Going Bankrupt in China*

Bo Li Jacopo Ponticelli†

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Abstract

This paper investigates how legal reforms affect 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 provinces. 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 provinces that introduced specialized courts are assigned to more experienced, better trained judges, and reach resolution faster when it comes to insolvent state-owned firms. Provinces that introduced specialized courts experienced an increase in liquidations of state-owned firms and a decrease in the overall share of "zombie" 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 highlight how limiting government intervention can fasten insolvency resolution, and have important policy implications in light of the recent increase in insolvency that followed China's debt boom.

Keywords: Financial distress; Zombie firms; Judges; Court efficiency.
JEL Classification: G33, G34, K22.

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†Li: Tsinghua University PBC School of Finance, lib@pbcsf.tsinghua.edu.cn. Ponticelli: Northwestern University and CEPR, jacopo.ponticelli@kellogg.northwestern.edu.

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 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 proceedings across Chinese provinces. 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 inefficient state-owned firms in an economy already characterized by high

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

[2] The 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).

debt levels.

Our empirical analysis exploits the staggered introduction of specialized courts across Chinese provinces to identify their effect on bankruptcy resolution outcomes and corporate credit markets. Specifically, the new courts were introduced at different times in different provinces 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. 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 experience in bankruptcy cases and education.

Our first finding is that cases filed after the introduction of specialized courts are assigned to judges with more experience in bankruptcy and higher education – as measured by the probability of graduating from an elite law school. We also find that introduction of specialized courts led to an increase in the share of liquidations of state-owned firms at province-level. According to the Supreme Court announcements, 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 the declared objective of the reform. We also find that cases filed in provinces that established specialized courts have shorter resolution time compared with those filed in provinces where civil courts still handle bankruptcies. This result is entirely driven by a decrease in the time to resolve insolvency of state-owned firms, while we find no effect on time in court to resolve insolvency of privately-owned firms.

Next, we study the implications of new 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. 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 benefited from the introduction of new courts in terms of access to bank lending, although these effects are only marginally significant. We also study the impact of specialized courts on real outcomes. 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.

Finally, we study whether - at provincial level – the introduction of specialized courts had an impact on the share of "zombie" firms. 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. Our results suggest that provinces where specialized courts were introduced experienced a decrease in the share of zombie firms. This is consistent with our finding on investment at firm-level: the reduction in zombie firms in provinces that introduced specialized courts could have created growth 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 provinces 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 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).

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

[4]Chapter 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. "Shenzen Special Economic Zone Enterprise Bankruptcy Regulations". See Booth (2008) for a detailed description of the legal landscape before the introduction of the 2007 Bankruptcy Law.

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. It is important to notice that the scope of the 2007 bankruptcy law is not just SOEs: the new law applies to a wide range of privately owned firms, foreign firms, and financial institutions. In addition, the 2007 bankruptcy reform also laid out unified rules regardless of government ownership for mandatory liquidation to protect creditors if a firm is in severe distress and the bankruptcy proceedings become too lengthy.[8]

[5]These 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).

[6]The 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.

[7]One 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).

[8]When 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.

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 provinces started introducing courts specialized in bankruptcy cases. This first phase was in part driven by the occurrence of major bankruptcy cases of large corporations in provinces specialized in steel and coal production, such as Shanxi. 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 – 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 almost all

Chinese provinces have established at least one of such courts.[9] 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.[10]

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.

[9]This includes the twenty-two provinces, four municipalities, and three autonomous regions. The 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).

[10]The 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 provinces, case-level data on bankruptcy outcomes, judge-level data on experience and education, 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 as the precise dates are not publicly disclosed online or in official documents. To validate the implementation 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. For each province, we use the earliest introduction date of a specialized court as the official implementation date in our sample. Figure 2 shows the number of provinces introducing their first specialized court by quarter in China. As shown, some Chinese provinces started introducing their first specialized courts right after the bankruptcy reform of 2007. The majority of Chinese provinces introduced specialized courts after the official guidelines of the Supreme Court in 2014. We observe an average of two provinces introducing their first specialized court every quarter in the years 2015, 2016 and 2017. As of December 2017, almost all Chinese provinces had at least one specialized court.[11] 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 large firms. 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

[11] By the end of November 2017, a total number of 97 specialized courts were established across twenty-two provinces, four municipalities, and three autonomous regions. Some of the provinces have multiple specialized courts.

[12] Given the fact that there is limited number of public firms that went bankrupt within the last decade, 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 not 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 can use this 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 provinces in our sample. As expected, Coastal provinces display higher number of cases with respect those located in the interior as they have higher population density and concentration of industrial activities. In section 4 we discuss in detail the correlation between introduction of specialized courts and province characteristics and economic trends (including number of bankruptcy cases).

