

Going Bankrupt in China*

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Abstract

This paper investigates how legal reforms affect judicial outcomes and credit markets by studying the introduction of courts specialized in bankruptcy in China. We construct a new case-level dataset on corporate bankruptcy filings and exploit the staggered introduction of specialized courts across Chinese cities. Specialized courts are run by bankruptcy professionals that are less likely to be under the influence of local governments. We find that cases filed in cities that introduced specialized courts are assigned to more experienced, better trained judges, and reach resolution faster. Specialization increases the number of bankruptcy filings and the share of state-owned firms filing for bankruptcy. Cities that introduced specialized courts experienced a decrease in the share of “zombie” firms and an increase in average product of capital of local firms. State-owned firms operating under specialized courts experienced a decrease in the size of new bank loans, lower access to new loans, and lower investment in physical capital. These results have important policy implications in light of the recent increase in insolvency that followed China’s debt boom.

Keywords: Financial distress; Specialized Courts; Zombie firms; Judges; Court efficiency.

JEL Classification: G33, G34, K22.

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1 Introduction

In the last decade, China experienced a massive increase in corporate debt. Several factors have contributed to this debt boom: the stimulus policies of 2009-2010 – which fostered bank credit and promoted local government financing vehicles –, the development of a corporate bond market, the fast growth of shadow banking.¹ Academics and policy makers have raised concerns about the risks associated with the Chinese credit boom and the recent increase in insolvency.² In addition, the Chinese central government expressed concerns about the large number of “zombie” firms – low-productivity and often state-owned companies kept in business by preferential credit lines – and recognized the lack of efficient bankruptcy procedures that could facilitate their liquidation or restructuring. Despite the increasing pressure on the Chinese insolvency resolution system, little is still known about how bankruptcy works in China and the role played by judicial institutions in this process.

This paper aims at closing this gap in the literature by providing evidence on bankruptcy resolution in China. We have two objectives. First, we provide new stylized facts based on case-level data on how firms go bankrupt in China and describe the main legal changes in bankruptcy regulation that occurred in the last decade. Second, we exploit one specific judicial reform – namely, the introduction of courts specialized in bankruptcy – to study the effect of court specialization on insolvency resolution and credit markets.

Until the introduction of specialized courts, bankruptcy cases in China were filed in local civil courts. Similar to other developing countries, Chinese civil courts are characterized by limited expertise in bankruptcy resolution and long delays in processing cases. In addition, Chinese local civil courts tend to operate under the influence of local governments. In particular, local politicians have strong incentives to keep financially distressed state-owned companies alive to contain unemployment, avoid social protests and promote their political careers. Thus, despite since 2007 China has an updated bankruptcy law modeled from those of the US and Europe, the influence of local governments over courts has traditionally prevented a timely and professional resolution of firms in financial distress.

In recent years, the central government has promoted the introduction of new courts specialized in bankruptcy across Chinese cities. These specialized courts are modeled on the US system and run by insolvency professionals, with the objective to decrease the influence of local politicians on the local judicial system and fasten the liquidation of

¹See, among others: Bai, Hsieh, and Song (2016), Cong, Gao, Ponticelli, and Yang (2018), Hachem and Song (2016), Chen, He, and Liu (2017).

²The corporate bond market experienced the first defaults by a privately owned firm in 2014, and by a state-owned firm in 2015, followed by many others (Jin, Wang, and Zhang 2018). Local government financing vehicles started to default on their loans (Gao, Ru, and Tang 2017). According to data from the Chinese Supreme Court, the number of bankruptcy cases filed by Chinese companies increased by more than 50 percent between 2015 and 2016 (Wildau 2016).

inefficient state-owned firms in an economy already characterized by high debt levels.

Our empirical analysis exploits the staggered introduction of specialized courts across Chinese cities to identify their effect on bankruptcy resolution outcomes and corporate credit markets. Specifically, the new courts were introduced at different times in different cities between 2007 and 2017, with most courts being introduced between 2014 and 2017. To this end, we collected data on the precise dates of introduction and location of specialized courts across China. Using a hazard model we show that city observable characteristics – such as trends in local GDP, unemployment and firm growth – do not predict the timing of when cities introduce specialized courts.

In addition, we constructed a new dataset covering 1,285 bankruptcy cases of medium-to-large size, non-publicly listed firms, which were filed in China between 2002 and 2017. We manually extract case-level information from bankruptcy documents. In particular, we extract bankrupt firms’ characteristics such as size and sector of operation, duration of the bankruptcy proceedings, court where each case was filed, judge and trustee identifiers, and bankruptcy outcome (liquidation or reorganization). We then manually collect information on bankruptcy judges from both civil courts and specialized courts, including their education and past experience in bankruptcy cases.

First, we focus our analysis on judicial outcomes. Using case-level data we find that cases filed after the introduction of specialized courts are assigned to judges with higher education – as measured by the probability of graduating from an elite law school – and higher previous experience in bankruptcy resolution. We also find that cases filed in specialized courts have shorter resolution time compared with those filed in civil courts. At the court level, we find that court specialization led to both an increase in bankruptcy filings and an increase in the share of filings by state-owned firms. According to the Supreme Court, specialized courts were introduced to facilitate an orderly liquidation of unproductive state-owned firms and the reallocation of their resources to the rest of the economy. In this sense, our findings are consistent with one of the declared objective of the reform.

Next, we study the effect of specialized courts on the local economy. For this analysis, our unit of observation is a prefecture-level city. We find that cities that introduced specialized courts experienced a decrease in the share of zombie firms relative to cities where bankruptcy cases are still handled by civil courts. Following Caballero, Hoshi, and Kashyap (2008), we define zombie firms as low-productivity firms benefiting from financing conditions that are not justified by their fundamentals, independently from whether they are privately-owned or state-owned. Consistently, we find that cities that introduced specialized courts experienced a larger increase in the average product of capital of firms operating in the local economy.

Finally, we study the implications of specialized courts on credit markets. Two potential effects are at work here. First, a recovery rate effect. Specialized courts can reduce

the time to resolve insolvency, thus better preserving the value of distressed firms. This should translate into higher recovery rate for creditors and thus an increase in banks' incentive to supply capital ex-ante. Second, by reducing political interventions in insolvency resolution, the introduction of specialized courts can increase the probability of liquidating inefficient SOEs. Thus, if loans to SOEs are not perceived as guaranteed by the government anymore, this might decrease banks' incentive to supply them capital ex-ante. Given that these two effects operate in opposite directions for SOEs, in the empirical analysis we are particularly interested in studying the heterogeneous effects of new courts on bank lending to state-owned versus privately-owned firms.

To study the impact of specialized courts on bank lending, we use data from the China Stock Market and Accounting Research (CSMAR) dataset, which covers publicly traded firms. When we focus on new bank credit, we find no effect of court introduction on average size of new bank loans nor on the average probability of getting a new loan for publicly listed firms. However, there are significant heterogeneous effects between SOEs and privately owned firms. In particular, SOEs experience a decrease in size of new bank loans and have lower probability of obtaining a new loan after the introduction of specialized courts. On the other hand, our evidence suggests privately-owned firms might have benefited from the introduction of new courts in terms of access to bank lending, although these effects are not statistically significant. We also study the impact of specialized courts on investment. In particular, we find that new capital investment decreased for SOEs while it increased for private firms. Consistently, we document that privately-owned firms decreased their internal cash holdings to finance new investment, while the opposite is true for SOEs. This is consistent with our finding on the zombie firms at city level: the reduction in zombie firms in cities that introduced specialized courts could have created investment opportunities that were mostly captured by privately-owned firms.

