the potential gradual enhancement of judicial capacity for bankruptcy courts.

Next, we examine whether this increase is driven by a relaxation of case acceptance standards. To do so, we construct a sample of bankruptcy applications with final decisions from the NCBIDP. Specifically, we identify 45,833 bankruptcy applications with detailed information on the case year, the name of the applicant, the name of the bankrupt firm, the court handling the case, whether it is a reorganization or liquidation, whether the bankruptcy was filed by a creditor or a debtor, and whether the application was accepted or rejected.[15]

[15]We clarify the distinction between the sample used here (denoted as sample 2) and the full sample of closed bankruptcy cases constructed in Section 4.2 (denoted as sample 1). Sample 2 records the initial filing of a bankruptcy petition. Sample 1 records information after cases are formally accepted by the court and the bankrupt firms have entered the official bankruptcy procedure. While these two stages can be considered sequential for cases that are formally accepted by the court, they are recorded as separate case types (bankruptcy application cases and bankruptcy cases), and the information for each stage is disclosed independently in the NCBIDP. In fact, the two samples only partially overlap for those cases that are formally accepted by the court: for some bankruptcy applications in sample 2, we can observe that they were accepted by the court, but the corresponding judicial documents for the formal bankruptcy procedure may not be

This sample helps us assess whether bankruptcy courts have facilitated the acceptance of bankruptcy filings and whether they have encouraged more debtors to voluntarily file for bankruptcy.

We then use the sample of bankruptcy applications with final decisions, which includes all applications with detailed records on whether they were accepted or rejected, to test whether the increase in case numbers is driven by a relaxation of case acceptance standards. We control for the same fixed effects as in Equation 4, as well as log firm age and log registered capital. In addition, we include dummy variables for whether the case is a reorganization and whether the firm is state-owned, since these factors may affect the likelihood of case acceptance.

The regression results are reported in Table 20, and the corresponding results of the dynamic effect are shown in Appendix Figure A15. We find no evidence of a relaxation in acceptance standards; if anything, there is a trend toward stricter standards.

7.3.2 Public Willingness towards Bankruptcy

Bankruptcy in China has long been stigmatized, leading to a reluctance among firms to voluntarily file for bankruptcy despite financial distress. The introduction of specialized bankruptcy courts, which provide more effective bankruptcy resolution, may encourage more firms to initiate bankruptcy proceedings. To explore this, we examine how the reform affects the probability of voluntary applications. We use *sample 2* as described above, and apply the same control variables along with the same types of fixed effects.

The regression results are reported in Table 21, and we find a 14% increase in the probability of voluntary bankruptcy. We also plot dynamic effects in Appendix Figure A16. We find that prior to the establishment of bankruptcy courts, the parallel trends assumption holds, while after their establishment, there is a clear upward trend in the likelihood of firms voluntarily filing for bankruptcy.

These findings suggest that specialized bankruptcy courts not only improve outcomes on the intensive margin, but also foster a cultural and institutional environment where firms are more willing to engage in bankruptcy resolution on the extensive margin. This has important implications for improving market discipline and resource reallocation in the Chinese economy.

available. Therefore, in terms of firms that have filed for bankruptcy, sample 1 is not a subset of sample 2. Conversely, all cases in sample 1 must have been accepted during the bankruptcy application stage, and the court acceptance date is always documented in judgment documents in bankruptcy cases.

8 Conclusion

In this article, we construct the most comprehensive bankruptcy database of Chinese firms to date and provide one of the first causal estimates of the real effects of China's bankruptcy reform. The reform, which introduced specialized bankruptcy courts across civil jurisdictions, raised the recovery rate for unsecured creditors by 38.6 percentage points. Using a difference-in-differences strategy, we show that this improvement is not primarily driven by shorter case duration or lower direct costs, but by enhanced asset discovery and disposal, as well as greater capital infusion in reorganizations.

Our conceptual framework highlights two channels through which reforms can raise recovery rates: cost reduction and value creation. While conventional wisdom emphasizes speed, our findings reveal that faster proceedings do not necessarily yield better outcomes. Instead, the ability to create value—through professionalized asset discovery and disposal and the attraction of reorganization investors—is more consequential. This also explains why the reform has a particularly strong impact on reorganization cases, where the potential for value creation is greatest.

The reform also generated broader economic benefits. Banks' nonperforming loan ratios declined, unsecured lending expanded, and financially constrained firms gained greater access to credit and investment opportunities. At the macro level, the reform increased the number of bankruptcy cases processed without lowering acceptance thresholds and encouraged more voluntary filings by distressed firms—an important step toward a more market-oriented economy.

More fundamentally, our analysis shows that in imperfect bankruptcy systems, the main impediments to creditor protection are not case duration or direct costs, but failures in asset identification, inefficient sales, and difficulties in attracting reorganization investors. Addressing these frictions yields far greater improvements in recovery outcomes.

Finally, our findings have important implications for other developing countries. Weak legal infrastructure often limits creditor protection and financial development. China's experience demonstrates that strengthening bankruptcy enforcement can substantially raise recovery rates, reduce financial frictions, and foster broader economic growth. By documenting these effects with a novel case-level database, we provide new insights into how emerging economies can build more effective bankruptcy systems and deepen their financial markets.

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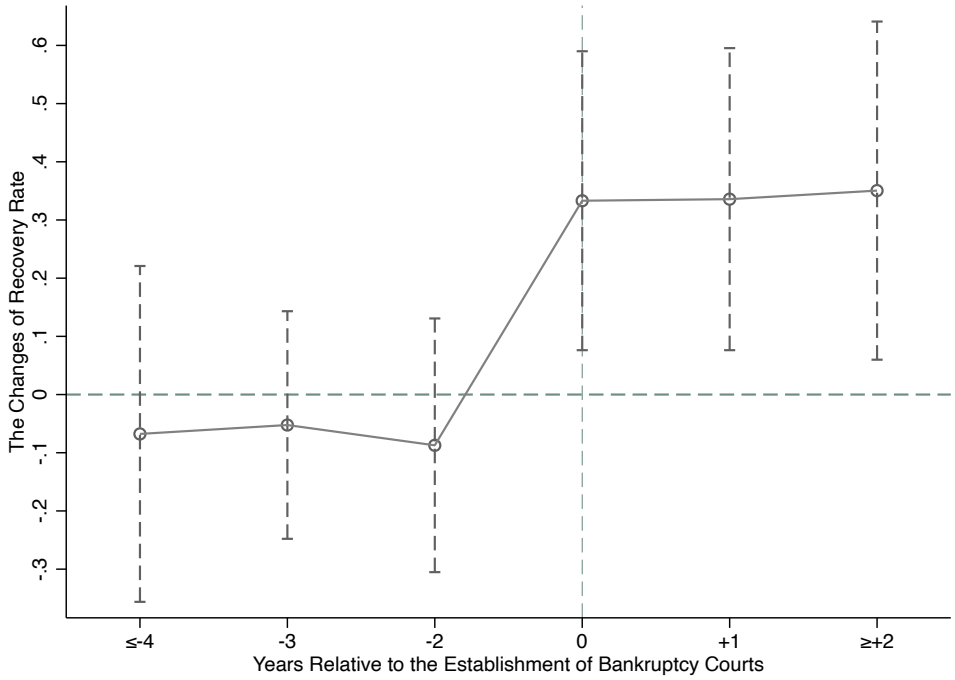


Figure 1: The Dynamic Effects of Bankruptcy Reform on Recovery Rate

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on recovery rate for unsecured creditors. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (4) of Table 3. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

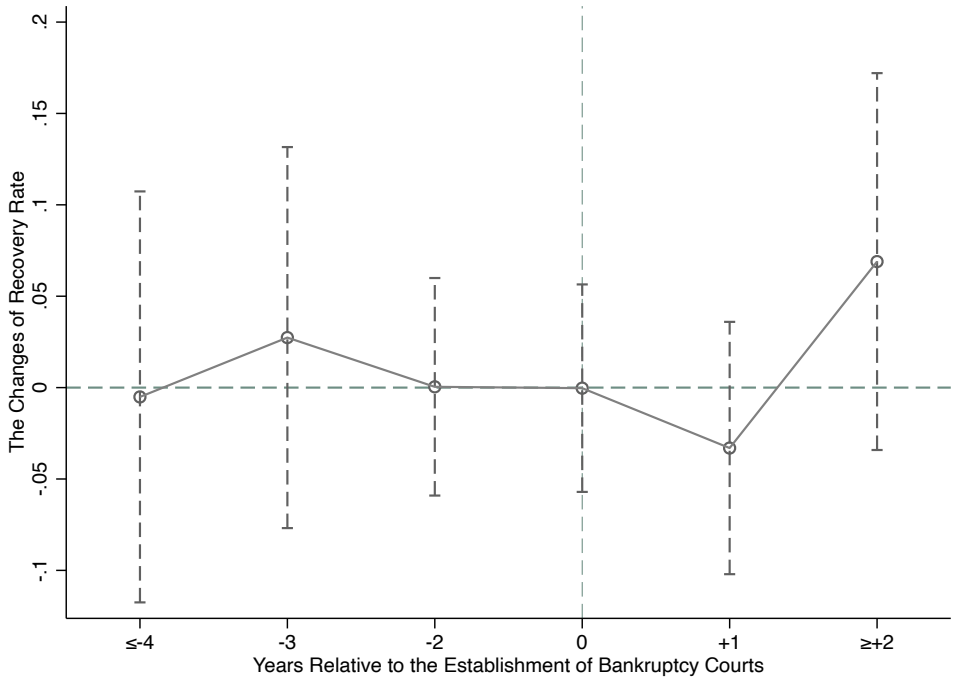


Figure 2: The Dynamic Effects of Bankruptcy Reform on Recovery Rate for Other Untreated Civil Courts in Cities with Established Bankruptcy Courts

Notes: This figure shows the dynamic effects of bankruptcy reform on recovery rate for other untreated civil courts in cities with established bankruptcy courts. Specifically, we exclude the civil courts that establish bankruptcy courts and use the remaining courts within those cities as a pseudo-treatment group to identify the effect of establishing bankruptcy courts on recovery rates. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (4) of Table 4. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

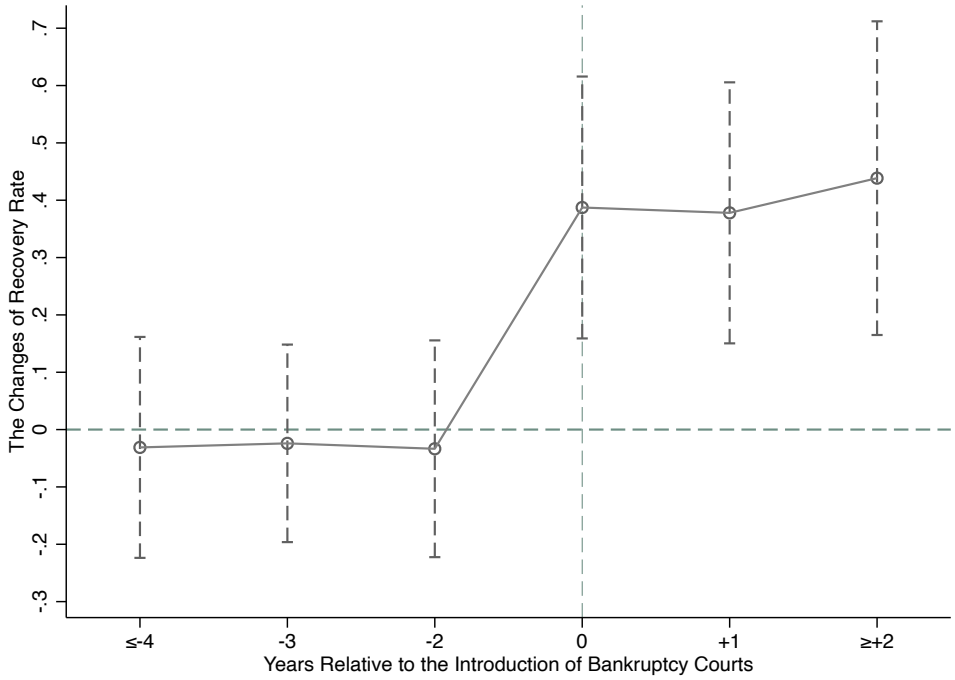


Figure 3: The Dynamic Effects of Bankruptcy Reform on Recovery Rate (Stacked DID)

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on recovery rate for unsecured creditors by using the method of Stacked DID. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (4) of Table 3. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