[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

[13] According 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%.

[14] Note 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.

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

concentrated in manufacturing, followed by services and construction.

[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 provinces (and, thus, jurisdictions) 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 provinces. 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 Testable Hypotheses

In this paper, we study how judicial outcomes and lending activity respond to the introduction of specialized courts. The introduction of specialized courts has two potential effects – an enhanced recovery rate effect and a liquidation of SOEs effect. We describe them in what follows before presenting our identification strategy.

First, specialized courts employ judges and trustees that are bankruptcy professionals. Professionalization, by making insolvency resolution faster and better managed, increases recovered value of assets, and can thus generate higher lending ex-ante. To test this

[16] Ideally, 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.

[17] One 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.

hypothesis we first focus on case-level data and study whether specialized courts have an effect on judges' experience and training, as well as on judicial efficiency as measured by time in court to resolve insolvency.

Second, specialized courts favor a more market-oriented bankruptcy regime which reduces the influence of local government. Lower political interventions in insolvency translates into higher probability of liquidating inefficient SOEs. To test this hypothesis we first focus on case-level data and study whether specialized courts have an effect on probability of liquidating financially distressed SOEs. In addition, if loans to these firms 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, whether the recovery rate or the liquidation effect dominates remains an empirical question.

4.2 Methodology

In this section we present the main estimating equations used to study the effect of specialized courts on judicial, financial and real outcomes. For identification purposes, we exploit the staggered introduction of courts specialized in bankruptcy cases across Chinese provinces. The baseline equation to be estimated is as follows:

$$y_{isjt} = \alpha_s + \alpha_j + \alpha_t + \beta(AfterSpecialCourt)_{st} + \varepsilon_{isjt} \quad (1)$$

Where i indexes bankruptcy cases or firms depending on the specification, s indexes provinces, j indexes sectors and t indexes quarters. The variable $(AfterSpecialCourt)_{st}$ is a dummy equal to one in the period the first specialized court was introduced in a given province and for all the periods thereafter, and zero otherwise. Firms located in provinces where the variable $(AfterSpecialCourt)_{st}$ is equal to 1 operate in an environment where specialized bankruptcy courts handle the distress resolution process.[18] Firms located in provinces 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 provinces that have at least one court specialized in bankruptcy in operating as of time t, while the control group is composed by provinces where the introduction of specialized courts happened after t.

In the baseline specification we control for province, industry and time fixed effects, and standard errors are clustered at the province-industry level. We estimate additional specifications that control for firm-level characteristics such as: age, size, leverage ratio, profitability (operating income divided by assets) and asset tangibility (defined as

[18]This should be thought of more as an intention to treat effect, as not all bankruptcy cases filed after the introduction of the first specialized court in a given province are filed with that court. Our data at case level however confirms that, after the introduction of the first specialized court, the number of courts dealing with bankruptcy cases substantially decreases.

property, plant, and equipment divided by assets). All firm controls are defined at $t-1$.

The main concern with this identification strategy is that the timing and location of the introduction of specialized courts are correlated with local economic conditions. For example, specialized courts might be introduced in provinces that are experiencing negative economic shocks in order to deal with increasing number of insolvencies of 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 these concerns, in Table 2 we study the relationship between measures of province economic performance and probability of introduction of specialized courts. As shown, economic performance as measured by growth in Gross Regional Product (GRP) in the previous year does not predict court introduction. Similarly, we find that court introduction is not predicted by agricultural sector growth in the previous year at province level. Instead, past negative performance in the construction sector does predict court introduction.[19] Table 2 also tests for a set of additional characteristics at province level, such as total number of firms, total number of SOEs and average firm size as measured by assets. In the empirical analysis we show that our results are robust to adding these controls at province level.

Next, we study the heterogeneous effects of the introduction of specialized courts between SOEs and private firms. State-owned firms received local government protection when cases were dealt with by civil courts. Thus, we want to test whether new specialized courts changed how bankruptcy rules are enforced for state-owned enterprises relative to private firms. This analysis can help to shed light on the effect of political influence in the judiciary on economic outcomes.

To examine the heterogeneous impact of judicial reform on firms with different state ownership, we add an interaction term to equation (1) and estimate the following equation:

$$\begin{aligned} y_{isjt} &= \alpha_s + \alpha_j + \alpha_t + \beta_1 (AfterSpecialCourt)_{st} \times I(SOE)_{isjt} \\ &+ \beta_2 (AfterSpecialCourt)_{st} + \beta_3 I(SOE)_{isjt} + \varepsilon_{isjt} \end{aligned} \tag{2}$$

The variable $I(SOE)_{isjt}$ 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

[19] Performance of the construction sector is measured as the increase of the gross output value of construction from t-4 to t. Data is sourced from the National Bureau of Statistics.

of specialized courts on SOEs relative to private firms.