Overall, our findings suggest that court specialization favored the transition from a state-oriented to a market-based bankruptcy regime, at least when it comes to local government influence on insolvency resolution of local SOEs. New courts – which employ more experienced and better trained judges – brought faster resolution of financially distressed SOEs and led local private firms to invest more, thus potentially mitigating resource misallocation in Chinese credit markets.

Related Literature

This paper contributes to both the development literature and the law and finance literatures. The seminal works in the law and finance literature have used cross-country variation, and focused on the role of a country's legal and judicial infrastructure on financial markets (La Porta, Lopez-de Silanes, Shleifer, and Vishny 1997, La Porta, Lopez-de Silanes, Shleifer, and Vishny 1998; Djankov, Hart, McLiesh, and Shleifer 2008; Claessens

and Klapper 2005; Safavian and Sharma 2007). More recent work has used micro-data and within-country variation to study the effect of specialization and efficiency of judicial enforcement on both financial and real outcomes (Visaria 2009, Ponticelli and Alencar 2016, Rodano, Serrano-Velarde, and Tarantino 2011), or the effect of specific legal reforms that target creditor rights on bank lending decisions (Vig 2013). Our paper is related to the latter strand of this literature, which focuses on micro data and within-country variation. Our main contribution in this sense is twofold. First, we offer the first evidence on the role of judicial institutions in bankruptcy resolution in the context of China. This has important policy implications given Chinese recent credit boom and the stress under which its insolvency system might be in the near future. Second, and differently from most of the previous literature, we offer evidence based on case-level data on bankruptcies filed in Chinese courts, which allows us to better identify the channel through which institutional changes can affect credit and real outcomes.

The rest of the paper is organized as follows: Section 2 describes the institutional background of recent bankruptcy reforms introduced in China in the last decade, Section 3 describes the main data sources used in the paper and presents a set of basic stylized facts. Finally, Section 4 presents the identification strategy and describes the empirical results.

2 Institutional Setting: Bankruptcy in China

Weak protection of creditor rights is considered a major obstacle to financial market development in China.³ In the last decade, China experienced two major changes of its bankruptcy proceedings. First, a new bankruptcy law was introduced in 2007 with the objective of strengthening the protection of both domestic and foreign creditors. This reform had only limited impact on creditors' recovery, in part due to lengthy court proceedings, bureaucratic procedures involved, lack of judicial specialization and political influence in insolvency resolution. After 2007, Chinese cities started introducing courts specialized in bankruptcy proceedings. In this section we describe these two changes to bankruptcy proceedings in China in more detail.

2.1 Bankruptcy Law

The 1986 Republic of China Bankruptcy Law was introduced to address insolvency of state-owned enterprises (SOEs), given the prominence of SOEs in the Chinese economy at the time.⁴ Essentially, the 1986 bankruptcy law focused on the following issues that

³During the period 1983-2002, China has scored 2 out of 4 in the creditor rights index proposed by La Porta et al. (1997, 1998).

⁴Chapter 19 of the Civil Procedure Law introduced in 1991 dealt with insolvency of non-SOEs. In addition, some local governments had their specific bankruptcy regulations (e.g. "Shenzhen Special Eco-

could have emerged from large SOEs going out of business: the protection of workers, the prevention of social protests, and the maintenance of social stability. The text of the old bankruptcy law states that secured creditors have first priority in the order of repayment, followed by workers, tax claims and general unsecured creditors (art. 32). However, during the 1990s, the State Council issued two decrees specifying that payment of resettlement costs and other benefits for employees of bankrupt SOEs had priority over secured creditors (Booth 2008).⁵ These deviations from the wording of the 1986 bankruptcy law made the Chinese bankruptcy regime particularly unfriendly to secured creditor, prioritizing government interests and workers' claims.

In the 2000s China experienced an economic boom driven, among other factors, by a more market-oriented economy, foreign direct investments and an increase in exports following the entry in the WTO. One of the legal reforms requested to join the World Trade Organization was a new bankruptcy law to protect secured creditor rights. The goal of the WTO members was to bring Chinese bankruptcy law up to international standards, and to ensure that creditors were sufficiently protected, especially when it came to foreign firms operating in China. In 2006, the National People's Congress approved a new bankruptcy law, which drew on regulations and judicial experiences of the United States and Europe. The new law entered into force in June of 2007, replacing the 1986 law and all other local insolvency legislations, and providing a unique legal insolvency framework for China.⁶

The 2007 bankruptcy law brought important changes in creditor rights' protection. First, secured creditors are given priority over any workers' claims, and should be repaid with the specific property used as collateral (Art. 109).⁷ Secured claims are followed by: general expenses of bankruptcy proceedings, workers' claims, tax claims and general unsecured claims such as suppliers (Art. 113). Second, the new law introduces a new reorganization procedure (Chapter 8), which resembles Chapter 11 of the United States Bankruptcy Code, where creditors hold meetings with the debtor and have the right to review and approve a reorganization plan. In addition, the 2007 bankruptcy reform attempted to lay out unified rules regardless of government ownership for mandatory liquidation to protect creditors if a firm is in severe distress and the bankruptcy proceedings

conomic Zone Enterprise Bankruptcy Regulations". See Booth (2008) for a detailed description of the legal landscape before the introduction of the 2007 Bankruptcy Law.

⁵These decrees took the form of "Notices". In particular, the 1994 Notice specified that the proceedings obtained from selling the land use rights of bankrupt SOEs should be used to cover the resettlement costs of employees. The 1997 Notice clarified that these payments to employees would take priority over secured creditors. If land use rights' sale was not sufficient to cover resettlement costs, these costs would be financed by auctioning firm property (whether secured or unsecured) and, if not sufficient, directly paid by the government at the same level of the bankrupt SOE (Booth 2008).

⁶The drafting of the Chinese bankruptcy law started in 1994; the draft was amended and revised several times until its final approval in 2006. See Booth (2008) for a detailed description of the drafting process of the new law.

⁷One exception are workers' claims filed *before* the introduction of the new law, which are granted special status and received priority over secured claims (Art.132).

become too lengthy.⁸ However, although the new law applies in principle to both SOE and non-SOEs, after its introduction the Chinese Government continued to have a parallel administrative track to deal with the largest SOEs.⁹

Despite the substantial changes in legal rules, the evidence suggests that the 2007 bankruptcy law had a limited impact. According to bankruptcy practitioners consulted for the World Bank Doing Business Database, the recovery rate of secured creditors in Shanghai increased only modestly – from 31.6 percent in the 2004-2007 period to 35.7 percent in the 2008-2011 period (no data is available for other regions). According to data from the Supreme Court of China, the total number of bankruptcy cases accepted by Chinese courts remained relatively low after the passage of the law (Figure 1). According to a recent report by the International Association of Restructuring, Insolvency and Bankruptcy Professionals (INSOL 2018), the low acceptance rate of bankruptcy cases by Chinese courts was due, among other factors, to the limited understanding of the new law by non-specialized courts and by a performance evaluation system of judges which does not weight the additional complexity of bankruptcy cases. In addition, Chinese firms in financial distress need to obtain the “consent” of the local government to start an official bankruptcy procedure (Fan, Huang, and Zhu 2013), and local governments try to avoid formal bankruptcy as they have to bear the financial and social costs associated with resettling employees, especially when it comes to SOEs (INSOL 2018).