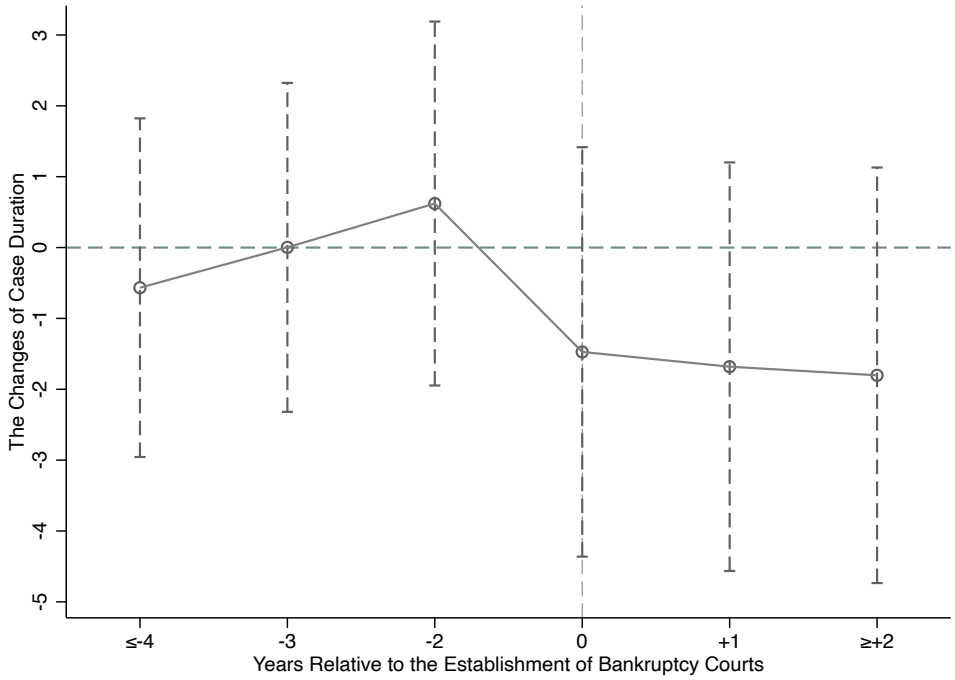


Figure 4: The Dynamic Effects of Bankruptcy Reform on Case Duration

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on case duration. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (4) of Table 8. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

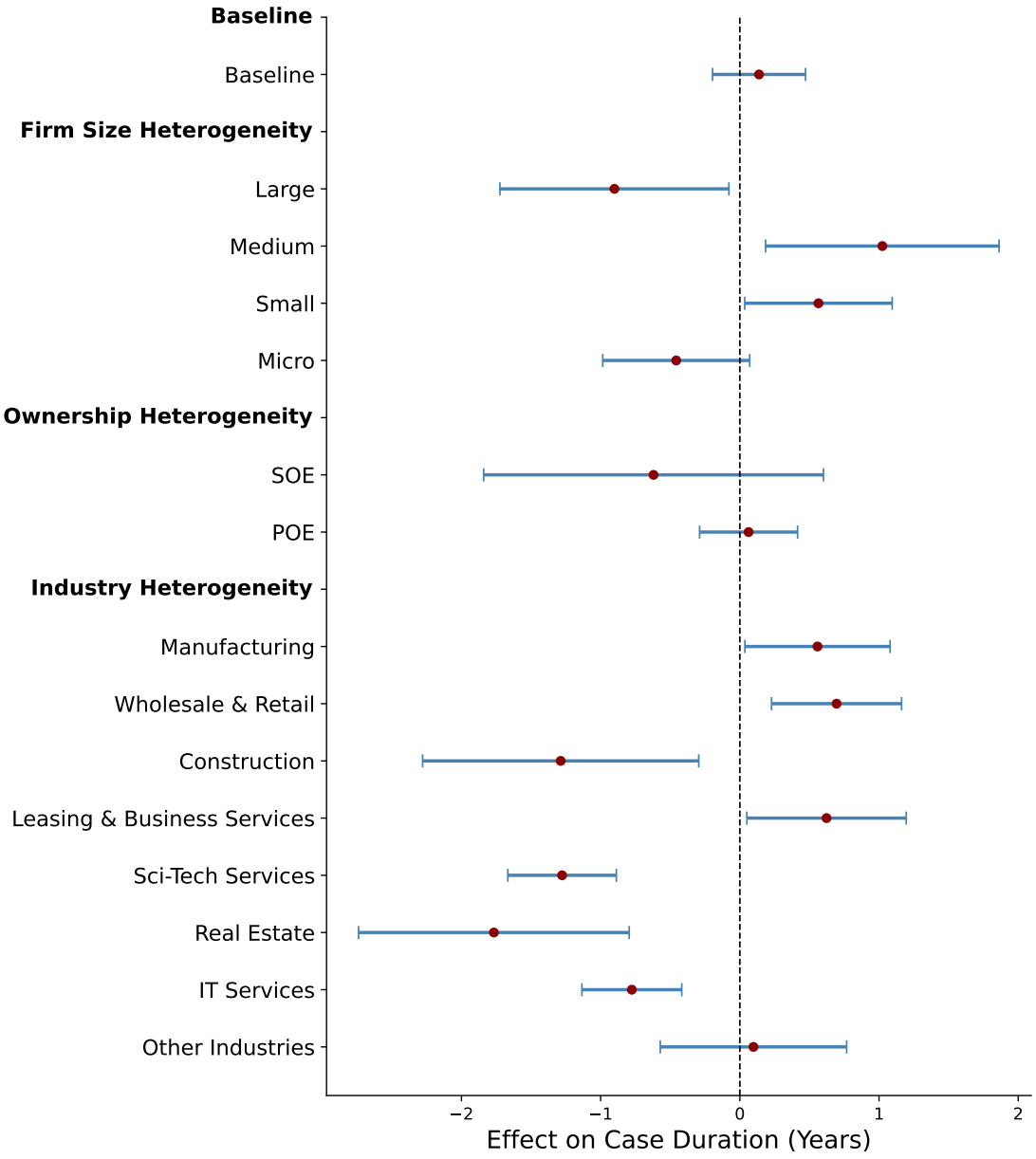


Figure 5: The Heterogenous Effects of Bankruptcy Reform on Case Duration

Notes: This figure shows the heterogenous effects of the establishment of bankruptcy courts on case duration. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (3) of Appendix Table A1. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

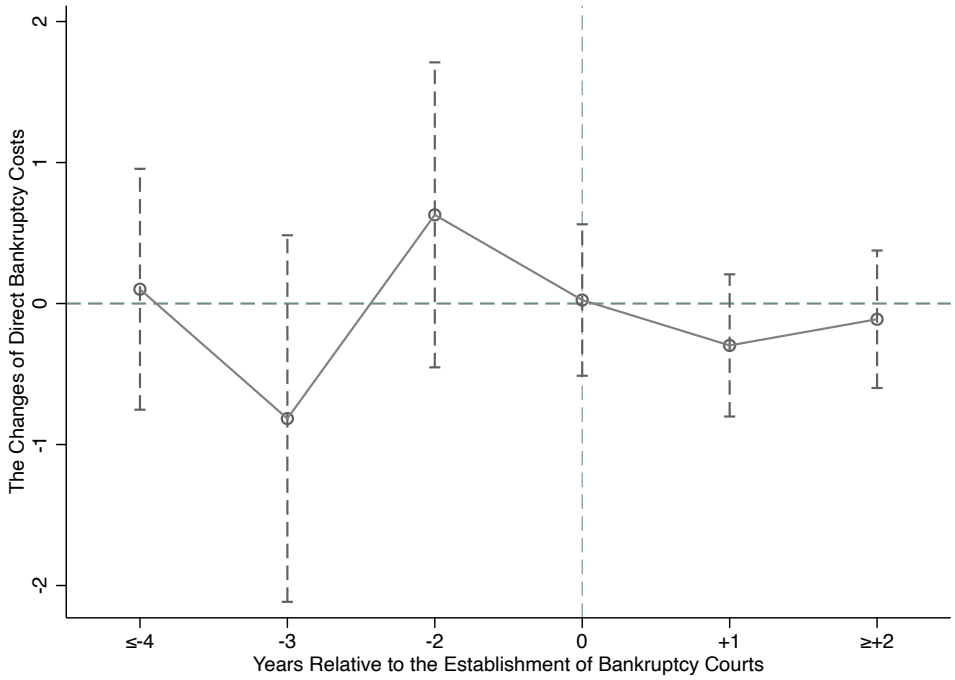


Figure 6: The Dynamic Effects of Bankruptcy Reform on Direct Bankruptcy Costs

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on direct bankruptcy costs. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (1) of Table 12. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

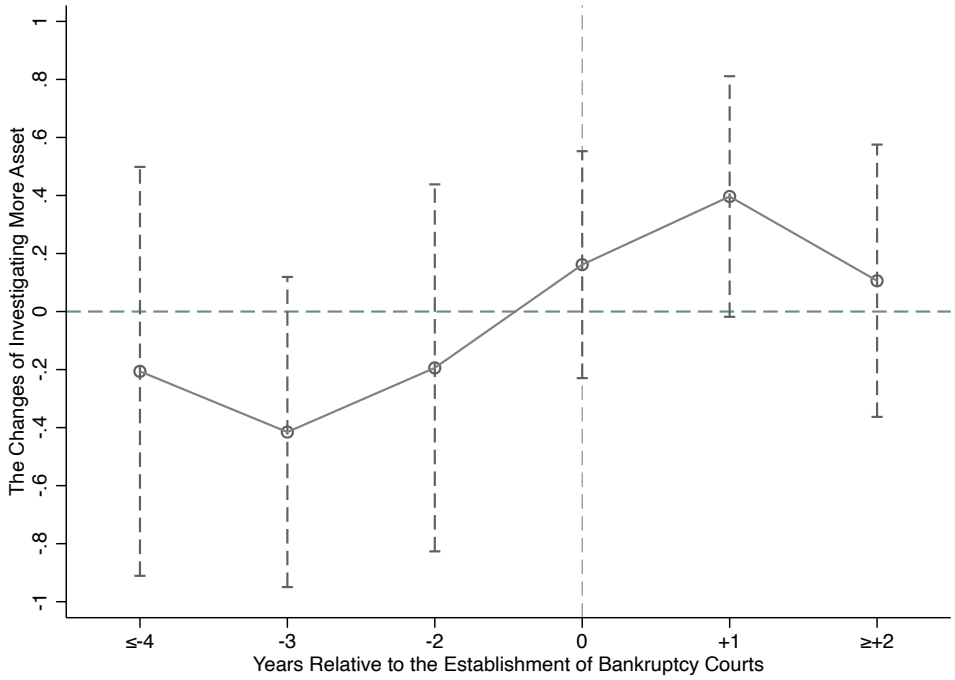


Figure 7: The Dynamic Effects of Bankruptcy Reform on Value Creation

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on value creation. In this figure, the dependent variable is a binary variable, $More$, which equals one if the final total distributable asset value exceeds the book value of total assets at the time of filing. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (1) of Table 13. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

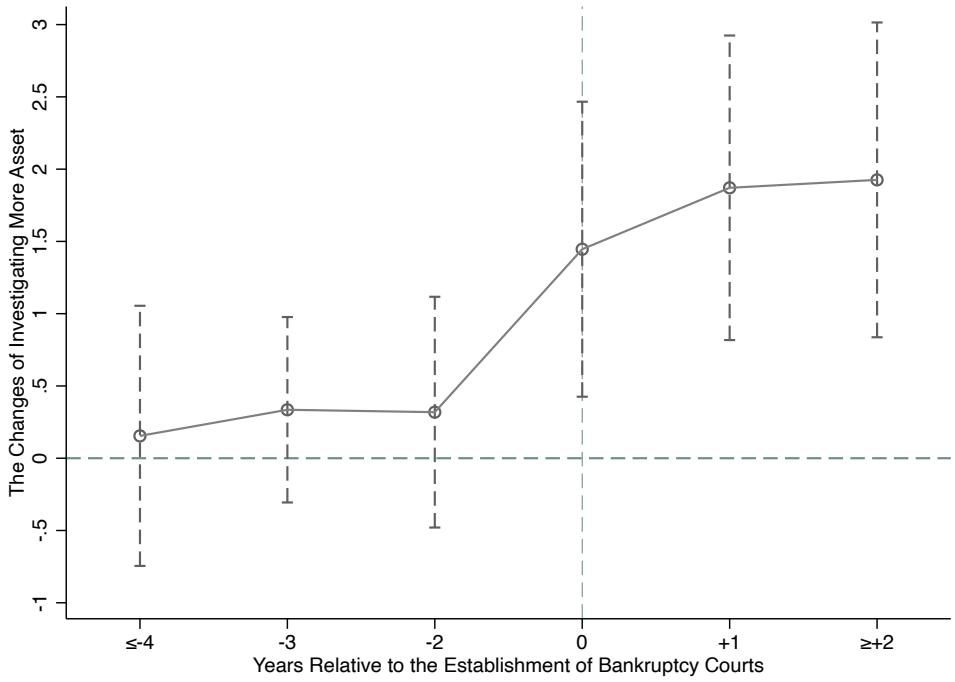


Figure 8: The Dynamic Effects of Bankruptcy Reform on Value Creation

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on value creation. In this figure, the dependent variable is the ratio of final total distributable asset value to the book value of total assets at the time of filing. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (1) of Table 14. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