4.3 Judicial Outcomes

We start by focusing 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 province. Additionally, the table splits cases into those regarding SOEs and those regarding privately owned firms. As shown, the average length of bankruptcy cases decreased after the introduction of specialized courts from 641 days to 486 days. The decrease in time in court is largest for cases regarding SOEs, which took on average 865 days in court before introduction of specialized courts, while only 453 days in the period after. 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 shown, the share of judges with elite education increases from 10 to around 14 percent after the introduction of specialized courts, and the effect is mostly concentrated in the chief judge of each case.[20] Finally, in Panel C we focus on judge's previous experience in insolvency resolution. Data here is only available from 2014, and thus captures only relatively recent experience. Still, the data shows that judges in charge of bankruptcy cases after the introduction of specialized courts have dealt on average with around 1 more bankruptcy case in the past relative to judges in charge before the introduction of specialized courts.

[Table 3 here]

We now study the effect of specialized courts on judicial outcomes more formally by estimating an equation similar to equation (1) at province-quarter level. We start by studying whether specialized courts affected the liquidation of SOEs in a given province. To this end, we construct a variable capturing the share of bankruptcy cases regarding state-owned firms over total bankruptcy cases filed in a given province and quarter.

The results are reported in Table 4. In column 1 we focus on total number of bankruptcy cases as an outcome. The coefficient on specialized court introduction is positive but not statistically significant, which indicates that provinces that introduced these courts did not experience a faster increase in the number of bankruptcy cases relative to those that did not in a given quarter. This is consistent with our hypothesis that specialized court introduction is orthogonal to differences in local business cycle. Next,

[20] Each bankruptcy case is assigned 3 judges: a chief judge – which takes the important decisions including the selection of the trustee, and has the more intellectual role – and two other lower level judges, which are mostly in charge of the administrative tasks of the case.

in columns 3 and 4 of Table 4, we focus on the share of bankruptcy of SOEs. The results show that provinces that introduced specialized courts experienced an increase in the share of SOE bankruptcy filings relative to provinces that did not introduce such courts. Also, the estimated coefficients in columns 5 and 6 of Table 4 show that the increase in the share of SOE bankruptcies is driven by liquidation rather than reorganization cases.

[Table 4 here]

Next, we focus on how the introduction of specialized courts affected 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, which estimates equation (1) when the outcome variable is time in court expressed in days. When controlling for province and time fixed effects, we find that the introduction of specialized courts had no significant impact on average time in court. However, we do find that cases of liquidation of SOEs experience a significant decrease in their length when dealt with by specialized courts. The magnitude of our estimates suggest that in provinces that introduced specialized courts, SOEs' bankruptcies take as long as privately owned firms' bankruptcies to be resolved.

[Table 5 here]

4.4 Financial Outcomes: Loan Size and Access to New Loans

In sections 4.3 and 4.6 we showed that the introduction of specialized courts in China induced faster liquidation of SOEs and lower survival probability of low-productivity zombie firms. In this section we study whether the introduction of new courts had an impact on credit markets. On one hand, specialized courts increase the professionalization and efficiency of local court enforcement 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.

Column (1) to (4) of Table 6 show the impact of specialized court on bank loan amount. We estimate equation (1) where the outcome variable $TotalBankCredit$ equals the logarithm of one plus the total amount of new bank loans issued in quarter t to firm i. Note that the dependent variable is extracted form the balance sheet by aggregating all bank loan facilities within a given quarter. Column (1) reports the average effect across *all* firms. The coefficient estimate indicates that, in response to the introduction of specialized courts in a given province, banks did not increase the amount of lending to firms headquartered under their jurisdiction. In column (2) we estimate heterogeneous

effects between SOEs and privately owned firms using equation (2). We find that, following the introduction of specialized courts, SOEs experienced a significant decrease in amount of new bank loans. Privately-owned firms, instead, experienced an increase in new bank loans, which explains the lack of an average effect shown in column (1). The magnitude of the estimate coefficients indicates that, after the introduction of specialized courts, SOEs received, on average, 6.4 percent smaller loans relative to their sample average pre-specialized courts. On the other hand, privately-owned firms received, on average, 2.9 percent larger loans relative to their sample average pre-specialized courts. As shown, the negative effect of specialized courts on average loan amount for SOEs is robust to controlling for industry specific trends as well as firm fixed effects (columns (3) and (4)), while the positive effect for private firms becomes smaller and not statistically significant with more saturated models. The lack of a strong positive effect for private firms might be explained, at least in part, by the fact that time in court for bankruptcy cases of private firms did not significantly decrease with the introduction of new courts. As we showed in section 4.3, most of the effect on judicial outcomes was limited to cases regarding SOEs.