[Figure 1 here]

Thus, even after the introduction of the new law, secured creditors had – in practice – limited ability to claim assets whenever local governments had strong interests in keeping firms in financial distress alive. The lengthy procedures and the influence of local governments on civil courts reduced firms’ incentive to file for bankruptcy at an early stage, with additional adverse effects on recovery rates. Consequently, even after the introduction of the new bankruptcy law, the judicial system remained largely ineffective in handling bankruptcy cases.

2.2 Bankruptcy Courts

Starting in 2007, a few Chinese cities started introducing courts specialized in bankruptcy cases. In November 2014, the Supreme Court formulated recommendations to introduce courts specialized in bankruptcy and provided official guidelines for such introduction. In the two years after the Supreme Court guidelines – between December 2014 and May 2016

⁸When the likelihood of survival is low, judges can bypass the reorganization procedure completely and move to liquidation directly. This was supposed to shorten bankruptcy proceedings and guarantee higher recovery to creditors’ claim on non-viable firms.

⁹For example, even after the introduction of the new law, the Government often deals with large SOEs’ bankruptcies using the State-Owned Assets Supervision and Administration Commission.

– a second phase of introduction of specialized courts took place, including the following jurisdictions: Beijing, Shanghai, Tianjin; Hebei, Jilin, Jiangsu, Zhejiang, Anhui, Hubei, Hunan, Guangdong. Finally, in June 2016, a third phase was started when the Supreme Court formally required all provinces to have at least one court specialized in bankruptcy cases. As of December 2017, there are 97 specialized courts across China and in almost all Chinese provinces there is at least one of such courts.¹⁰ From the perspective of the central government, promoting the introduction of specialized courts was a way to deal with “zombie” enterprises. Specialized courts could facilitate the liquidation and restructuring of inefficient firms – especially SOEs – through which indirectly restore the soundness of the banking sector characterized by a growing amounts of non-performing loans.¹¹

The specialized courts brought fundamental changes to the judicial system in China, favoring the transition from a state-oriented to a market-based bankruptcy regime. In the old regime, bankruptcy cases were dealt with by civil courts, characterized by judges with limited expertise in insolvency resolution and local government involvement in shaping bankruptcy outcomes. The introduction of specialized courts modified the old regime in several ways. First, as we show in this paper, judges presiding over bankruptcy cases in specialized courts tend to have more experience in insolvency and a higher level of education. Second, specialized courts tend to name bankruptcy administrators and professional trustees that are less likely to be influenced by local governments. The trustee is selected via either a random draw or a competitive bidding out of a rotating panel of qualified trustees with specific industry expertise. If qualified trustees can not be found locally, judges can select them from other regions. This alleviates the concern that the trustee have political connections with the local government. In addition, specialized courts simplify the procedure for debtors to file for bankruptcy and facilitate creditor votes in remote area. This alleviated creditor coordination problems that existed under civil courts and facilitates an orderly bankruptcy process by protecting both secured and unsecured creditors

Better trained judges, more independent trustees and higher coordination among creditors are important safeguards over government influence in bankruptcy resolution. For example, creditor committee may vote against any proposal by the government merely seeking to keep the firm alive for political reasons, which could have adverse effects on firm value.

¹⁰The Guizhou province, Tibet autonomous region and Ningxia Hui autonomous region have not yet established courts specialized in bankruptcy. The 97 specialized courts include 3 higher people court, 63 intermediate courts, and 31 people’s courts (INSOL 2018).

¹¹The financial effort to maintain SOEs in operation can be extremely high, as it demands continuous ever-greening of bank loans and further intensifies the local government deficits. The steel industry is the standard example of a sector populated by zombie firms – as intended in Caballero et al. (2008)) – where banks continue to extend credit to otherwise insolvent borrowers. Within the eight large and mid-size steel companies, the average leverage ratio is 90%, and the total losses in 2007 accounted for 24.3 billion Yuan with interest expenses of 9.2 billion Yuan.

3 Data and Stylized Facts

In the empirical analysis we use the following datasets: data with location and introduction dates of courts specialized in bankruptcy across Chinese cities, case-level data on bankruptcy outcomes, judge-level data on experience and education, city-level data on firm output and capital stock, and firm-level data from the China Stock Market and Accounting Research Database (CSMAR). In this section we describe these datasets in more detail.

Introduction dates and locations of specialized courts were obtained from the Ministry of Justice and the Supreme Court. To validate the introduction dates, we conducted several rounds of interviews with Supreme Court judges, local court judges, trustees, lawyers, and accountants that were involved in major bankruptcy cases.

Figure 2 shows the number of cities introducing their first specialized court by quarter in China. For each city, we use the earliest introduction date of a specialized court as the official implementation date in our sample. As shown, some Chinese cities introduced their first specialized courts right after the bankruptcy reform of 2007, but the majority of cities introduced specialized courts after the official guidelines of the Supreme Court in 2014. We observe an average of five cities introducing their first specialized court every quarter in the years 2015, 2016 and 2017. As of December 2017, there was at least one specialized court in almost all Chinese provinces.

Based on our interviews and discussions with specialized court judges, the timing of introduction of specialized courts was largely unexpected even for local practitioners and often occurred upon sudden bankruptcies of a large firm. According to the interviewees, the decision to introduce specialized courts reflected more the political will of local government officials in need of specialized judges for large cases capturing media attention rather than the answer to a local generalized increase in bankruptcy cases. We will test this more formally in the next section.

[Figure 2 here]

The case-level data on bankruptcy filings covers cases filed in local courts – both civil courts and specialized courts – between 2002 and 2017 across various jurisdictions. The dataset covers bankruptcies of non-publicly listed firms only.¹² The data provides the full-text of bankruptcy documents from the initial filing to the case closing date. Our sample consists of 1,285 cases, including both reorganizations and liquidations. In aggregate, both civil and specialized courts accepted an increasing number of bankruptcy cases starting

¹²There is only a limited number of publicly listed firms that went bankrupt during the last decade in China. Our sample consists of major corporate bankruptcies for firms that were not listed on Shanghai or Shenzhen stock exchange, as well as a wide coverage of small, medium, and large firms.

from 2012. We observe a substantial increase in bankruptcy filings from 2014 to 2017.¹³ A large number of these bankruptcy filings involve small firms with virtually no assets that can be used to repay creditors. These cases tend to be closed shortly after filing with no payments to creditors. Notice that these cases are not recorded in our data, which instead only focuses on corporate bankruptcies of companies with “some” assets at filing.

We manually coded case information from bankruptcy documents, which are usually compiled by the trustees. Most of these documents have incomplete information on asset value, liabilities, recovery rate, number of creditors, value of claims. We fill some of the missing information by directly contacting the trustees that were in charge of each case. Information on firm characteristics is collected from the bankruptcy filings and – for pre-bankruptcy financial information – from the local business bureau. To the best of our knowledge, and despite its limitations, this is the first case-level database on corporate bankruptcy in China, and it allows us to track the evolution of bankruptcy cases from initiation to closing (the duration of proceedings), as well as to observe a rich set of creditor and debtor characteristics, judges and trustee’s names, and the case outcome.

We complement this dataset with additional information on judges’ experience and education. Judges’ experience in insolvency is measured by the number of bankruptcy cases the judge handled before the current case according to the China Judgment Online dataset.¹⁴ As for judges’ education, we use the CNKI dataset to check from which school each judge received its master degree. We code a judge as having a master from an “elite” law school if we find exactly one master thesis under its name at Project 985 universities or 5 top professional law schools.¹⁵

We use the case-level data to provide basic stylized facts on bankruptcy outcomes and shed some light on how firms go bankrupt in China. Figure 3 shows the geographical distribution of bankruptcy cases across Chinese cities in our sample. As expected, Coastal cities display higher number of cases with respect to those located in the interior as they have higher concentration of industrial activities.