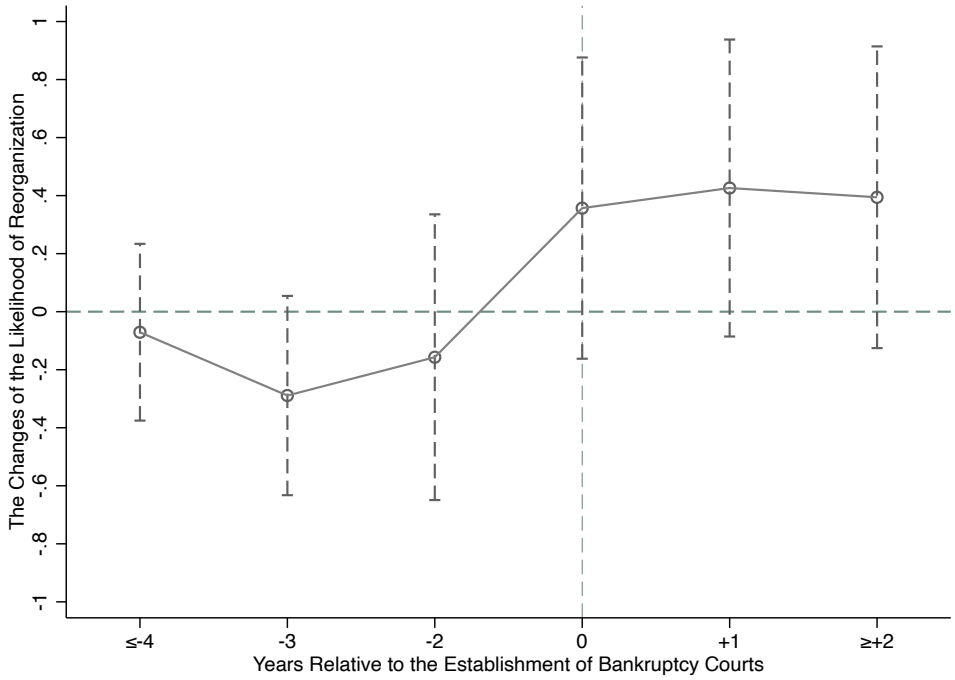


Figure 9: The Dynamic Effects of Bankruptcy Reform on Reorganization

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on the likelihood of firms enter reorganization. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (1) of Table 16. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	1%	99%
Recovery Rate	3,145	0.131	0.232	0	1
Case Duration (Days)	3,113	556.70	493.55	40	2,595
Case Year	3,145	2020.46	2.36	2,014	2,024
Reorganization	3,145	0.225	0.418	0	1
State-Owned Enterprise	3,141	0.024	0.152	0	1
Registered Capital (Millions CNY)	3,144	64.50	332.00	0.001	10,000
Firm Age (Years)	3,144	13.84	7.16	1	68
Total Book Assets (Millions CNY)	2,043	170.00	565.00	0	4,200
Total Book Liabilities (Millions CNY)	1,993	424.00	1,350.00	0.009	10,200
Distributable Bankruptcy Assets (Millions CNY)	2,718	62.70	211.00	0	1,600
Total Debt (Millions CNY)	2,721	415.00	1,460.00	0.059	11,700
Unsecured Debt (Millions CNY)	2,721	264.00	991.00	0.012	9,440
Unsecured Debt Ratio	2,721	0.805	0.265	0.032	1
Direct Bankruptcy Cost (Millions CNY)	2,578	4.70	15.10	0.00003	111
Trustee Fee (Millions CNY)	1,818	0.98	2.39	0	16.30
Direct Bankruptcy Cost Ratio	2,441	0.348	0.761	0.003	5.626

Notes: This table presents descriptive statistics for the key variables in our paper. The data are sourced from the National Corporate Bankruptcy Information Disclosure Platform and *Tianyancha*. See the text for the description of all the variables.

Table 2: Descriptive Statistics of Recovery Rate for Unsecured Creditors

	Obs	Mean	Std. Dev.	Min	Max
Full Sample	3,145	0.131	0.232	0	1
By Case Type					
Reorganization (22%)	707	0.232	0.280	0	1
Liquidation (78%)	2,438	0.102	0.207	0	1
By Ownership					
State-Owned Enterprise (2%)	74	0.099	0.219	0	1
Privately-Owned Enterprise (98%)	3,067	0.132	0.232	0	1
By Firm Size					
Large (17%)	519	0.135	0.232	0	1
Medium (16%)	488	0.144	0.246	0	1
Small (30%)	949	0.126	0.229	0	1
Micro (38%)	1,184	0.128	0.228	0	1
By Industry (GB Industry Categories)					
Manufacturing	1,582	0.115	0.211	0	1
Wholesale and Retail	323	0.114	0.236	0	1
Real Estate	270	0.184	0.231	0	1
Leasing and Business Services	195	0.141	0.248	0	1
Scientific Research and Technical Services	188	0.116	0.219	0	1
Construction	107	0.198	0.301	0	1
Information Transmission, Software and IT Services	79	0.164	0.306	0	1
Transportation, Storage and Postal Services	63	0.147	0.260	0	1
Culture, Sports and Entertainment	58	0.126	0.237	0	1
Agriculture, Forestry, Animal Husbandry and Fishery	47	0.162	0.282	0	1
Electricity, Heat, Gas and Water Production and Supply	45	0.144	0.243	0	1
Mining	32	0.229	0.278	0	1
Finance	41	0.064	0.154	0	0.921
Accommodation and Catering	50	0.135	0.263	0	1
Resident Services, Repair and Other Services	23	0.242	0.353	0	1
Water Conservancy, Environment and Public Facilities Management	22	0.143	0.205	0	0.769
Health and Social Work	10	0.244	0.361	0	1
Education	10	0.182	0.330	0	1

Notes: The table presents descriptive statistics of the recovery rate for unsecured creditors across the overall sample and various subsamples defined by case type, ownership type, firm size, and industry categories based on the National Standard Industry Classification. Recovery rate range between 0 and 1.

Table 3: The Effect of Bankruptcy Reform on Recovery Rate

	Recovery Rate			
	(1)	(2)	(3)	(4)
Bankruptcy Court	0.248***	0.306***	0.297***	0.386***
	(0.071)	(0.098)	(0.094)	(0.126)
Ln Firm Age			-0.014	0.0001
			(0.016)	(0.017)
Ln Registered Capital			-0.002	0.006
			(0.004)	(0.005)
Ln Unsecured Debt				-0.017***
				(0.005)
Unsecured Debt Ratio				0.008
				(0.030)
Court FE	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓
Industry × Year FE		✓	✓	✓
Firm Size FE		✓	✓	✓
Observations	1,880	1,854	1,853	1,609
R-squared	0.255	0.295	0.296	0.321

Notes: This table presents the effect of bankruptcy reform on recovery rate. *Bankruptcy Court* is one if the civil court has established a bankruptcy court and zero if the civil court has not established a bankruptcy court. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: The Effect of Bankruptcy Reform on Recovery Rate for Other Untreated Civil Courts in Cities with Established Bankruptcy Courts

	Recovery Rate			
	(1)	(2)	(3)	(4)
Pseudo Court	0.008	0.008	0.005	-0.017
	(0.019)	(0.022)	(0.022)	(0.027)
Ln Firm Age			-0.013	0.003
			(0.021)	(0.020)
Ln Registered Capital			0.004	0.011***
			(0.003)	(0.004)
Ln Unsecured Debt				-0.015***
				(0.006)
Unsecured Debt Ratio				-0.014
				(0.030)
Court FE	✓	✓	✓	✓
Province × Year FE	✓	✓	✓	✓
Industry × Year FE		✓	✓	✓
Firm Size FE		✓	✓	✓
Observations	1,771	1,744	1,743	1,497
R-squared	0.239	0.284	0.285	0.298

Notes: This table presents the effect of bankruptcy reform on recovery rate for other untreated civil courts in cities with established bankruptcy courts. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5: The Influence of Forum Shopping on Baseline Results

	Recovery Rate	
	(1)	(2)
Bankruptcy Court	0.384***	
	(0.131)	
Bankruptcy Court × Forum Shopping		0.393***
		(0.133)
Bankruptcy Court × Non-Forum Shopping		0.346***
		(0.128)
Forum Shopping	-0.008	
	(0.027)	
Ln Firm Age	0.004	0.005
	(0.019)	(0.019)
Ln Registered Capital	0.006	0.006
	(0.006)	(0.006)
Ln Unsecured Debt	-0.018***	-0.018***
	(0.006)	(0.006)
Unsecured Debt Ratio	-0.002	-0.004
	(0.031)	(0.031)
Court FE	✓	✓
City × Year FE	✓	✓
Industry × Year FE	✓	✓
Firm Size FE	✓	✓
Observations	1,529	1,529
R-squared	0.324	0.325

Notes: This table presents the effect of bankruptcy reform on recovery rate when controlling for the dummy variable of Forum Shopping in column (1) and the effect of bankruptcy reform on recovery rate for Forum Shopping cases and Non-Forum Shopping cases in column (2). The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6: The Effect of Bankruptcy Reform on Recovery Rate (Cluster at City-level)

	Recovery Rate			
	(1)	(2)	(3)	(4)
Bankruptcy Court	0.248***	0.306**	0.297**	0.386**
	(0.093)	(0.117)	(0.113)	(0.155)
Ln Firm Age			-0.014	0.0001
			(0.020)	(0.019)
Ln Registered Capital			-0.002	0.006
			(0.004)	(0.004)
Ln Unsecured Debt				-0.017***
				(0.005)
Unsecured Debt Ratio				0.008
				(0.024)
Court FE	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓
Industry × Year FE		✓	✓	✓
Firm Size FE		✓	✓	✓
Observations	1,880	1,854	1,853	1,609
R-squared	0.255	0.295	0.296	0.321

Notes: This table presents the effect of bankruptcy reform on recovery rate. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7: The Effect of Bankruptcy Reform on Recovery Rate (Control for Number of Unsecured Creditors)

	Recovery Rate
	(1)
Bankruptcy Court	0.290**
	(0.120)
Ln Firm Age	0.009
	(0.017)
Ln Registered Capital	0.006
	(0.006)
Ln Unsecured Debt	-0.024***
	(0.006)
Unsecured Debt Ratio	-0.004
	(0.037)
Ln Number of Unsecured Creditors	0.020**
	(0.008)
Court FE	✓
City × Year FE	✓
Industry × Year FE	✓
Firm Size FE	✓
Observations	1,226
R-squared	0.363

Notes: This table presents the effect of bankruptcy reform on recovery rate when additionally controlling for the number of unsecured creditors. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8: The Effect of Bankruptcy Reform on Case Duration

	Case Duration (Year)			
	(1)	(2)	(3)	(4)
Bankruptcy Court	-2.694	-2.037	-1.865	-1.822
	(1.717)	(1.419)	(1.364)	(1.505)
Ln Firm Age			0.088	0.011
			(0.060)	(0.066)
Ln Registered Capital			0.104***	0.071***
			(0.020)	(0.023)
Ln Unsecured Debt				0.054***
				(0.015)
Unsecured Debt Ratio				-0.267
				(0.127)
Court FE	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓
Industry × Year FE		✓	✓	✓
Firm Size FE		✓	✓	✓
Observations	1,862	1,836	1,835	1,593
R-squared	0.537	0.579	0.595	0.608

Notes: This table presents the effect of bankruptcy reform on case duration. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9: The Effect of Bankruptcy Reform on Case Duration by Firm Size