[Table 6 here]

We also study the effect of specialized courts on two additional financial outcomes: access to new loans and bank credit spread. The results on access to new loans are reported in columns (5) to (8) of Table 6. The outcome variable in this three columns is 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 no average effects when focusing on all firms. Instead we find heterogeneous effects between SOEs and private firms. In particular, the estimated coefficients indicate that SOEs are around 6.6 percent less likely to receive a new bank loan relative to their sample average pre-specialized courts (private firms are 3 percent more likely, but this result is not robust to controlling for industry specific trends or firm fixed effects).

In Table A1 of Appendix B we test the effect of new courts on bank spread paid by firms on new bank loans. The data is sourced from loan announcements of publicly traded firms and collected by CSMAR. As shown, our estimate for this outcome rely on 1,462 loan announcements over the period 2005 to 2017 and is therefore only suggestive evidence of the mechanism. Still, the results show that firms operating in provinces that introduced specialized courts experienced lower cost – 0.6 percentage points – of new bank loans relative to those in provinces where specialized courts where still to be introduced. The magnitude of the decrease corresponds to 35 percent of the average spread in the pre-specialized court period in our sample. Notice also, that, despite the coefficient is not statistically significant, the heterogeneous effects shown in column (2) suggest that the decrease in cost of capital is entirely driven by private firms.

4.5 Real Outcomes: Investment and Cash Holdings

In section 4.4 we showed that the introduction of specialized courts in China had heterogeneous effects on the intensive and extensive margin of bank lending. In this section we study whether higher bank credit also translated into larger investment. To this end, we estimate a version of equations (1) and (2) where the outcome variables is capital investments. The results are reported in columns (5) to (8) of Table 7.

Column (5) shows that the introduction of specialized courts fostered an increase in average firm investment. Columns (6) to (8) show that this effect is driven by privately-owned firms, while SOEs actually experienced a decrease in investment following the introduction of new courts. The latter finding is consistent with the results presented in section 4.4: SOEs received smaller loans in the post-specialized court period, and invested less as a consequences. The former finding 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 columns (1) to (4) of Table 7 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 average and heterogeneous effects documents in columns (5) to (8) for investment. In particular: the estimated coefficient in column (1) indicates that, in response to the introduction of specialized courts in a given province, firms decreased their cash holdings. As shown in columns (2) to (4), this effect is entirely driven by private firms, while SOEs actually increased their cash ratio, consistently with their decrease in investment. Overall, our results on real outcomes suggest that private firms increased capital investment in response to the introduction of specialized courts, and that this investments were mostly self-financed. On the other hand, SOEs decreased their capital investment and held on to more cash, potentially as a safety net against default.

[Table 7 here]

4.6 Share of local zombie firms

In section 4.3 we showed that the introduction of new specialized courts increased the share of liquidations regarding SOEs and reduced the time in court for such cases. In this section we study whether specialized courts had an impact on the probability that local "zombie" firms remain in operation.

To this end, we define "zombie" firms following Caballero et al. (2008). More specifically, we define as zombie if two conditions are met. First, the firm is charged an actual 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 balance sheet. Second, the firm has productivity – as captured by Total Factor Productivity (TFP) – 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 province level is quite high (0.72).

Using this definition, we test whether specialized courts had an impact on the share of zombie firms operating within their jurisdiction. Table 8 reports the results of estimating equation (1) when the outcome variable is the share of zombie firms in operation in a given province in a given quarter. As shown, the estimated coefficients capturing the effect of the introduction of specialized courts on share of zombie firms in a given province is negative and significant. This indicates that zombie firms operating under a specialized bankruptcy court are less likely to be in operation relative to those operating in provinces that still do not have a specialized court. The magnitude of the coefficient indicates that, after the introduction of specialized courts, provinces experience 1.4 percentage points reduction in the share of zombie firms. The average share of zombie firms across provinces in the sample is 15.8 percent.

Overall, the result presented in Table 8 is consistent with the idea that, under local civil courts, zombie firms were protected from bankruptcy by local government. In the new regime, instead, local governments have less discretion on bankruptcy cases and zombie firms are more likely to be liquidated once in financial distress. In addition, this result is consistent with the real effects shown in Table 7: reduction in zombie firms in provinces that introduced new specialized courts created investment opportunities that were then captured by privately-owned firms.