[Figure 3 here]

Figure 4 shows the distribution of bankruptcy cases in our sample by sector of operation of the firm filing for bankruptcy. As shown, the majority of cases in our sample are concentrated in manufacturing, followed by services and construction.

¹³According to the statistics release by the Supreme court in March 2018, the number of cases accepted was 1,521 in 2012, 1,919 in 2013, 2,031 in 2014, 3,568 in 2015, 5,665 in 2016, 9,542 in 2017 with an average growth rate of 47%. The number of cases closed also experienced an increasing trend: 1,521 in 2012, 1,919 in 2013, 2,031 in 2014, 3,568 in 2015, 5,665 in 2016, and 6,257 in 2017 at an average growth rate of 28%.

¹⁴Note that the China Judgment Online dataset has good coverage of all cases in Chinese courts only starting from 2014, somewhat limiting this variable to relatively recent experience in insolvency.

¹⁵Top professional law schools include: CUPL, SWUPL, ZUEL, NWUPL, and ECUPL.

[Figure 4 here]

Beside the impact of judicial reforms on bankruptcy outcomes, we further study the effect of specialized courts on credit markets. To investigate the ex-ante effects of specialized courts on the magnitude of bank loans and terms of debt contracts at origination, we use firm-level data from the China Stock Market and Accounting Research Database (CSMAR) dataset.¹⁶ Thus, This dataset is constructed from quarterly company reports and covers publicly listed firms. Data includes information on: loan amount, maturity, as well as ownership structure and capital investment. We match firms to cities based on the headquarter location of public firms contained in the WIND China dataset.¹⁷

The CSMAR data is at quarterly frequency and runs from the first quarter of 2005 to the first quarter of 2018, thus spanning the period in which specialized courts were introduced across the vast majority of Chinese cities. We further require that firms do not have missing information on financial statements and ownership structure.

Table 1 shows the summary statistics for all the dependent and independent variables used in the empirical analysis.

[Table 1 here]

4 Empirics

4.1 Identification Strategy

In this section we present the main estimating equations used to study the effect of specialized courts on our outcomes of interest. For identification purposes, we exploit the staggered introduction of courts specialized in bankruptcy across Chinese cities. We estimate our baseline specification at different levels: case-level, court-level, city-level and firm-level. In this section, let us discuss our baseline specification at firm-level, we then explain the specific version of this equation that we estimate at each level when presenting the results. The baseline equation at firm-level is as follows:

$$y_{icjt} = \alpha_c + \alpha_j + \alpha_t + \beta(\text{AfterSpecialCourt})_{ct} + \varepsilon_{icjt} \quad (1)$$

¹⁶Ideally, we would like to use data on bank lending and interest rate paid by non-publicly listed firms operating under different jurisdictions for the period under study. However: the Chinese manufacturing survey has no information on bank loans or interest rates, and ends in 2013, while the Chinese Banking Regulatory Commission data on bank loans used, among others, in Cong et al. (2018), covers lending to non-publicly listed companies but only covers loans originated up to 2013.

¹⁷One unique feature of our setting is that the bankruptcy procedures are less subject to judicial discretion from judges as in the United States (e.g., Bris, Welch, and Zhu (2006), Gennaioli and Rossi (2010)). In fact, the law prevents forum shopping and has binding legal restrictions on the jurisdiction where a firm can file. According to the 2007 Chinese bankruptcy law, firms can only file for bankruptcy in the jurisdiction where their main business is located.

Where i indexes a firm, c indexes the city in which the firm is headquartered, j indexes the sector in which the firm operates and t indexes quarters. The variable $(AfterSpecialCourt)_{ct}$ is a dummy equal to one in the period in which the first specialized court was introduced in a given city and for all the periods thereafter, and zero otherwise. That is, firms located in cities where the variable $(AfterSpecialCourt)_{ct}$ is equal to 1 operate in an environment where specialized bankruptcy courts tend to handle the distress resolution process.¹⁸ Firms located in cities where $(AfterSpecialCourt)_{st}$ is equal to 0 operate in an environment where bankruptcy cases are still settled by local civil courts. Thus, in each quarter t , the treatment group is composed by firms in cities that have at least one court specialized in bankruptcy in operation as of time t , while the control group is composed by firms in cities where the introduction of specialized courts happened after time t . In the baseline specification we control for city, industry and time fixed effects, and standard errors are clustered at the city-industry level.

The main concern with this identification strategy is that the timing and location of the introduction of specialized courts could be predicted by local economic conditions that are also correlated with the outcomes of interest. For example, specialized courts might be introduced in cities that are experiencing negative economic shocks and therefore are in need of such courts in order to deal with an increasing number of insolvencies among local firms. This type of correlation would generate a negative relationship between introduction of specialized courts and bank lending. Alternatively, specialized courts might be introduced first in provinces where politicians can “afford” to be stricter with inefficient SOEs or zombie firms because the local economy is growing fast and can absorb eventual layoffs. This type of correlation would instead generate a positive relationship between introduction of specialized courts and bank lending.

To explore the extent of this concern, in Table 2 we estimate a discrete time hazard model to test whether differences in economic performance at city level predict the timing of introduction of specialized courts. We measure economic performance as the contemporaneous and lagged growth in Gross Regional Product (GRP) per capita, official unemployment rate, number of firms, and average firm size. We also test whether levels of economic development (GRP per capita), industrialization (share of manufacturing in local GRP), and city size (population) predict introduction of new courts. As shown, contemporaneous and lagged changes in measures of local economic performance do not predict the timing of court introduction. We do find that the levels of GRP and population have some predictive power. Therefore, in the empirical analysis, we show that our results are robust to adding these controls at city-level in all specifications.

[Table 2 here]

¹⁸The data indicates that not all bankruptcy cases filed after the introduction of the first specialized court in a given city are filed with that court.

4.2 Judicial Outcomes

In this section we study the effect of the introduction of specialized courts on judicial outcomes using case-level data. We start by presenting some basic stylized facts on case and judge characteristics in Table 3. Panel A compares the average time in court for cases in our sample that started before vs after the introduction of specialized courts in each city. Additionally, the table splits cases into those regarding SOEs and those regarding privately owned firms. As shown, the average length of bankruptcy cases decreased from 764 days to 497 days after the introduction of specialized courts. The decrease in time in court is largest for cases regarding SOEs, which took on average 1331 days when filed in civil courts, while 510 days when filed in specialized courts. This is roughly similar to the time in court for privately owned firms after the introduction of specialized courts, suggesting the two types of cases are now dealt in a similar fashion by judges.

In Panel B we focus on judges' education as captured by the share of judges with a master from an "elite" school. As discussed in section 3 we consider as elite schools the Project 985 universities and the top-5 professional law schools. Summary statistics reported in Panel B show that the share of judges with elite education increased by 2 percentage points, from 21.6 to 23.7 percent after the introduction of specialized courts. Importantly, the change in judge education level is concentrated in the chief judge of each case: the share of chief judges with elite education increases from 20 percent to 32.9 percent. Although each bankruptcy case is assigned 3 judges, it is the chief judge that takes the important decisions on the case, including the selection of the trustee, while the two other judges are usually in charge of the more administrative tasks of the case.

Finally, in Panel C we focus on judge's previous experience in insolvency resolution.¹⁹ The data shows that judges in charge of bankruptcy cases after the introduction of specialized courts have dealt on average with around 2.2 more bankruptcy case in the past relative to judges in charge before the introduction of specialized courts.