	Case Duration (Year)	
	Large Firms	Non-Large Firms
Bankruptcy Court	-3.556***	0.956***
	(1.028)	(0.321)
Ln Firm Age	0.001	0.016
	(0.305)	(0.065)
Ln Registered Capital	0.137	0.076***
	(0.190)	(0.023)
Ln Unsecured Debt	0.006	0.050***
	(0.090)	(0.016)
Unsecured Debt Ratio	-1.270**	-0.155
	(0.613)	(0.134)
Court FE	✓	✓
City × Year FE	✓	✓
Industry × Year FE	✓	✓
Firm Size FE	✓	✓
Observations	121	1,282
R-squared	0.754	0.598

Notes: This table presents the effect of bankruptcy reform on case duration by firm size. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10: The Effect of Bankruptcy Reform on Recovery Rate: Difference between Large firms and Non-large Firms

	Recovery Rate
	(1)
Bankruptcy Court	0.382***
	(0.123)
Bankruptcy Court × Large Firm	-0.021
	(0.056)
Treatment × Large Firm	-0.068
	(0.054)
Ln Firm Age	0.0004
	(0.017)
Ln Registered Capital	0.006
	(0.005)
Ln Unsecured Debt	-0.017***
	(0.005)
Unsecured Debt Ratio	0.008
	(0.031)
Court FE	✓
City × Year FE	✓
Industry × Year FE	✓
Firm Size FE	✓
Observations	1,609
R-squared	0.323

Notes: This table presents the differential effect of bankruptcy reform on recovery rate between large firms and non-large firms. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11: The Relationship between Recovery Rate and Case Duration

	Recovery Rate			
	(1)	(2)	(3)	(4)
Ln Case Duration	0.005	0.006	0.220**	0.212**
	(0.011)	(0.011)	(0.100)	(0.100)
Ln Case Duration Square			-0.019**	-0.018**
			(0.009)	(0.009)
Ln Firm Age	-0.002	-0.001	-0.0001	0.001
	(0.017)	(0.017)	(0.017)	(0.017)
Ln Registered Capital	0.004	0.005	0.005	0.005
	(0.005)	(0.005)	(0.005)	(0.005)
Ln Unsecured Debt	-0.016***	-0.017***	-0.016***	-0.017***
	(0.005)	(0.005)	(0.005)	(0.005)
Unsecured Debt Ratio	0.013	0.011	0.009	0.008
	(0.030)	(0.030)	(0.030)	(0.031)
Bankruptcy Court		0.376***		0.357***
		(0.124)		(0.117)
Court FE	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓
Firm Size FE	✓	✓	✓	✓
Observations	1,593	1,593	1,593	1,593
R-squared	0.316	0.318	0.319	0.321

Notes: This table presents the relationship between recovery rate and case duration. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 12: The Effect of Bankruptcy Reform on Direct Bankruptcy Cost Ratio

	Direct Bankruptcy Cost Ratio	
	(1)	(2)
	Full Sample	Subsample
Bankruptcy Court	-0.301	0.119
	(0.314)	(0.149)
Ln Firm Age	0.019	-0.020
	(0.047)	(0.014)
Ln Registered Capital	-0.007	-0.001
	(0.024)	(0.005)
Ln Unsecured Debt	-0.034**	-0.013***
	(0.017)	(0.004)
Unsecured Debt Ratio	-0.064	0.069***
	(0.145)	(0.024)
Court FE	✓	✓
City × Year FE	✓	✓
Industry × Year FE	✓	✓
Firm Size FE	✓	✓
Observations	1,358	1,279
R-squared	0.312	0.334

Notes: This table presents the effect of bankruptcy reform on direct bankruptcy costs. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 13: The Effect of Bankruptcy Reform on Asset Value Creation

	More = 1		
	(1)	(2)	(3)
Bankruptcy Court	0.302**		0.372**
	(0.152)		(0.169)
Bankruptcy Court × Reorganization		0.307**	
		(0.152)	
Bankruptcy Court × Liquidation		0.250	
		(0.169)	
Ln Firm Age	0.005	0.005	0.009
	(0.038)	(0.038)	(0.039)
Ln Registered Capital	-0.022	-0.022	-0.025*
	(0.013)	(0.014)	(0.013)
Ln Unsecured Debt	0.003	0.003	0.001
	(0.013)	(0.013)	(0.013)
Unsecured Debt Ratio	-0.012	-0.006	-0.002
	(0.071)	(0.076)	(0.072)
Ln Case Duration			0.067**
			(0.026)
Court FE	✓	✓	✓
City × Year FE	✓	✓	✓
Industry × Year FE	✓	✓	✓
Firm Size FE	✓	✓	✓
Observations	914	914	993
R-squared	0.293	0.294	0.299

Notes: This table presents the effect of bankruptcy reform on value creation. The dependent variable is a binary variable, $More$, which equals one if the final total distributable asset value exceeds the book value of total assets at the time of filing. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 14: The Effect of Bankruptcy Reform on Asset Value Creation

	Value Creation Ratio	
	(1)	(2)
Bankruptcy Court	1.116***	
	(0.349)	
Bankruptcy Court × Reorganization		1.145***
		(0.347)
Bankruptcy Court × Liquidation		1.019***
		(0.360)
Ln Firm Age	0.046	0.047
	(0.043)	(0.044)
Ln Registered Capital	-0.026	-0.026
	(0.017)	(0.017)
Ln Unsecured Debt	-0.013	-0.014
	(0.013)	(0.013)
Unsecured Debt Ratio	-0.062	-0.044
	(0.069)	(0.070)
Court FE	✓	✓
City × Year FE	✓	✓
Industry × Year FE	✓	✓
Firm Size FE	✓	✓
Observations	633	633
R-squared	0.407	0.409

Notes: This table presents the effect of bankruptcy reform on value creation. The dependent variable is the ratio of final total distributable asset value to the book value of total assets at the time of filing. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 15: Granular Evidence on the Effects of Bankruptcy Reform on Value Creation

	(1) Unpaid RC	(2) Unidentified Asset	(3) Auction	(4) Auction
Bankruptcy Court	0.048*	0.050*	-0.159	-0.104
	(0.026)	(0.026)	(0.127)	(0.089)
Liquidation				0.428***
				(0.035)
Bankruptcy Court × Liquidation				-0.298***
				(0.086)
Court FE	Yes	Yes	Yes	Yes
Observations	2,039	2,039	2,038	2,038
R-squared	0.186	0.173	0.230	0.289
	(5) Other Disposal Mechanisms	(6) Other Disposal Mechanisms	(7) Investors	(8) Capital Infusion
Bankruptcy Court	0.123	0.037	0.136*	2.197***
	(0.152)	(0.105)	(0.070)	(0.492)
Liquidation		-0.396***		
		(0.037)		
Bankruptcy Court × Liquidation		0.325***		
		(0.070)		
Court FE	Yes	Yes	Yes	Yes
Observations	2,048	2,048	325	152
R-squared	0.207	0.257	0.483	0.223

Notes: This table reports eight regressions examining the relationship between bankruptcy courts and value creation. *Unpaid RC* is an indicator equal to one if the court identifies unpaid registered capital, and zero otherwise. *Unidentified Asset* is an indicator equal to one if the court uncovers previously unidentified but valuable assets, and zero otherwise. *Auction* is an indicator equal to one if assets are disposed of through auctions, and zero otherwise. *Other Disposal Mechanisms* is an indicator equal to one if assets are disposed of through mechanisms other than auctions, and zero otherwise. *Investors* is an indicator equal to one if reorganization investors are introduced, and zero otherwise. *Capital Infusion* measures the amount of capital injected by reorganization investors. Standard errors (in parentheses) are clustered at the court level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 16: The Effect of Bankruptcy Reform on Reorganization and Recovery Rate

	Reorganization	Recovery Rate	
	(1)	(2)	(3)
Bankruptcy Court	0.494*	0.386***	
	(0.267)	(0.126)	
Bankruptcy Court × Reorganization			0.402***
			(0.134)
Bankruptcy Court × Liquidation			0.351***
			(0.124)
Ln Firm Age	0.003	0.0001	0.0002
	(0.018)	(0.017)	(0.017)
Ln Registered Capital	0.007	0.006	0.006
	(0.006)	(0.005)	(0.005)
Ln Unsecured Debt	0.040***	-0.017***	-0.017***
	(0.006)	(0.005)	(0.005)
Unsecured Debt Ratio	-0.187***	0.008	0.013
	(0.045)	(0.030)	(0.029)
Court FE	✓	✓	✓
City × Year FE	✓	✓	✓
Industry × Year FE	✓	✓	✓
Firm Size FE	✓	✓	✓
Observations	1,609	1,609	1,609
R-squared	0.576	0.321	0.321

Notes: This table presents the effect of bankruptcy reform on the likelihood of firms enter reorganization in column (1) and the effect of bankruptcy reform on recovery rate in column (2), and the heterogeneous effect of bankruptcy reform on recovery rate by case type in column (3). The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 17: The Real Impacts of Bankruptcy Reform on Local Commercial Banks

	Non-performing Loan Ratio			Unsecured Loans Ratio		
	(1)	(2)	(3)	(4)	(5)	(6)
Bankruptcy Court	-0.005*	-0.006*	-0.002**	0.025*	0.026*	0.026*
	(0.003)	(0.003)	(0.001)	(0.014)	(0.013)	(0.015)
GDP per capita		-0.012	0.001		-0.070*	-0.027
		(0.011)	(0.008)		(0.042)	(0.036)
Loan-to-GDP ratio		-0.001	0.003		-0.016	-0.019
		(0.005)	(0.002)		(0.010)	(0.012)
Government Fiscal Deficit		-0.017	-0.014		-0.106	-0.210
		(0.036)	(0.035)		(0.259)	(0.274)
Industrial Structure		-0.045	-0.017		0.223	0.285
		(0.037)	(0.019)		(0.144)	(0.160)
Bank Size			-0.007			0.060
			(0.007)			(0.054)
Leverage			-0.164**			0.709
			(0.080)			(0.461)
Capital Adequacy Ratio			-0.002**			0.007**
			(0.001)			(0.003)
Deposit Ratio			0.001			0.061**
			(0.003)			(0.030)
Income			-0.004			-0.060
			(0.006)			(0.044)
Bank FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	859	829	761	746	729	665
R-squared	0.366	0.377	0.602	0.822	0.826	0.840

Notes: This table presents the effect of bankruptcy reform on non-performing loan ratio and unsecured loans ratio for local commercial banks. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by bank level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 18: The Effect of Bankruptcy Reform on Corporate Financial Behavior (DDD)

	$\frac{\text{Short-term Debt}}{\text{Total Asset}}$	$\frac{\text{Long-term Debt}}{\text{Total Asset}}$	$\frac{\text{Interest Expenditure}}{\text{Total Liability}}$	$\frac{\text{Total Liability}}{\text{Total Asset}}$	$\frac{\text{Fixed Investment}}{\text{Operating Revenue}}$
	(1)	(2)	(3)	(4)	(5)
Bankruptcy Court × MSEs	0.04097***	-0.00037	-0.00041	0.05035***	0.01081**
	(0.00423)	(0.00097)	(0.00036)	(0.00493)	(0.00412)
Ln Total Asset	-0.01907***	0.00256***	-0.00148***	0.00763**	-0.00088
	(0.00204)	(0.00036)	(0.00024)	(0.00327)	(0.00070)
Ln Firm Age	0.06735***	-0.00392***	0.00074	0.05740***	-0.03073***
	(0.00852)	(0.00120)	(0.00038)	(0.01020)	(0.00261)
Firm FE	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓	✓
Observations	2,175,234	2,175,234	999,066	2,246,213	1,525,530
R-squared	0.707	0.665	0.650	0.675	0.409

Notes: This table presents the effect of bankruptcy reform on corporate financial behavior. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 19: The Effect of Bankruptcy Reform on Case Number

	Case Number		
	(1)	(2)	(3)
Bankruptcy Court	205.351***	188.920***	129.970***
	(31.463)	(31.354)	(22.488)
City × Year FE		✓	✓
Court FE			✓
Observations	8,745	8,272	7,538
R-squared	0.301	0.548	0.837

Notes: This table presents the effect of bankruptcy reform on the number of bankruptcy cases. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 20: The Effect of Bankruptcy Reform on Bankruptcy Case Acceptance