[Table 8 here]

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 provinces introduced courts specialized in bankruptcy cases. From 2014 the Supreme Court actively promoted the introduction of such courts all 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 and mostly 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 and credit market outcomes. We find that provinces that introduced specialized courts experience higher liquidation of state-owned firms, faster resolution of insolvency, and a decrease in the share of zombie firms relative to provinces where bankruptcy is still resolved by civil courts. 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 use 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. 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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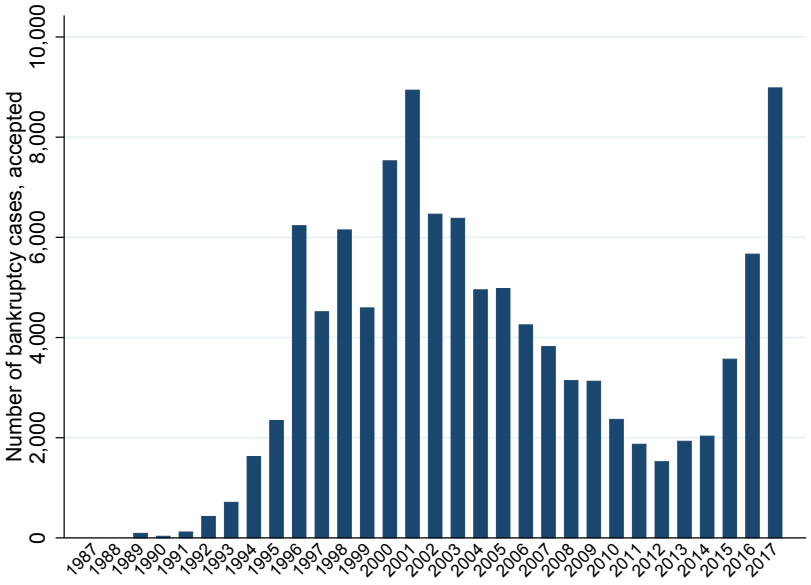
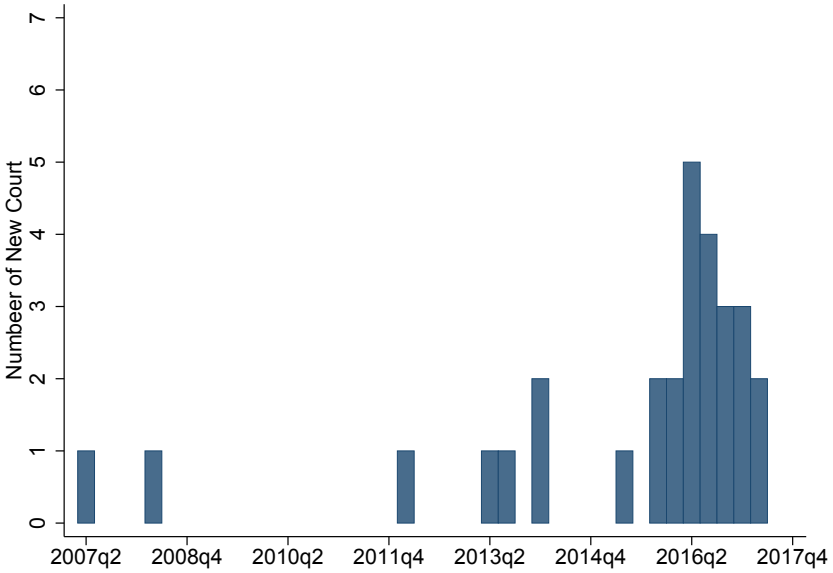
Figures and Tables