[Table 3 here]

After presenting summary statistics on the raw data, we study the effect of specialized courts on judicial outcomes more formally using a specification similar to equation (1). We start by focusing on judge education and experience in bankruptcy proceedings. The results are reported in Table 4. Our unit of observation in this regression is a case-judge.²⁰ The outcome variable in columns (1) and (2) is a dummy equal to one if the judge has a master degree from an elite school (as defined above), while $I(\text{After Special Court})$ is a dummy equal to one in period after a given court becomes specialized and zero otherwise. In all specifications we control for city and quarter fixed effects, as well as

¹⁹Data on total number of bankruptcy cases assigned to a given judge is only available starting from 2014, and thus captures only relatively recent experience.

²⁰As discussed above, there are (usually) three judges assigned to each case recorded in our dataset.

a large set of city-level observable characteristics. The results indicate that judges dealing with bankruptcy cases are 12.6 percent more likely to be from an elite school after the introduction of specialized courts. Columns (3) to (6) also show that bankruptcy cases tend to be assigned to judges with significantly higher past experience in such cases after the introduction of specialized courts.

[Table 4 here]

We then focus on the effect of the introduction of specialized courts on time in court to resolve insolvency. Time in court is measured in days from the date in which the case is accepted by the court to the date in which insolvency is resolved, either by confirmation of the reorganization plan or by liquidation of the company. The results are reported in Table 5. Our unit of observation in this regression is a case. In addition to city-level characteristics, in this specification we also add case level characteristics that might influence the length of the case such as a categorical variable capturing the size-category of the firm going bankrupt (in number of employees), the sector in which the firm operates, whether the case is a reorganization or a liquidation, and whether the company filing is privately-owned or a state-owned firm. The estimated coefficients presented in columns (1) and (2) show that with the introduction of specialized court the average case length decreased by approximately 100 to 120 days, which correspond to around 21 percent of the average case length in our sample. In column (3) we test whether this effect is heterogeneous for SOEs vs private firms. Despite the summary statistics presented in Table 3 suggest that these effects are heterogeneous, we do not find statistically significant differences once accounting for city and time fixed effects as well as controlling for firm size, sector and type of insolvency.

[Table 5 here]

Finally, we study the effect of the introduction of specialized court on the number of bankruptcy filings and the type of firms filing for bankruptcy. To this end, we estimate an equation similar to equation (1) at court-level. The results are reported in Table 6 and show two main findings. First, courts that become specialized experience a statistically significant increase in the number of bankruptcy cases filed. This result holds also when controlling for city fixed effects – effectively comparing specialized to non-specialized courts within a city – as well as for time-varying city characteristics. Second, we find a statistically significant increase in the share of bankruptcy cases regarding state-owned firms after courts become specialized. The magnitude of the estimated coefficient indicates that courts that became specialized had a 9.4 percentage points larger share of SOE bankruptcy filings relative to courts that did not. One potential interpretation of this result is that creditors are more likely to bring insolvent SOEs to court when such courts

are managed by experienced and well-trained judges as well as bankruptcy professionals that are less likely to be under the influence of local governments.

[Table 6 here]

4.3 City-level Outcomes: Productivity and Zombie Firms

In section 4.2 we showed that the introduction of specialized courts increased the share of judges with experience in insolvency and trained in elite schools, reduced the average time in court for bankruptcy cases, increase bankruptcy filings and increased the share of cases regarding SOEs. In this section we study whether specialized courts had an impact on the local economy as captured by city-level outcomes. In particular, we focus on three outcomes: the total number of firms operating in a city, the average capital productivity of those firms, and the share of “zombie” firms. The first two outcomes are sourced from the China Statistical Yearbook and cover all firms, both private and publicly-traded, the third outcome instead can only be constructed using publicly traded firms.

We start by estimating an equation similar to equation (1) but exploiting city-level variation. The coefficient of interest is the one on $I(\text{After Special Court})$, which is a dummy equal to one in the period in which the first specialized court was introduced in a given city and for all the periods thereafter, and zero otherwise. In all specifications we control for city and quarter fixed effects, as well as a large set of city-level observable characteristics. The results are reported in Table 7. The outcome in column (1) is the log of the total number of firms registered in a given city. The estimated coefficient is negative but we find no significant effect of specialized courts on total number of firms. In column (2) we study the effect of specialized court on average capital productivity. We construct the average product of capital as the log of the ratio of value of output divided by book value of capital (as measured by tangible assets). Notice that our data reports the aggregate value of these two variables at city-level, so that the city-level measure of average product of capital should be interpreted as a weighted average of capital productivity. As shown, we find that cities that introduce courts specialized in bankruptcy experience a 8 percent higher average product of capital of local firms relative to cities where insolvency is still resolved by civil courts. The magnitude of the coefficient correspond to 15 percent of a standard deviation in the outcome variable. This result is consistent with specialized courts fostering a faster exit of low-productivity – often state-owned and large – firms, which has a positive effect on the average productivity of surviving firms.

Finally, we study the effect of specialized courts on the share of zombie (publicly-listed) firms headquartered in a given city. We define “zombie” firms following Caballero et al. (2008). More specifically, we define a firm as zombie if two conditions are met. First, the firm borrows at an interest rate that is 0.25 percentage points lower than the hypothetical minimum interest rate it should pay given its debt structure. To construct

the hypothetical minimum we use the minimum benchmark rate for each maturity class set by the Central Bank of China (PBC) along with the amount of debt in each maturity class in the firm’s balance sheet. The second condition is that the firm’s productivity – as captured by Total Factor Productivity (TFP) – is below the median in its sector. Notice that both conditions need to be met for a firm to be defined as zombie. We do not impose that all SOEs are zombie firms, although the correlation between the share of SOEs and the share of zombie firms at city level is quite high (0.72).

The results are reported in column (3) of Table 7, where the outcome variable is the share of zombie firms in operation in a given city in a given quarter. As shown, the estimated coefficient is negative and significant, indicating that zombie firms operating under a specialized bankruptcy court are less likely to be in operation relative to those operating in cities that still do not have a specialized court. The magnitude of the estimated coefficient indicates that cities that introduce courts specialized in bankruptcy experience a 2.2 percent larger decrease in the share of local zombie firms relative to cities where insolvency is still resolved by civil courts. Notice that the average share of zombie firms among publicly listed firms across cities in our sample is 12 percent, so the effect documented in column (3) corresponds to 18.6 percent of the mean.

Overall, the results presented in Table 7 are consistent with the idea that, under local civil courts, low-productivity and state-connected firms were less likely to be liquidated. In the new regime, instead, local governments have less discretion on bankruptcy cases and low-productivity and state-connected firms are more likely to be liquidated once in financial distress.

[Table 7 here]

4.4 Firm-level Outcomes: Loan Size, Access to New Loans, and Investment

In sections 4.2 and 4.3 we showed that the introduction of specialized courts induced an increase in liquidation of SOEs, higher average capital productivity among local firms and lower survival probability of low-productivity zombie firms. In this section we study whether the introduction of specialized courts had an impact on credit markets. On the one hand, specialized courts put insolvency resolution in the hands of professionals and make enforcement faster and more efficient for all firms, potentially increasing creditors’ recovery rate. On the other, by decreasing political pressure from local governments to keep SOEs in business, the introduction of such courts could have lowered the incentive to extend credit to state-owned companies. Consequently, we expect the effect of specialized courts to be heterogeneous for state-owned versus private firms.