	Case Acceptance = 1			
	(1)	(2)	(3)	(4)
Bankruptcy Court	-0.063	-0.064	-0.068	-0.066
	(0.087)	(0.086)	(0.086)	(0.085)
Ln Firm Age			0.005	0.002
			(0.007)	(0.007)
Ln Registered Capital			-0.012***	-0.012***
			(0.002)	(0.002)
Reorganization				0.036
				(0.027)
SOE				0.030**
				(0.014)
Court FE	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓
Industry × Year FE		✓	✓	✓
Firm Size FE		✓	✓	✓
Observations	19,029	18,915	18,858	18,856
R-squared	0.363	0.362	0.352	0.353

Notes: This table presents the effect of bankruptcy reform on the acceptance probability of bankruptcy application. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 21: The Effect of Bankruptcy Court on Voluntary Bankruptcy Filing

	Voluntary Bankruptcy Filing			
	(1)	(2)	(3)	(4)
Bankruptcy Court	0.131***	0.129***	0.125***	0.141**
	(0.049)	(0.048)	(0.047)	(0.055)
Ln Firm Age			0.044***	0.027***
			(0.009)	(0.008)
Ln Registered Capital			-0.016***	-0.022***
			(0.003)	(0.003)
Reorganization				0.313***
				(0.049)
SOE				0.179***
				(0.025)
Court FE	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓
Industry × Year FE		✓	✓	✓
Firm Size FE		✓	✓	✓
Observations	19,024	18,910	18,853	18,851
R-squared	0.397	0.405	0.407	0.430

Notes: This table presents the effect of bankruptcy reform on the probability of voluntary bankruptcy filing by firms. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

A Appendix

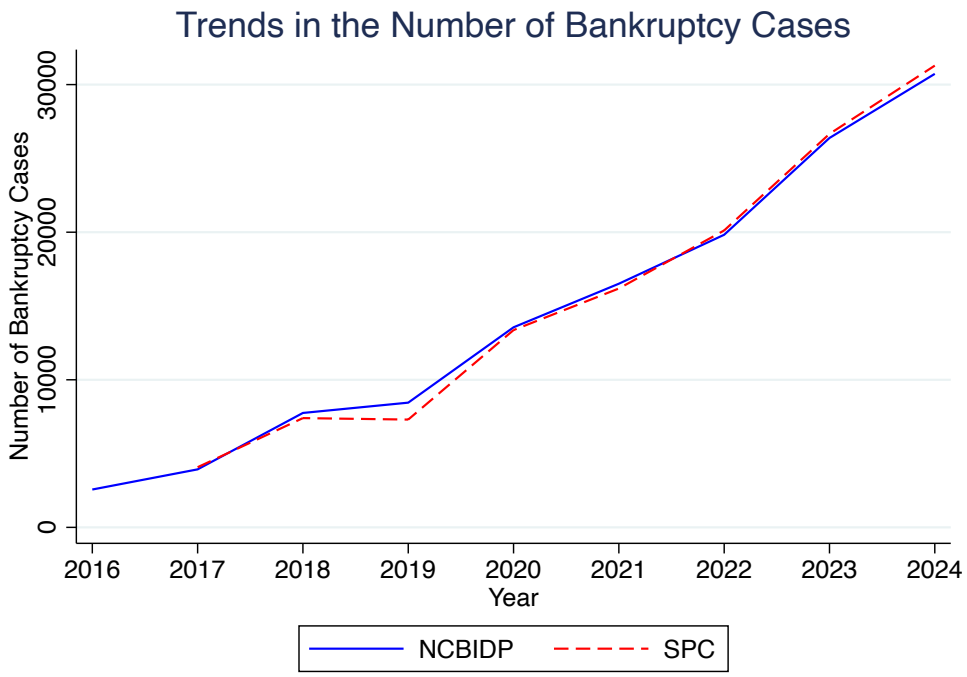


Figure A1: Trends in the Number of Bankruptcy Cases from the NCBIDP and the SPC

Notes: This figure plots the total number of bankruptcy cases collected from the National Corporate Bankruptcy Information Disclosure Platform (NCBIDP) from 2016 to 2024 and total number of bankruptcy cases reported by the Supreme People's Court (SPC) from 2017 to 2024. The figure shows that the two official sources produce nearly the same numbers, implying data of bankruptcy cases from NCBIDP is highly representative.

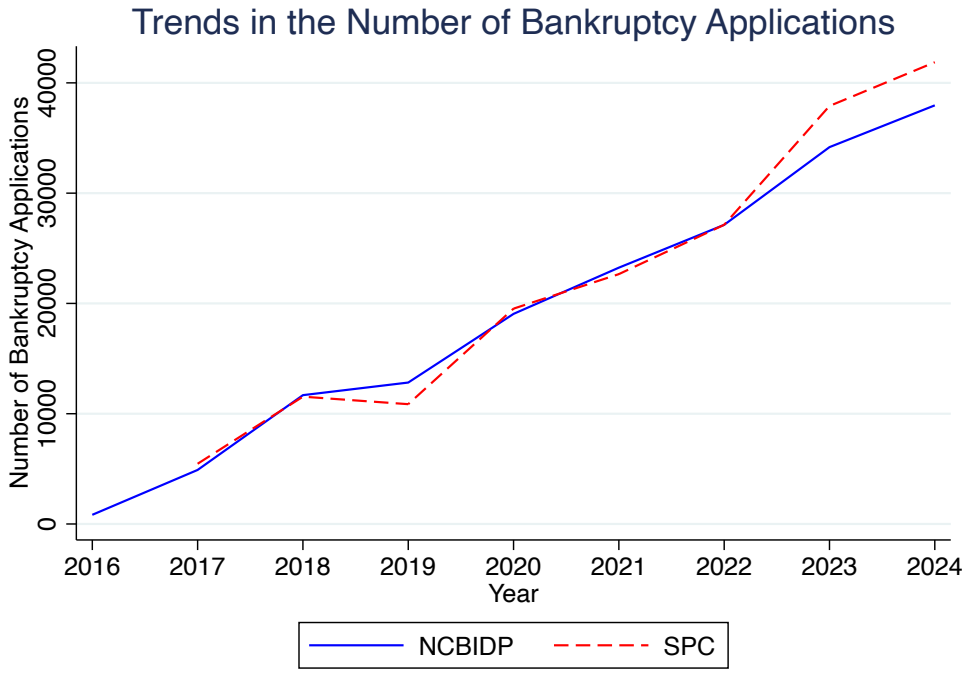


Figure A2: Trends in the Number of Bankruptcy Applications Cases from the NCBIDP and the SPC

Notes: This figure plots the total number of bankruptcy application cases collected from the National Corporate Bankruptcy Information Disclosure Platform (NCBIDP) from 2016 to 2024 and total number of bankruptcy application cases reported by the Supreme People's Court (SPC) from 2017 to 2024. The figure shows that the two official sources produce nearly the same numbers, implying data of bankruptcy application cases from NCBIDP is highly representative.

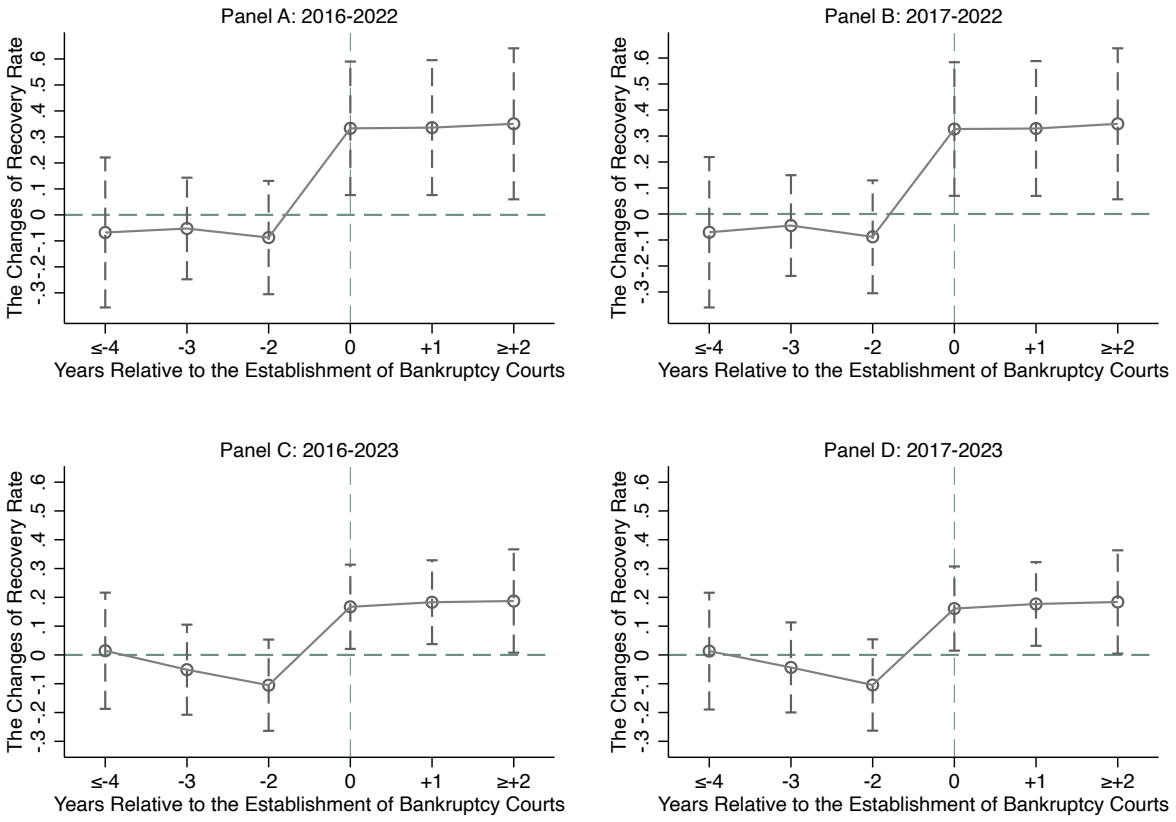


Figure A3: The Dynamic Effects of Bankruptcy Reform on Recovery Rate (Change the Sample Period)

Notes: These figures show the dynamic effects of the establishment of bankruptcy courts on recovery rate for unsecured creditors by change the sample period. The corresponding sample period is presented in the figures. The control variables and fixed effects are identical to those in Column (4) of Table 3. The confidence intervals are at significance levels of 10%. Standard errors are clustered at the city-case year level.

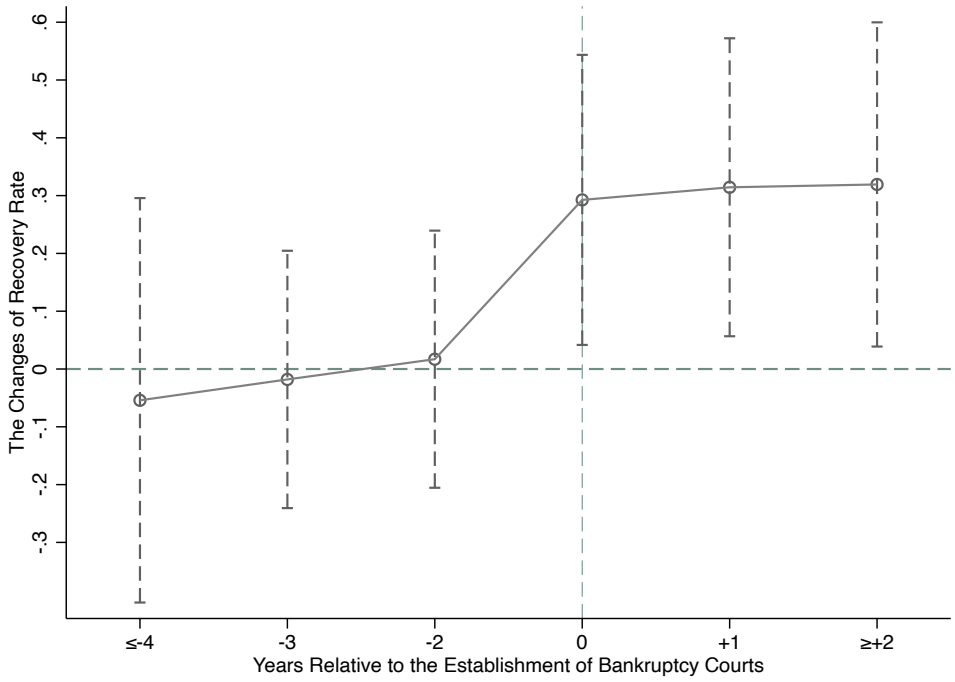


Figure A4: The Dynamic Effects of Bankruptcy Reform on Recovery Rate (Control Number of Creditors)

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on recovery rate for unsecured creditors by additionally controlling for the number of unsecured creditors. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (1) of Table 7. The confidence intervals are at significance levels of 10%. Standard errors are clustered at the city-case year level.