Figure 1: Number of bankruptcy cases, accepted



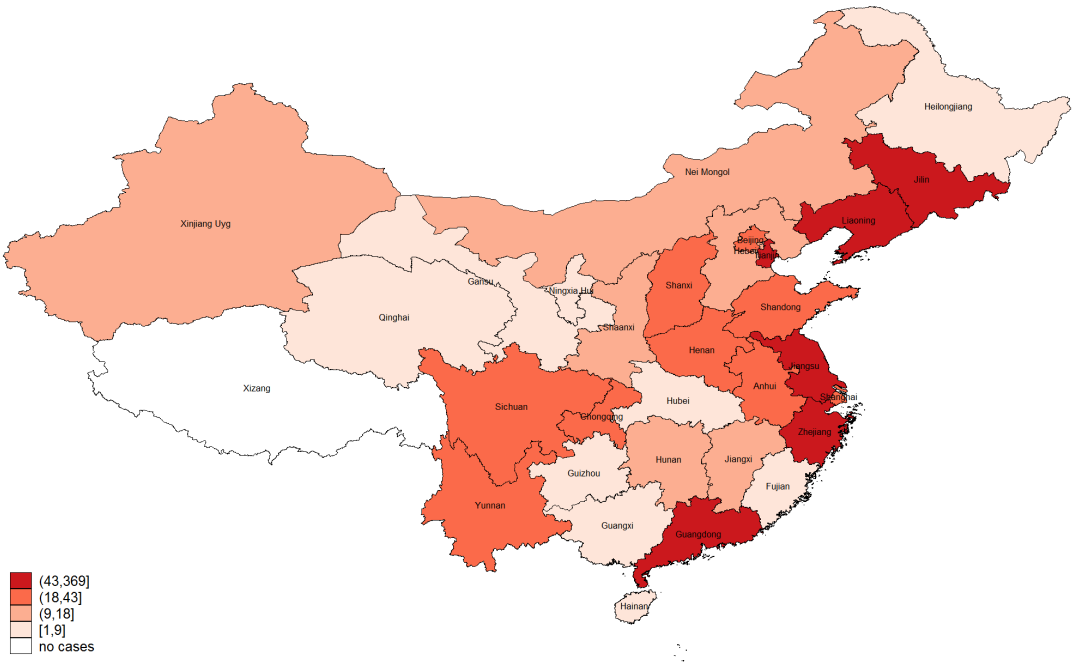
Notes: The Figure shows the number of bankruptcy cases accepted in the country in each year between 1989 and 2017.

Figure 2: Number of first specialized court introduced by quarter



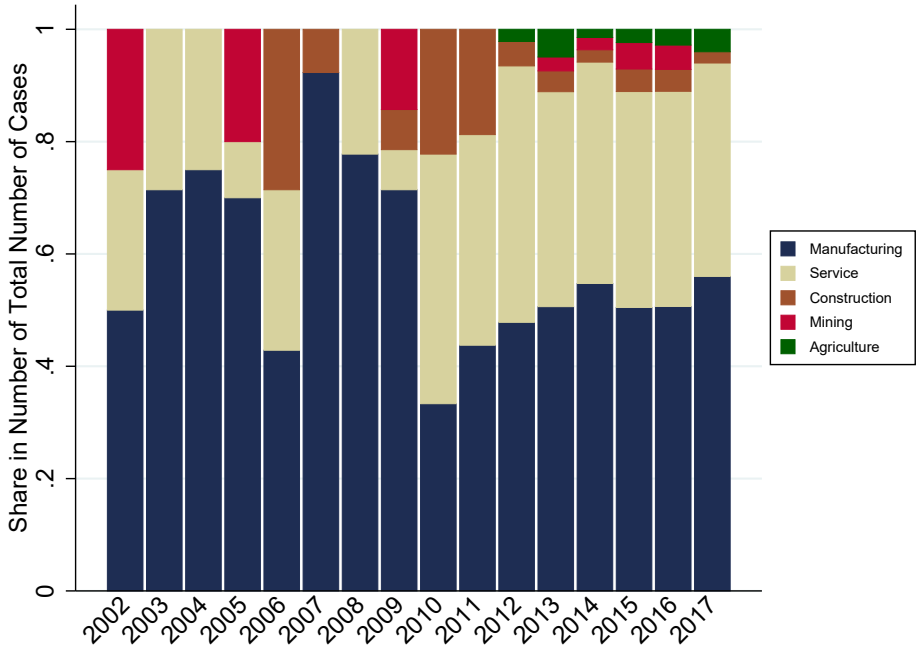
Notes: The Figure shows the number of courts specialized in bankruptcy introduced in each quarter between 2007Q1 and 2017Q4. We focus on the first court introduced in each province.

Figure 3: Distribution of bankruptcy cases by province



Notes: The Figure shows the geographical distribution of bankruptcy cases between 2002q1 and 2017q4 across Chinese provinces.