Thus, in this section we estimate the heterogeneous effects of the introduction of specialized courts on lending and investment between SOEs and private firms. As state-

owned firms tend to be more likely to receive local government protection, especially when cases are filed in local civil courts, this analysis can help to shed some light on the effect of political influence in the judiciary on economic outcomes. To estimate these heterogeneous effects, we add an interaction term to equation (1) and estimate the following equation:

$$\begin{aligned}
 y_{icjt} &= \alpha_i + \alpha_c + \alpha_j + \alpha_t + \beta_1 1(AfterSpecialCourt)_{ct} \times I(SOE)_{icjt} \\
 &+ \beta_2 1(AfterSpecialCourt)_{ct} + \beta_3 I(SOE)_{icjt} + \varepsilon_{icjt}
 \end{aligned} \tag{2}$$

The variable $I(SOE)_{icjt}$ in equation (2) is a dummy equal to 1 if the firm is state-owned. The coefficient of interest in this specification is β_1 , which captures the differential effect of specialized courts on SOEs relative to private firms. We also add to all specification an interaction of province and quarter fixed effects in order to flexibly account for differential economic performance across Chinese provinces in the period under study. We focus on four main outcomes: loan amount (in logs), access to new loans, investment (in logs) and cash reserves.

Column (1) of Table 8 reports the results of estimating equation (1) when the outcome variable is the log of one plus the total amount of new bank loans issued in quarter t to firm i . We find that, following the introduction of specialized courts, SOEs experienced a significant decrease in the amount of new bank loans. The coefficient on $1(AfterSpecialCourt)_{ct}$ instead, which captured the effect on lending to privately-owned firms, is positive although not statistically different from zero. The magnitude of the estimate coefficients indicates that, after the introduction of specialized courts, SOEs received, on average, 5.5 percent smaller loans relative to the sample average. As shown, this effect is robust to controlling for province specific trends and firm fixed effects.

[Table 8 here]

Column (2) we estimate the same specification when the outcome variable is a dummy capturing access to new loans, defined as a dummy equal to one if firm i gets a new bank loan in quarter t . The results shown follow a pattern consistent with the loan amount outcome. We find heterogeneous effects between SOEs and private firms. In particular, the estimated coefficient on the interaction term indicates that SOEs are almost 50 percent less likely to receive a new bank loan relative to the sample average after the introduction of specialized courts.

Next, we study whether higher bank credit also translated into larger investment. To this end, we estimate a version of equation (2) where the outcome variable is capital investment. The results are reported in column (3) of Table 8.

The results show that the introduction of specialized courts fostered an increase in average firm investment by privately-owned firms, while SOEs experienced a decrease in

investment following the introduction of new courts. This finding is consistent with the results presented in columns (1) and (2): SOEs received smaller loans in the post-specialized court period, and invested less as a consequences. The effect on private firms needs more discussion, as private firms experienced only small and non significant effects in terms of bank loan size and new loans issuance. Still, they experience a large increase in investment. To investigate this further, in column (4) of Table 8 we study the effect of specialized courts on cash ratio – defined as the ratio of cash and cash equivalents over assets. The results are consistent with the heterogeneous effects documented in column (3) for investment. In particular: the estimated coefficient indicates that, in response to the introduction of specialized courts in a given city, privately-owned firms decreased their cash holdings, while SOEs increased their cash ratio, consistently with their decrease in investment. Overall, our results on real outcomes suggest that privately-owned firms increased capital investment in response to the introduction of specialized courts, and that this investments were mostly self-financed. This result is consistent with the real effects shown in Table 7: the reduction in zombie firms in city that introduced new specialized courts could have created investment opportunities that were then captured by privately-owned firms. On the other hand, SOEs decreased their capital investment and held on to more cash, potentially as a safety net against default.

5 Concluding Remarks

In the last decade, China has introduced two important reforms to its bankruptcy system. First, in 2007, the Chinese government introduced a new bankruptcy law, which increased secured creditors’ protection. Second, starting from the same year, some Chinese cities introduced courts specialized in bankruptcy cases. From 2014 the Supreme Court actively promoted the introduction of such courts across China in an effort to make the resolution of insolvency more efficient and professionally managed. This has recently become a priority for the Chinese government, that is facing the issue of liquidating low-productivity state-owned companies kept in business by preferential credit lines.

In this paper we exploit the staggered introduction of specialized bankruptcy courts to study their effect on judicial, real and financial outcomes. We find that specialized courts made insolvency faster and managed by more experienced and better trained judges. In addition, after specialization, courts experienced an increase in bankruptcy filings, especially when it comes to state-owned firms. At city-level, we find that the introduction of specialized courts generated a decrease in the share of zombie firms and an increase in average capital productivity of surviving firms. This is consistent with the idea that specialized courts decrease the influence of local governments on insolvency procedures. Such influence can artificially keep in business financially distressed state owned companies and prevent the reallocation of their resources. We also find that state owned firms

operating under specialized courts experienced a decrease in bank loan amounts, lower loan issuance and investment.

These results have important policy implications as China experienced a large credit boom in the last decade and, more recently, an increase in insolvency of corporate debt. Our results indicate that specialized courts can play an important role in liquidating zombie firms and favor the reallocation of resources to more productive firms.

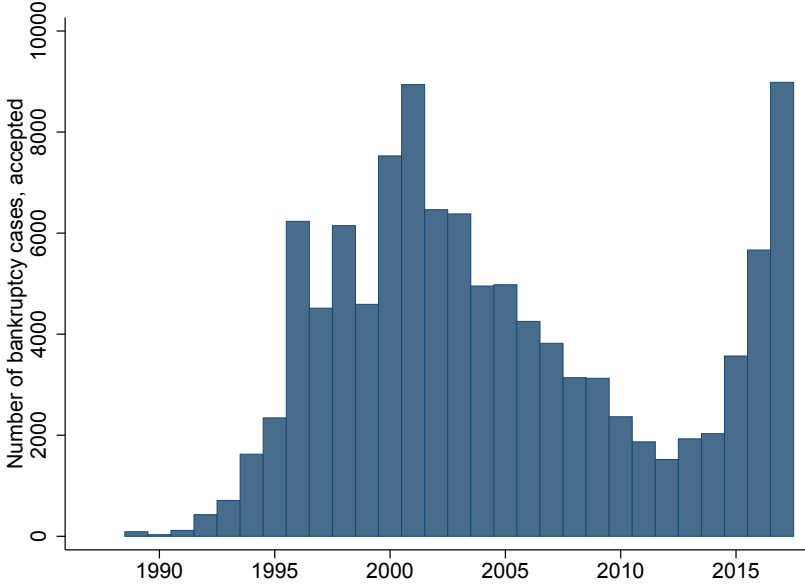
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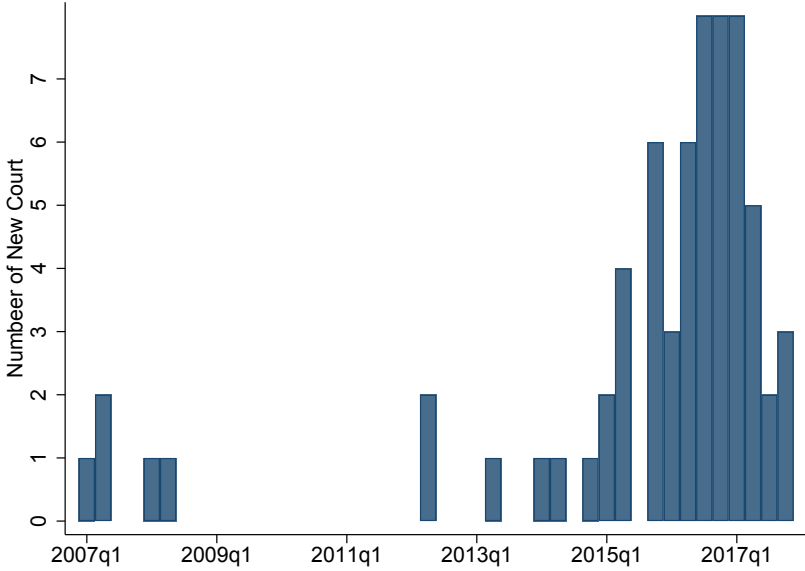
Figures and Tables