嘉兴市秀洲区人民法院

民事裁定书

（2020）浙0411破15号之四

2020年11月20日，债权人上海勋圣国际物流有限公司以债务人嘉兴乐途仕旅游用品有限公司（以下简称乐途仕公司）不能清偿到期债务、明显缺乏清算能力为由，向本院执行局表示同意对乐途仕公司进行破产清算。本院立案进行审查，于2020年12月8日裁定受理乐途仕公司破产清算案，并依法指定浙江潮乡律师事务所为管理人。

本院查明：经债权人会议债权核查程序，本院于2021年5月13日裁定确认嘉兴市旭龙塑料制品有限公司等24名债权人的无异议债权，债权额合计3,589,882.95元。此外，乐途仕公司尚有职工债权。而乐途仕公司的财产目前仅有26万余元。目前，并无相关主体提出对乐途仕公司进行重整或和解。管理人于2021年5月18日提请本院宣告乐途仕公司破产。

本院认为：乐途仕公司不能清偿到期债务，并且资产不足以清偿全部债务，符合破产的实质条件。依照《中华人民共和国企业破产法》第一百零七条的规定，裁定如下：

宣告嘉兴乐途仕旅游用品有限公司破产。

本裁定自即日起生效。

Figure A5: An Example on Asset Discovery in Bankruptcy

Notes: This figure shows a liquidation case. In this liquidation case, the court initially determined that the firm had only RMB 260,000 in book assets (see this figure). However, through the collection of receivables amounting to RMB 60,000, the total value of assets available for distribution eventually reached RMB 320,000 (see Appendix Figure A6).

附件二

分配公示

嘉兴乐途仕旅游用品有限公司债权人：

管理人根据第一次债权人会议通过的《破产财产分配方案》制定本分配明细，现向全体债权人公示。

一、可供分配财产（数据统计截止日为 2021 年 9 月 26 日）：

1. 拍卖机器设备存货等：173000 元（法院拍卖）；
2. 拍卖汽车：91500 元（管理人拍卖）；
3. 催收债权：61000 元；
4. 利息：498.07 元；

合计：325998.07 元

二、破产财产分配的顺序、比例和数额（数据统计截止日为 2021 年 9 月 26 日）；

1. 本案无对特定财产享有优先权的债权；

2. 破产费用：印鉴制作费 230 元，邮寄费（含预留邮寄费）1850.57 元，诉讼费(含破产案件受理费)3095 元，管理人报酬 32000 元，小计 37175.57 元，全额清偿；

3. 共益债务：50000 元（房租），全额清偿；

4. 职工债权：238822.5 元，全额清偿；

5. 税收债权：137931.48 元，清偿比例 0%；

6. 普通债权：3451969.47 元，清偿比例 0%。

三、其他

1. 分配形式：货币，由管理人根据各债权人提供的银行帐号转帐支付。

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Figure A6: An Example on Asset Discovery in Bankruptcy (Continued)

Notes: This figure shows a liquidation case. In this liquidation case, the court initially determined that the firm had only RMB 260,000 in book assets (see Appendix Figure A5). However, through the collection of receivables amounting to RMB 60,000, the total value of assets available for distribution eventually reached RMB 320,000 (see this figure).

广东省佛山市禅城区人民法院

民事裁定书

(2021)粤 0604 破 46 号之五

申请人：佛山市禅城区中兴实业公司管理人。

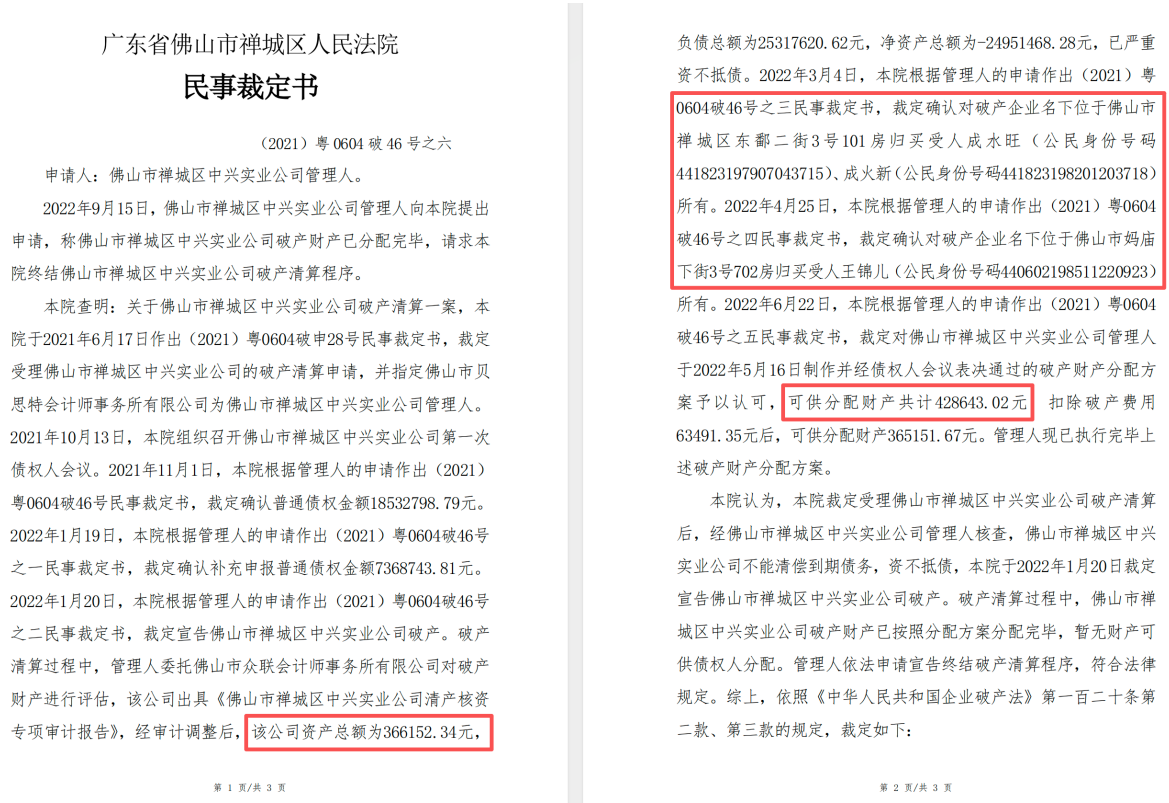
2022 年 6 月 21 日，佛山市禅城区中兴实业公司管理人向本院提出申请,称其制作的《佛山市禅城区中兴实业公司破产财产分配方案》已经债权人会议表决通过，请求本院裁定认可。

本院查明，2021年6月17日，本院作出（2021）粤0604破申28号民事裁定书，裁定受理佛山市禅城区中兴实业公司的破产清算申请，并指定佛山市贝思特会计师事务所有限公司为佛山市禅城区中兴实业公司管理人。2021年10月13日，本院组织召开第一次债权人会议。2021年11月1日，本院根据管理人的申请作出（2021）粤0604破46号民事裁定书，裁定确认普通债权金额18532798.79元。2022年1月19日，本院作出（2021）粤0604破46号之一民事裁定书，裁定补充申报普通债权金额7368743.81元。2022年1月20日，本院作出（2021）粤0604破46号之二民事裁定书，裁定宣告佛山市禅城区中兴实业公司破产。破产清算过程中，查明该公司名下登记的不动产分别位于佛山市禅城区东鄱二街3号101房、佛山市妈庙下街3号702房，现已通过淘宝网司法拍卖平台处置，本院于2022年3月4日作出（2021）粤0604破46号之三民

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Figure A7: An Example on Asset Disposal in Bankruptcy

Notes: This figure shows a liquidation case. In this liquidation case, the firm was found to have approximately RMB 370,000 in book asset value at the beginning (see Appendix Figure A8). By conducting an online judicial auction through the Taobao platform (see this figure), the assets were sold at a higher value, increasing the total asset value available for distribution to RMB 430,000.



广东省佛山市禅城区人民法院

民事裁定书

（2021）粤0604破46号之六

申请人：佛山市禅城区中兴实业公司管理人。

2022年9月15日，佛山市禅城区中兴实业公司管理人向本院提出申请，称佛山市禅城区中兴实业公司破产财产已分配完毕，请求本院终结佛山市禅城区中兴实业公司破产清算程序。

本院查明：关于佛山市禅城区中兴实业公司破产清算一案，本院于2021年6月17日作出（2021）粤0604破申28号民事裁定书，裁定受理佛山市禅城区中兴实业公司的破产清算申请，并指定佛山市贝思特会计师事务所有限公司为佛山市禅城区中兴实业公司管理人。2021年10月13日，本院组织召开佛山市禅城区中兴实业公司第一次债权人会议。2021年11月1日，本院根据管理人的申请作出（2021）粤0604破46号民事裁定书，裁定确认普通债权金额18532798.79元。2022年1月19日，本院根据管理人的申请作出（2021）粤0604破46号之一民事裁定书，裁定确认补充申报普通债权金额7368743.81元。2022年1月20日，本院根据管理人的申请作出（2021）粤0604破46号之二民事裁定书，裁定宣告佛山市禅城区中兴实业公司破产。破产清算过程中，管理人委托佛山市众联会计师事务所有限公司对破产财产进行评估，该公司出具《佛山市禅城区中兴实业公司清产核资专项审计报告》，经审计调整后，该公司资产总额为366152.34元，

第 1 页/共 3 页

负债总额为25317620.62元，净资产总额为-24951468.28元，已严重资不抵债。2022年3月4日，本院根据管理人的申请作出（2021）粤0604破46号之三民事裁定书，裁定确认对破产企业名下位于佛山市禅城区东鄱二街3号101房归买受人成水旺（公民身份号码441823197907043715）、成火新（公民身份号码441823198201203718）所有。2022年4月25日，本院根据管理人的申请作出（2021）粤0604破46号之四民事裁定书，裁定确认对破产企业名下位于佛山市妈庙下街3号702房归买受人王锦儿（公民身份号码440602198511220923）所有。2022年6月22日，本院根据管理人的申请作出（2021）粤0604破46号之五民事裁定书，裁定对佛山市禅城区中兴实业公司管理人于2022年5月16日制作并经债权人会议表决通过的破产财产分配方案予以认可，可供分配财产共计428643.02元，扣除破产费用63491.35元后，可供分配财产365151.67元。管理人现已执行完毕上述破产财产分配方案。

本院认为，本院裁定受理佛山市禅城区中兴实业公司破产清算后，经佛山市禅城区中兴实业公司管理人核查，佛山市禅城区中兴实业公司不能清偿到期债务，资不抵债，本院于2022年1月20日裁定宣告佛山市禅城区中兴实业公司破产。破产清算过程中，佛山市禅城区中兴实业公司破产财产已按照分配方案分配完毕，暂无财产可供债权人分配。管理人依法申请宣告终结破产清算程序，符合法律规定。综上，依照《中华人民共和国企业破产法》第一百二十条第二款、第三款的规定，裁定如下：

第 2 页/共 3 页

Figure A8: An Example on Asset Disposal in Bankruptcy (Continued)

Notes: This figure shows a liquidation case. In this liquidation case, the firm was found to have approximately RMB 370,000 in book asset value at the beginning (see this figure). By conducting an online judicial auction through the Taobao platform (see Appendix Figure A7), the assets were sold at a higher value, increasing the total asset value available for distribution to RMB 430,000.

四、债权调整与受偿方案

（一）偿债资金来源

敦富坊公司偿债资金，来源于三部分：

（1）管理人履职至今接管、取得的货币资金，包括清理敦富坊公司银行账户所得余额、收取的租金，该部分资金总额为 1,034,499.41 元；

（2）重整投资人提供的 1.4 亿元；

（3）管理人追回敦富坊公司的其他财产，包括但不限于管理人追回的敦富坊公司的对外债权等。

以上（1）、（2）两项合计 141,034,499.41 元；第（3）项以管理人实际追回的金额为准。

Figure A9: An Example on Attracting New Investor in Bankruptcy

Notes: This figure shows a reorganization case. In this reorganization case, the firm itself possessed only about RMB 1 million in assets, but by introducing a reorganization investor, an additional RMB 140 million in assets was directly injected for recovery.