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
Firm Level				
Loan Issuance	13.955	18.259	8.513	88,770
Loan Access	0.735	1.000	0.441	88,770
Investment	7.569	0.000	8.810	88,770
Cash Ratio	0.174	0.135	0.138	88,770
I(SOE)	0.513	1.000	0.500	88,770
Age	10.037	9.000	6.532	88,770
Size	21.824	21.680	1.319	88,770
Leverage	0.451	0.447	0.234	88,770
Profitability	0.009	0.008	0.022	88,770
Tangibility	0.238	0.202	0.175	88,770
MB	3.912	2.859	3.985	88,770
Case Level				
Time in Bankruptcy	581.071	492.000	495.357	1,159
I(Liquidation)	0.843	1.000	0.364	1,278
I(Reorganization)	0.162	0.000	0.369	1,278
I(case=SOE)	0.097	0.000	0.296	1,278
Province Level				
Total Bankruptcy Cases	3.737	2.000	6.381	342
% SOE Cases	0.166	0.000	0.332	342
% SOE Liquidation Cases	0.169	0.000	0.337	311
% SOE Reorganization Cases	0.075	0.000	0.243	93
$\Delta \log GRP_{t-(t-4)}$	0.078	0.076	0.104	338
$\Delta \log Agriculture_{t-(t-4)}$	0.053	0.048	0.091	338
$\Delta \log Construction_{t-(t-4)}$	0.089	0.093	0.125	338
Loan Level				
Spread	1.570	0.600	2.435	1,462
Case-Judge Level				
Experience	0.440	0.000	0.841	3,109

Table 2: Introduction of Specialized Courts and Province Characteristics

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta \log GRP_{t-(t-4)}$	-4.473					
	(4.227)					
$\Delta \log Agriculture_{t-(t-4)}$		-3.502				
		(2.525)				
$\Delta \log Construction_{t-(t-4)}$			-2.491*			
			(1.296)			
log number of firms				0.148		
				(0.156)		
log number of SOEs					0.289	
					(0.288)	
log average firm size						0.153
						(0.331)
Observations	1,021	1,016	1,021	1,019	1,019	1,019
Quarter FE	YES	YES	YES	YES	YES	YES

Notes: The unit of observation is a province quarter. The time period is 2007Q2 to 2017Q4. 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	620.7	489.7	-131.0	-21.1%
SOE Cases	865.0	453.3	-411.7	-47.6%
All cases	641.6	486.9	-154.7	-24.1%
Panel B: Education: share of judges with master from elite school				
All Judges	10.19%	13.29%	3.10%	
All Judges (1 year interval)	10.49%	14.76%	4.27%	
Chief Judge	10.02%	16.22%	6.20%	
Chief Judge (1 year interval)	8.02%	19.84%	11.82%	
Judge	10.42%	5.14%	-5.28%	
Judge (1 year interval)	9.76%	4.42%	-5.34%	
Acting Judge	10.14%	19.22%	9.08%	
Acting Judge (1 year interval)	13.39%	19.17%	5.78%	
Panel C: Experience of Judges				
All Judges	1.390	2.382	0.992	71.4%
All Judges (1 year interval)	2.174	3.269	1.095	50.4%
Chief Judge	1.783	2.180	0.397	22.3%
Chief Judge (1 year interval)	2.940	2.708	-0.232	-8.6%
Judge	1.141	1.901	0.760	66.6%
Judge (1 year interval)	1.470	3.453	1.983	134.9%
Acting Judge	1.244	3.038	1.794	144.2%
Acting Judge (1 year interval)	2.072	3.654	1.582	76.4%

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. The 1-year interval only calculates the cases 1 year before and after the introduction of specialized courts.

Table 4: Share of SOE Bankruptcy Cases

VARIABLES	Total bankruptcy cases		Proportion of SOE, all cases		Proportion of SOE, liquidation cases		Proportion of SOE, reorganization cases	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
AfterSpecialCourt	1.623	1.711	0.133**	0.140**	0.117**	0.130**	0.0312	0.0275
	(3.260)	(3.041)	(0.0583)	(0.0595)	(0.0533)	(0.0609)	(0.0338)	(0.0303)
$\Delta \log GRP_{t-(t-4)}$		-0.859		-0.0577		0.265***		-0.444***
		(4.485)		(0.0946)		(0.0693)		(0.0531)
$\Delta \log Agriculture_{t-(t-4)}$		9.752		0.338*		0.298		-0.156
		(7.363)		(0.192)		(0.192)		(0.261)
$\Delta \log Construction_{t-(t-4)}$		7.676		0.125		0.118		0.107
		(17.28)		(0.155)		(0.160)		(0.215)
Observations	335	333	335	333	303	301	82	82
R-squared	0.651	0.655	0.485	0.486	0.486	0.498	0.623	0.729
Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES	YES	YES	YES
Weight	Total cases	Total cases	Total cases	Total cases	Liquidation cases	Liquidation cases	Reorganization cases	Reorganization cases
N clusters	29	29	29	29	28	28	17	17