Figure 1: Number of bankruptcy cases, accepted



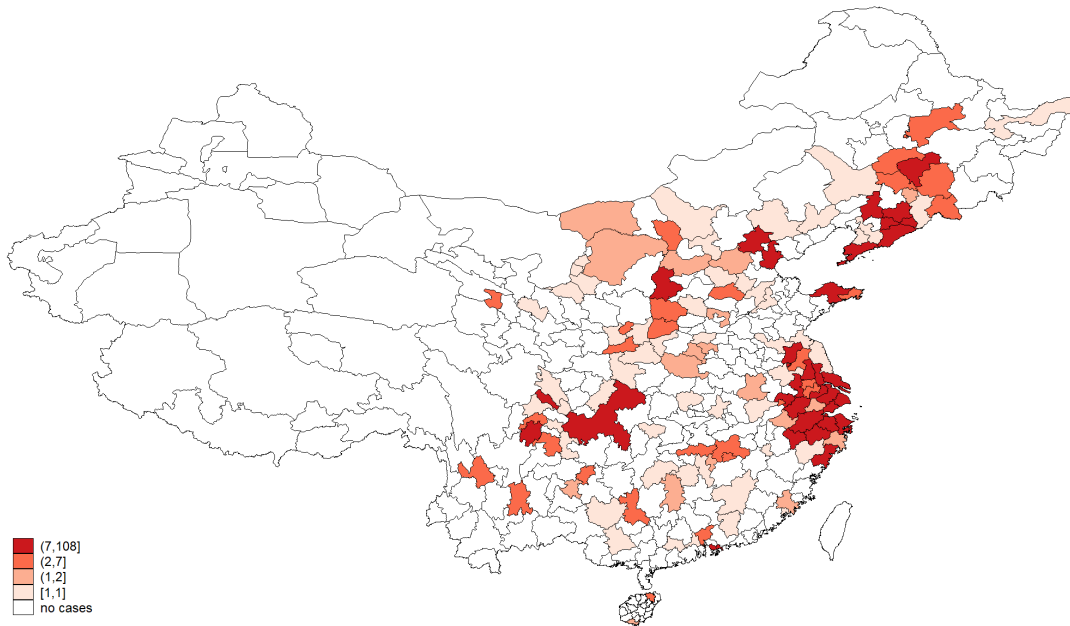
Notes: The Figure shows the number of bankruptcy cases accepted in the country in each year between 1989 and 2017.

Figure 2: Number of first specialized court introduced by quarter



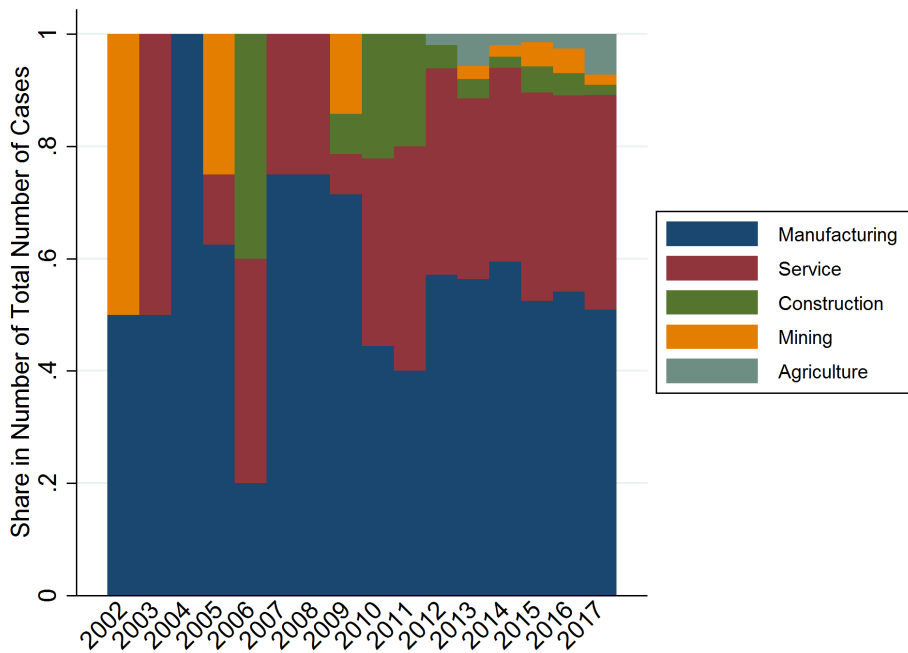
Notes: The Figure shows the number of courts specialized in bankruptcy introduced in each quarter between 2007Q1 and 2017Q4. We focus on the first court introduced in each city.

Figure 3: Distribution of bankruptcy cases by city



Notes: The Figure shows the geographical distribution of bankruptcy cases between 2005q1 and 2016q4 across Chinese cities.

Figure 4: Share of bankruptcy cases by sector



Notes: The Figure shows distribution of bankruptcy cases across sectors between 2002q1 and 2017q4.

Table 1: Summary statistics

Variable	Mean	Median	S.D.	Count
Court Level				
Total bankruptcy cases	1.605	1.000	1.362	615
Proportion of SOE	0.092	0.000	0.278	615
1(After Special Court)	0.111	0.000	0.314	615
Case-Judge Level				
1(Elite School)	0.125	0.000	0.330	2,031
log(N previous bankruptcy cases)	0.611	0.000	0.964	2,031
Share previous bankruptcy cases	0.045	0.000	0.131	1,651
Case Level				
Time in Court	580.538	492.000	487.222	1,157
1(SOE)	0.080	0.000	0.272	1,157
City Level				
log N firms	6.475	6.422	1.115	3,246
log(Output/Fixed assets)	0.979	1.071	0.526	3,246
Share of zombie firms	0.089	0.000	0.162	3,246
log(GRP per capita)	10.207	10.222	0.761	3,246
log(Population)	5.858	5.907	0.692	3,246
Share manufacturing GRP	0.490	0.494	0.109	3,246
Registered unemployment rate	0.032	0.030	0.020	3,246
Firm Level				
Log loan amount	13.878	18.198	8.490	91,587
Access to new loans	0.734	1.000	0.442	91,587
Cash ratio	0.179	0.137	0.145	87,622
Log investment	7.120	0.000	8.651	87,622
1(SOE)	0.525	1.000	0.499	91,587

Table 2: Introduction of Specialized Courts and City-level Characteristics

VARIABLES	Estimate	Obs
$\Delta \log (\text{GRP per capita})_t$	1.266 (3.039)	2,536
$\Delta \log (\text{GRP per capita})_{t-1}$	1.109 (2.717)	2,530
$\Delta (\text{Registered Unemployment Rate})_t$	14.063 (43.165)	2,446
$\Delta (\text{Registered Unemployment Rate})_{t-1}$	24.785 (36.106)	2,469
$\Delta \log (\text{N Firms})_t$	-2.112 (3.020)	2,522
$\Delta \log (\text{N Firms})_{t-1}$	-4.275 (2.860)	2,516
$\Delta \log (\text{Average Firm Size})_t$	-1.691 (2.820)	2,392
$\Delta \log (\text{Average Firm Size})_{t-1}$	1.754 (2.350)	2,388
$\log (\text{GRP per capita})_t$	0.957* (0.506)	2,544
Manufacturing GRP / Total GRP $_t$	-0.033 (0.031)	2,545
$\log \text{Population}$	0.767* (0.456)	2,546
$(\text{Registered Unemployment Rate})_t$	-21.594 (26.973)	2,475