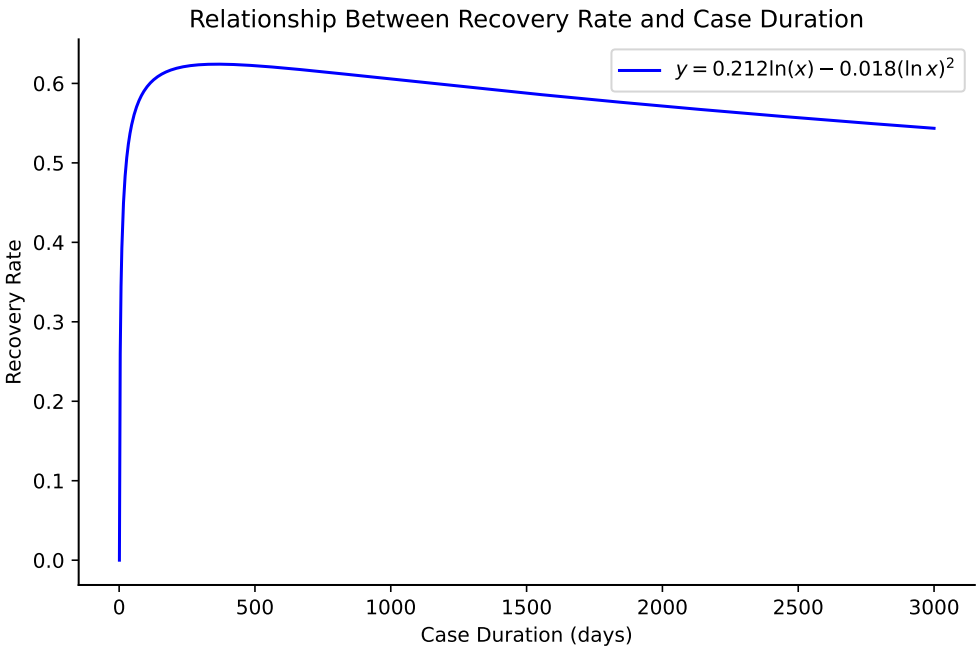


Figure A10: Non-monotonic Relationship between Recovery Rate and Case Duration

Notes: This figure shows the non-monotonic relationship between recovery rate and case duration. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (4) of Table 11. Standard errors are clustered at the city-case year level.

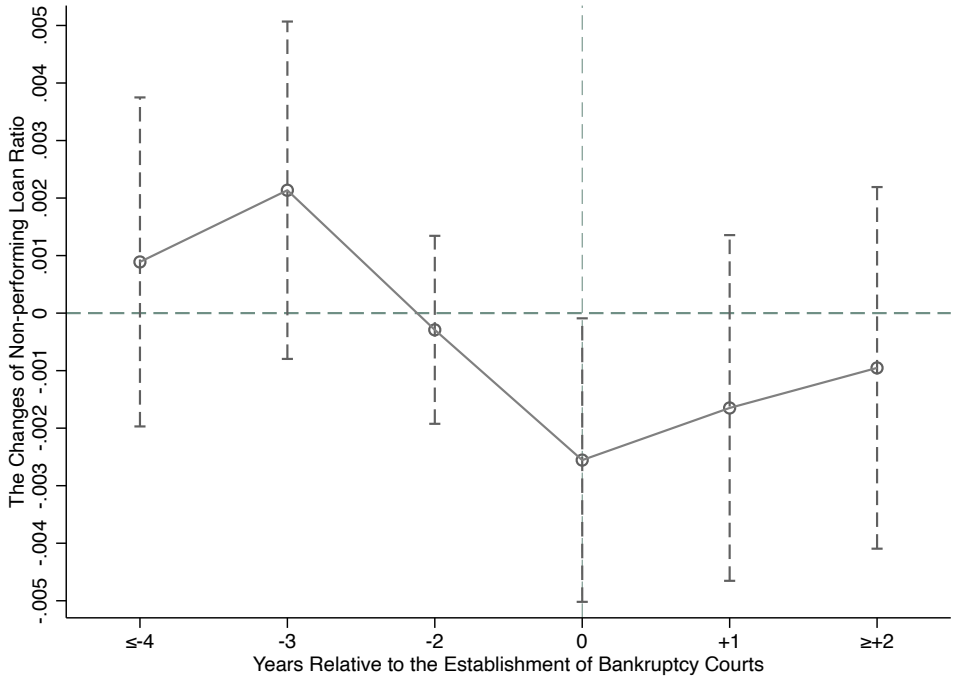


Figure A11: The Dynamic Effects of Bankruptcy Reform on Non-performing Loan Ratio

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on non-performing loan ratio for local commercial banks. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (3) of Table 17. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the bank level.

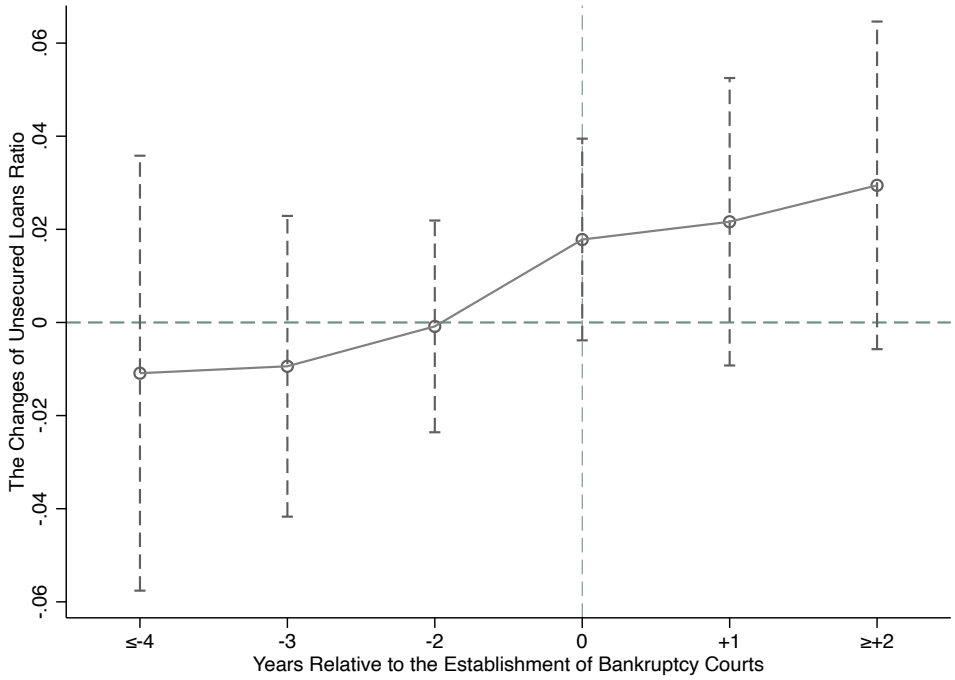


Figure A12: The Dynamic Effects of Bankruptcy Reform on Unsecured Loans Ratio

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on unsecured loans ratio for local commercial banks. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (6) of Table 17. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the bank level.

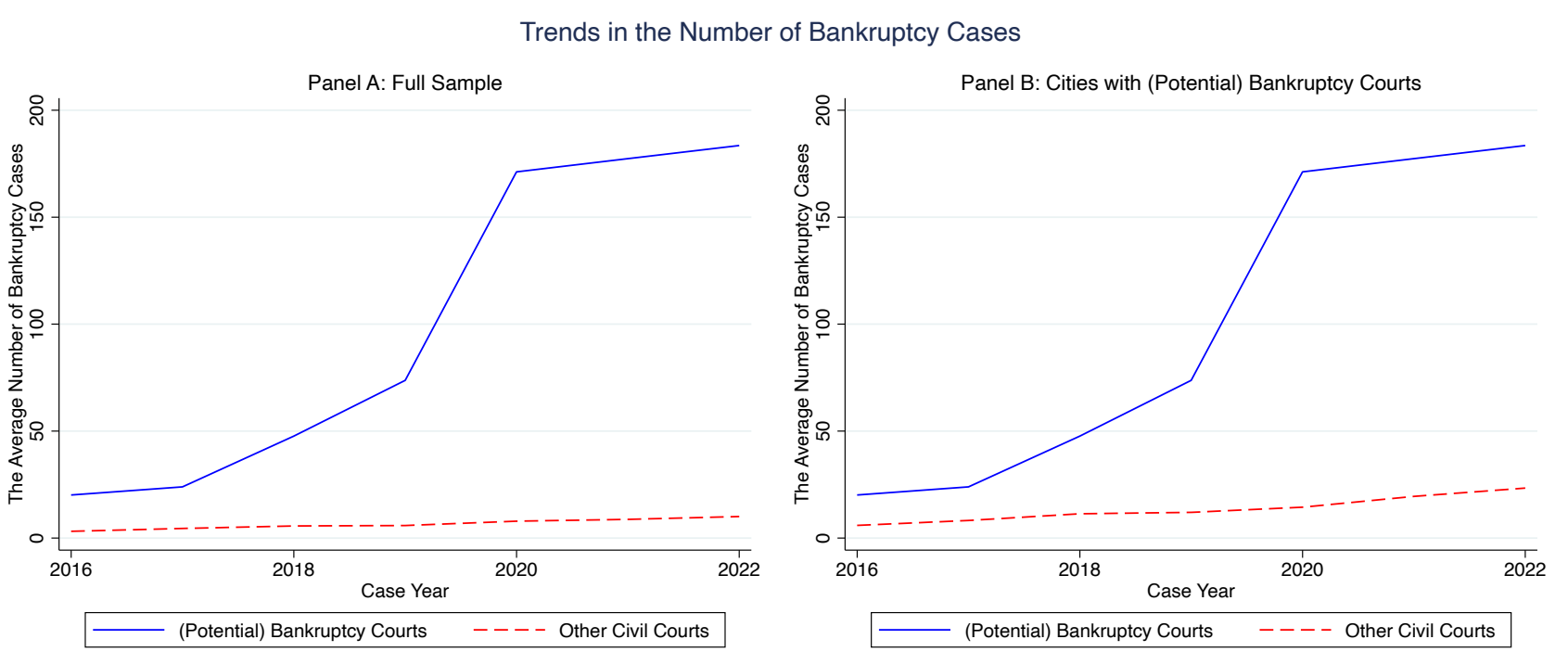


Figure A13: Trends in the Number of Bankruptcy Cases in (Potential) Bankruptcy Courts and Other Civil Courts

Notes: These figures show the dynamic trends in the number of bankruptcy cases in (potential) bankruptcy courts and other civil courts from 2016 to 2024. The data is from the National Corporate Bankruptcy Information Disclosure Platform. In Panel A, other civil courts include all civil courts except for those civil courts that are potential candidates for establishing bankruptcy courts. In Panel B, we restrict the sample to cities that introduced bankruptcy courts. We find that the trends in two figures displayed in both panels are consistent.

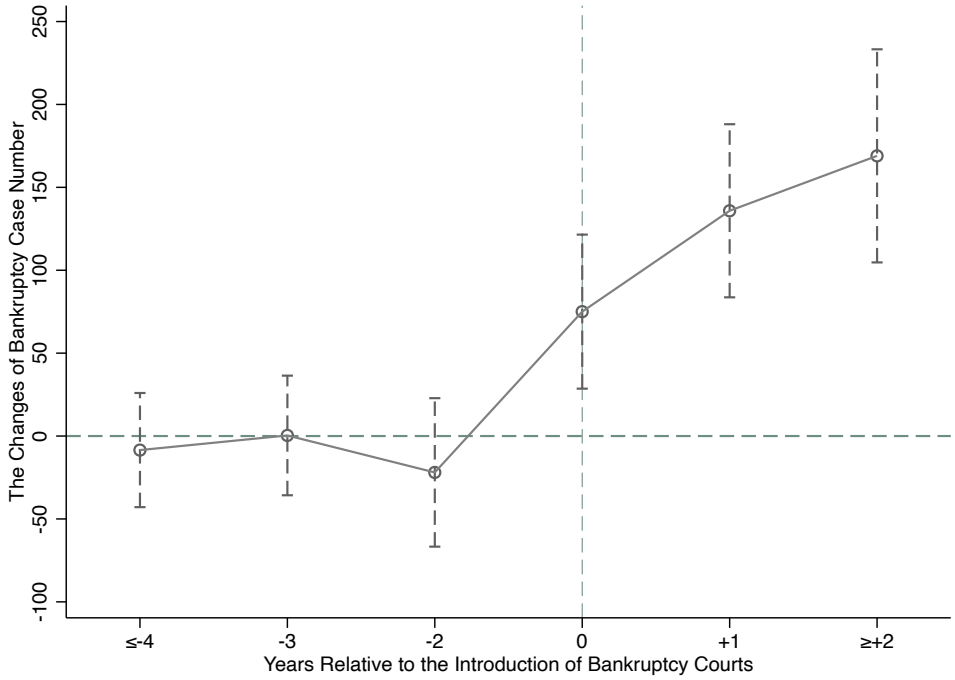


Figure A14: The Dynamic Effects of Bankruptcy Reform on Bankruptcy Case Number

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on the number of bankruptcy cases. The sample period is 2016–2022. The fixed effects are identical to those in Column (3) of Table 19. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

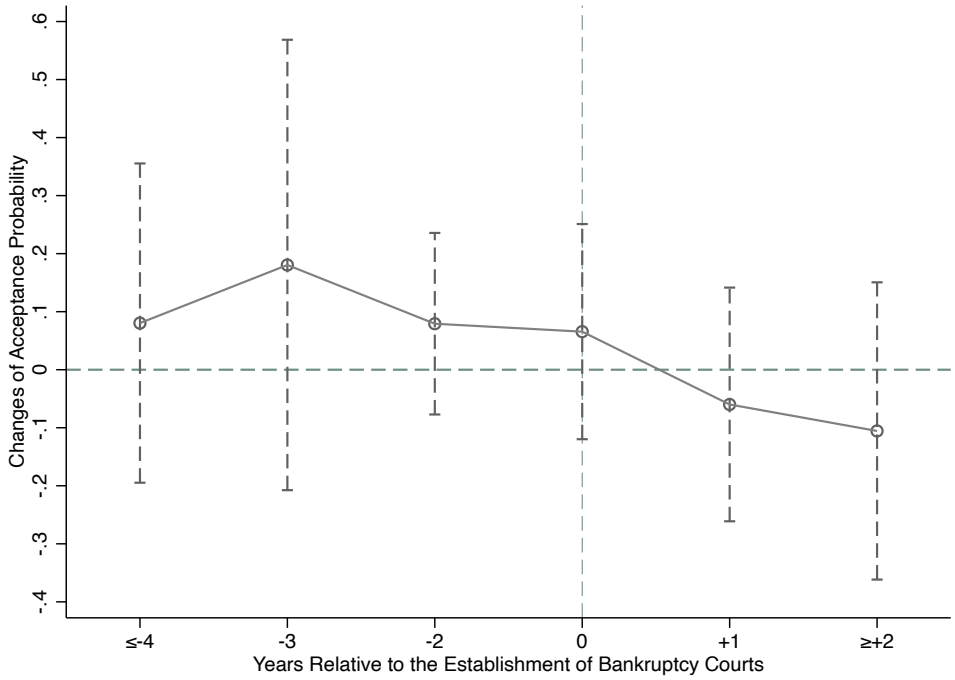


Figure A15: The Dynamic Effects of Bankruptcy Reform on Acceptance Probability

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on the acceptance probability of bankruptcy application. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (4) of Table 20. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

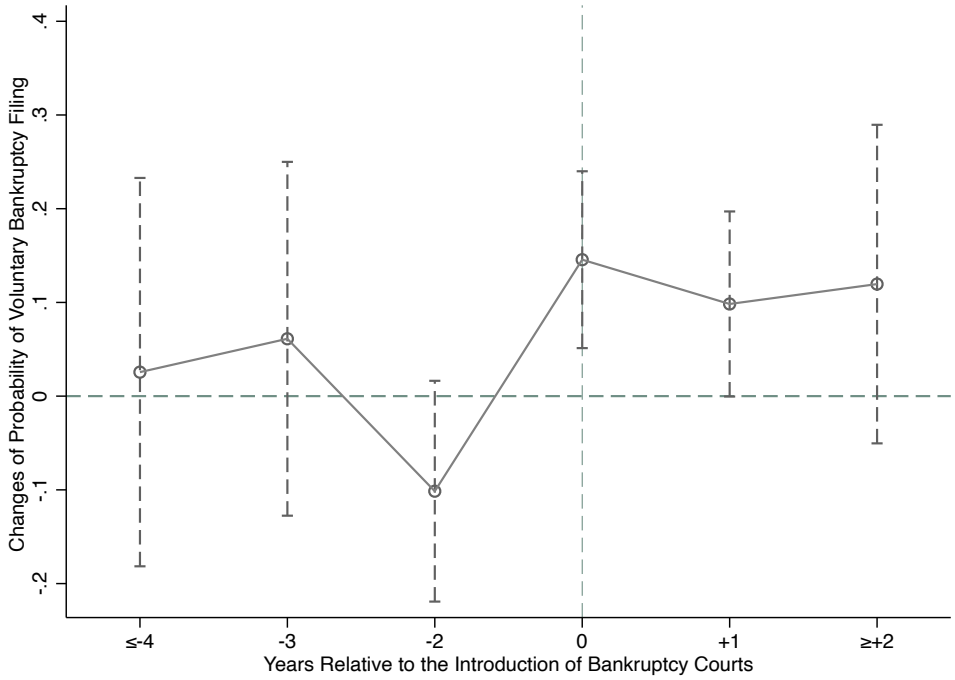


Figure A16: The Dynamic Effects of Bankruptcy Reform on the Probability of Voluntary Bankruptcy Filing

Notes: This figure shows the dynamic effects of the establishment of bankruptcy courts on the probability of voluntary bankruptcy filing by firms. The sample period is 2016–2022. The control variables and fixed effects are identical to those in Column (4) of Table 21. The confidence intervals are at significance levels of 5%. Standard errors are clustered at the city-case year level.

Table A1: The Effect of Bankruptcy Reform on Case Duration (Full Sample)

	Case Duration (Year)		
	(1)	(2)	(3)
Bankruptcy Court	0.079	0.107	0.138
	(0.203)	(0.208)	(0.203)
Ln Firm Age			0.086***
			(0.016)
Ln Registered Capital			0.128***
			(0.007)
Court FE	✓	✓	✓
City × Year FE	✓	✓	✓
Industry × Year FE		✓	✓
Firm Size FE		✓	✓
Observations	16,895	16,849	16,833
R-squared	0.510	0.536	0.559

Notes: This table presents the effect of bankruptcy reform on case duration in a full sample with detailed case duration information. The sample period is 2016–2022. See the text for the description of control variables and the full sample. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A2: The Effect of Bankruptcy Reform on Case Duration by Firm Size (Full Sample)

	Case Duration (Year)			
	Large	Medium	Small	Micro
Bankruptcy Court	-0.901*	1.024**	0.565*	-0.457
	(0.500)	(0.510)	(0.322)	(0.321)
Ln Firm Age	0.257***	0.073**	0.043	0.083***
	(0.060)	(0.034)	(0.026)	(0.027)
Ln Registered Capital	0.076**	0.130***	0.165***	0.117***
	(0.033)	(0.028)	(0.011)	(0.009)
Court FE	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓
Firm Size FE	✓	✓	✓	✓
Observations	1,917	2,784	5,101	5,353
R-squared	0.643	0.627	0.569	0.581

Notes: This table presents the effect of bankruptcy reform on case duration by firm size in a full sample with detailed case duration information. The sample period is 2016–2022. See the text for the description of control variables and the full sample. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A3: The Effect of Bankruptcy Reform on Case Duration by Ownership (Full Sample)

	Case Duration (Year)	
	SOE	POE
Bankruptcy Court	-0.620	0.063
	(0.742)	(0.214)
Ln Firm Age	0.371**	0.096***
	(0.183)	(0.017)
Ln Registered Capital	0.201***	0.125***
	(0.038)	(0.007)
Court FE	✓	✓
City × Year FE	✓	✓
Industry × Year FE	✓	✓
Firm Size FE	✓	✓
Observations	769	15,859
R-squared	0.515	0.569

Notes: This table presents the effect of bankruptcy reform on case duration by firm ownership in a full sample with detailed case duration information. The sample period is 2016–2022. See the text for the description of control variables and the full sample. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A4: The Effect of Bankruptcy Reform on Case Duration by Industry (Full Sample)

	Case Duration (Year)							
	Manufacturing	Wholesale & Retail	Construction	Leasing & Business Services	Sci-Tech Services	Real Estate	IT Services	Other Industries
Bankruptcy Court	0.558*	0.695**	-1.287**	0.623*	-1.277***	-1.767***	-0.776***	0.098
	(0.317)	(0.284)	(0.603)	(0.348)	(0.237)	(0.591)	(0.218)	(0.407)
Ln Firm Age	0.067***	0.071*	0.276***	0.164	-0.112	0.255**	0.089	0.006
	(0.024)	(0.040)	(0.058)	(0.106)	(0.075)	(0.106)	(0.091)	(0.049)
Ln Registered Capital	0.124***	0.116***	0.113***	0.162***	0.117***	0.135***	0.118***	0.129***
	(0.009)	(0.020)	(0.031)	(0.024)	(0.030)	(0.040)	(0.032)	(0.019)
Court FE	✓	✓	✓	✓	✓	✓	✓	✓
City × Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Firm Size FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	7,535	1,991	762	820	735	677	292	1,800
R-squared	0.572	0.626	0.599	0.550	0.400	0.686	0.559	0.602

Notes: This table presents the effect of bankruptcy reform on case duration by industry in a full sample with detailed case duration information. The sample period is 2016–2022. See the text for the description of control variables and the full sample. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A5: The Effect of Bankruptcy Reform on Asset Value Creation

	Value Creation Ratio			
	(1)	(2)	(3)	(4)
Bankruptcy Court	0.212*		0.193*	0.201*
	(0.114)		(0.116)	(0.115)
Bankruptcy Court × Reorganization		0.288**		
		(0.130)		
Bankruptcy Court × Liquidation		0.172		
		(0.117)		
Ln Firm Age	0.025	0.026	0.026	0.028
	(0.033)	(0.033)	(0.032)	(0.032)
Ln Registered Capital	-0.022	-0.022	-0.022	-0.020
	(0.014)	(0.014)	(0.015)	(0.015)
Ln Unsecured Debt	-0.016	-0.017	-0.012	-0.015
	(0.011)	(0.011)	(0.011)	(0.012)
Unsecured Debt Ratio	-0.029	-0.017	-0.047	-0.047
	(0.069)	(0.066)	(0.071)	(0.074)
Ln Case Duration			-0.060**	-0.068**
			(0.025)	(0.029)
Direct Bankruptcy Cost Ratio				-0.073**
				(0.030)
Court FE	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓
Firm Size FE	✓	✓	✓	✓
Observations	747	747	737	674
R-squared	0.324	0.324	0.329	0.349

Notes: This table presents the effect of bankruptcy reform on value creation. The dependent variable is the ratio of final total distributable asset value to the book value of total assets at the time of filing. Compared with Table 14, we do not control for City × Year FE in this table. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city-case year level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A6: The Effect of Bankruptcy Reform on Corporate Financial Behavior (DID)

	$\frac{\text{Short-term Debt}}{\text{Total Asset}}$	$\frac{\text{Long-term Debt}}{\text{Total Asset}}$	$\frac{\text{Interest Expenditure}}{\text{Total Liability}}$	$\frac{\text{Total Liability}}{\text{Total Asset}}$	$\frac{\text{Fixed Investment}}{\text{Operating Revenue}}$
	(1)	(2)	(3)	(4)	(5)
Bankruptcy Court	0.01820***	0.00138	-0.00005	0.02602***	0.00060
	(0.00567)	(0.00202)	(0.00035)	(0.00784)	(0.00126)
Ln Total Asset	-0.01912***	0.00258***	-0.00147***	0.00755**	-0.00088
	(0.00205)	(0.00036)	(0.00024)	(0.00325)	(0.00070)
Ln Firm Age	0.06952***	-0.00415***	0.00065	0.06060***	-0.03004***
	(0.00885)	(0.00122)	(0.00040)	(0.01063)	(0.00258)
Firm FE	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓
Province × Year FE	✓	✓	✓	✓	✓
Observations	2,175,234	2,175,234	999,078	2,246,213	1,525,532
R-squared	0.706	0.665	0.648	0.674	0.407

Notes: This table presents the effect of bankruptcy reform on corporate financial behavior. The sample period is 2016–2022. See the text for the description of control variables. Standard errors reported in parentheses are clustered by city level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.