Notes: The unit of observation is a prefecture-level city and year. The time period is 2007 to 2016. Cox model with time-varying variables is used for survival analysis, and the introduction of specialized court is defined as the event happening. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: Case and Judge Characteristics Before vs. After Specialized Court

	Average Before	Average After	Change	
Panel A: Time in court (in days)				
POE Cases	694.1	496.3	-197.8	-28.5%
SOE Cases	1330.9	510.1	-820.5	-61.7%
All cases	764.3	497.4	266.9	-34.9%
Panel B: Education: share of judges with master from elite school				
All Judges	21.65%	23.77%	2.12p.p.	
Chief Judge	20.00%	32.91%	12.91p.p.	
Judge	2.94%	7.25%	4.31p.p.	
Acting Judge	39.47%	29.33%	-10.14p.p.	
Panel C: Experience of Judges				
All Judges	3.397	5.649	2.252	66.3%
Chief Judge	3.467	3.685	0.218	6.3%
Judge	3.326	6.000	2.674	80.4%
Acting Judge	3.400	7.129	3.729	109.7%

Notes: "Time in Court" reports the average time in court to resolve a bankruptcy case (in days). POE: bankruptcy cases where firm is privately-owned. SOE: bankruptcy cases where firm is state-owned. For "Education" and "Experience", the statistics are in case-judge pair level. One judge is defined as with master degree in elite schools if we found exactly one master thesis under this name on CNKI in those schools, and without master degree in those schools if we found no master thesis on CNKI, or master thesis in other schools. The variable is treated as missing if more than one master thesis is found. The "Elite Schools" are defined as Project 985 universities, and 5 additional professional law schools (CUPL, SWUPL, ZUEL, NWUPL, and ECUPL). The experience of judges is measured by the number of bankruptcy cases the judge handled before the year of case in dataset on China Judgement Online. Panel B and C only include the cases 1 year before and after the introduction of specialized courts.

Table 4: Judge-Level Outcomes: Education and Experience

VARIABLES	(1) 1(Elite School)	(2) 1(Elite School)	(3) log(N previous bankruptcy cases)	(4) log(N previous bankruptcy cases)	(5) Share previous bankruptcy cases	(6) Share previous bankruptcy cases
1(After Special Court)	0.121** (0.0549)	0.125** (0.0509)	0.358* (0.197)	0.378** (0.184)	0.0210* (0.0123)	0.0220* (0.0118)
log(GRP per capita)	0.0928 (0.0870)	0.157*** (0.0584)	0.0213 (0.181)	0.0121 (0.176)	0.111** (0.0452)	0.117** (0.0492)
log(Population)	-0.277 (0.221)	0.0188 (0.192)	1.532 (1.073)	1.538 (1.105)	-0.318** (0.125)	-0.286** (0.142)
Share manufacturing in GRP		-2.334*** (0.745)		0.940 (3.751)		-0.229 (0.648)
Registered unemployment / total workers		-2.396 (2.025)		-23.79* (13.06)		-1.156 (1.968)
Observations	2,029	2,029	2,029	2,029	1,646	1,646
R-squared	0.171	0.177	0.451	0.455	0.250	0.251
Quarter FE	YES	YES	YES	YES	YES	YES
City FE	YES	YES	YES	YES	YES	YES
N clusters	227	227	227	227	196	196

Notes: The unit of observation is a case-judge. The time period is 2005Q1 to 2016Q4. Standard errors in parentheses are clustered at court level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 5: Time in Court for Bankruptcy Cases

VARIABLES	(1) Time in Court	(2) Time in Court	(3) Time in Court
1(After Special Court)	-103.5* (62.17)	-117.7* (62.45)	-122.0** (60.86)
1(After Special Court) × 1(SOE)			65.75 (179.9)
1(SOE)		146.9 (106.9)	128.1 (126.4)
City-level controls	YES	YES	YES
Quarter FE	YES	YES	YES
Court FE	YES	YES	YES
Sector FE	YES	YES	YES
Size FE	Yes	Yes	Yes
Reorganization FE	YES	YES	YES
N clusters	137	137	137
Observations	885	885	885
R-squared	0.577	0.579	0.579

Notes: The unit of observation is a case. The time period is 2005Q1 to 2016Q4. Standard errors in parentheses are clustered at court level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 6: Court Level Outcomes

VARIABLES	(1) Total bankruptcy cases	(2) Total bankruptcy cases	(3) Proportion of SOE all cases	(4) Proportion of SOE all cases
1(After Special Court)	0.627** (0.311)	0.627** (0.312)	0.0928** (0.0393)	0.0939** (0.0384)
log(GRP per capita)	-0.109 (0.228)	-0.157 (0.238)	0.164** (0.0784)	0.130* (0.0736)
log(Population)	12.47*** (2.944)	12.23*** (2.996)	0.408 (0.458)	0.267 (0.472)
Share manufacturing in GRP		1.142 (1.814)		0.953 (0.713)
Registered unemployment / total workers		7.645 (7.577)		2.558 (2.783)
Observations	615	615	615	615
R-squared	0.301	0.302	0.459	0.462
Quarter FE	YES	YES	YES	YES
City FE	YES	YES	YES	YES
N clusters	71	71	71	71

Notes: The unit of observation is a court. The time period is 2005Q1 to 2016Q4. Standard errors in parentheses are clustered at city level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 7: City-Level Outcomes

VARIABLES	(1) log N firms	(2) log(Output/Fixed Assets)	(3) Share of Zombie Firms weight = N firms
1(After Special Court)	-0.0156 (0.0547)	0.0802** (0.0359)	-0.0219** (0.00918)
City-level controls	YES	YES	YES
Quarter FE	YES	YES	YES
City FE	YES	YES	YES
N clusters	31	31	31
Observations	3,246	3,246	3,246
R-squared	0.975	0.818	0.411

Notes: The unit of observation is a city. The time period is 2005 to 2016. Standard errors in parentheses are clustered at the city level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 8: Firm-level Outcomes: Loan Amount and Access to New Loans

	(1)	(2)	(3)	(4)
	Log Loan Amount	Access to New Loans	Log Investment	Cash Ratio
1(After Special Court)	0.381 (0.343)	0.0194 (0.0179)	0.930** (0.373)	-0.0168** (0.00771)
1(After Special Court) × 1(SOE)	-0.770* (0.402)	-0.0371* (0.0211)	-2.086*** (0.377)	0.0284*** (0.00873)
1(SOE)	-0.183 (0.369)	-0.0161 (0.0191)	-0.435 (0.291)	-0.0102 (0.00685)
City-level controls	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Province × Quarter FE	YES	YES	YES	YES
N clusters	1439	1439	1439	1439
Observations	90,308	90,308	86,400	86,400
R-squared	0.538	0.484	0.376	0.593

Notes: The unit of observation is a firm. The time period is 2005Q1 to 2016Q4. The loan amount variable is defined as the cash received from new loan in the quarter. Loan access is defined as *Loan Amount* > 0. Investment is defined as the cash paid for investment in the quarter. Loan amount and investment are transformed by $\log(1+x)$. All outcomes (except loan access) are winsorized at 1 percent in each tail. Standard errors in parentheses are clustered at city-industry level. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$