Notes: The unit of observation is a province quarter. The time period is 2005Q1 to 2017Q4. Provinces are weighted by number of cases in the entire period. Standard errors in parentheses are clustered at province level. POE: bankruptcy cases where firm is privately-owned. SOE: bankruptcy cases where firm is state-owned. Standard errors in parentheses are clustered at province level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 5: Time in Court for Bankruptcy Cases

VARIABLES	(1) All	(2) All	(3) Liquidation	(4) Reorganization
AfterSpecialCourt	5.449	29.30	52.86	43.05
	(37.90)	(43.52)	(48.79)	(65.81)
After SpecialCourt × I(SOE)		-272.4*	-316.1*	-72.56
		(140.0)	(169.9)	(233.3)
I(SOE)		63.10	70.91	75.14
		(128.9)	(145.6)	(170.1)
$\Delta \log GRP_{t-(t-4)}$	18.57	-46.94	229.6	85.79
	(87.90)	(98.41)	(188.7)	(234.6)
$\Delta \log Agriculture_{t-(t-4)}$	-210.4	-214.1	-262.9	-169.5
	(346.2)	(334.4)	(442.9)	(426.0)
$\Delta \log Construction_{t-(t-4)}$	-258.5	-304.1	-684.6*	-276.1
	(264.9)	(256.0)	(375.8)	(293.4)
Observations	1,152	1,152	953	197
R-squared	0.346	0.351	0.349	0.617
Quarter FE	YES	YES	YES	YES
Province FE	YES	YES	YES	YES
N clusters	29	29	28	19

Notes: The unit of observation is a case. The time period is 2006Q1 to 2017Q4. Standard errors in parentheses are clustered at province level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 6: Financial Outcomes: Loan Amount and Access to New Loans

VARIABLES	Loan Amount				Access to new loans			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After SpecialCourt	-0.076	0.325*	0.281	0.124	-0.004	0.018*	0.015	0.007
	(0.148)	(0.185)	(0.190)	(0.167)	(0.008)	(0.010)	(0.011)	(0.009)
After SpecialCourt × I(SOE)		-0.960***	-0.924***	-0.534***		-0.052***	-0.049***	-0.030***
		(0.248)	(0.262)	(0.205)		(0.014)	(0.015)	(0.011)
I(SOE)		-0.239	-0.231	-0.513*		-0.006	-0.006	-0.028*
		(0.228)	(0.230)	(0.305)		(0.012)	(0.012)	(0.017)
$\Delta \log GRP_{t-(t-4)}$	-0.653**	-0.719**	-0.763**	-0.413	-0.031*	-0.035*	-0.038**	-0.018
	(0.331)	(0.330)	(0.334)	(0.307)	(0.018)	(0.018)	(0.019)	(0.017)
$\Delta \log Agriculture_{t-(t-4)}$	-0.109	-0.090	0.025	-0.008	-0.004	-0.003	0.005	0.000
	(0.261)	(0.261)	(0.263)	(0.238)	(0.014)	(0.014)	(0.014)	(0.013)
$\Delta \log Construction_{t-(t-4)}$	0.263	0.286	0.306	0.119	0.019	0.020	0.020	0.010
	(0.364)	(0.364)	(0.367)	(0.315)	(0.020)	(0.020)	(0.020)	(0.018)
log number of firms	0.760	0.845	0.701	0.133	0.032	0.038	0.031	-0.003
	(0.600)	(0.600)	(0.586)	(0.559)	(0.032)	(0.032)	(0.032)	(0.030)
log average firm size	0.674	0.762	0.546	0.015	0.037	0.043	0.034	-0.000
	(0.836)	(0.832)	(0.820)	(0.756)	(0.045)	(0.045)	(0.045)	(0.041)
log number of SOEs	-0.863	-0.961*	-0.915	-0.927*	-0.037	-0.042	-0.038	-0.042
	(0.563)	(0.566)	(0.559)	(0.525)	(0.030)	(0.030)	(0.030)	(0.028)
Age	-0.040**	-0.029*	-0.029*	0.296	-0.002**	-0.001	-0.001	0.015
	(0.016)	(0.017)	(0.017)	(0.245)	(0.001)	(0.001)	(0.001)	(0.013)
Size	2.589***	2.625***	2.602***	3.405***	0.101***	0.103***	0.101***	0.152***
	(0.109)	(0.108)	(0.109)	(0.115)	(0.006)	(0.006)	(0.006)	(0.007)
Leverage	10.177***	10.167***	10.202***	5.719***	0.487***	0.486***	0.488***	0.263***
	(0.655)	(0.653)	(0.660)	(0.490)	(0.036)	(0.035)	(0.036)	(0.027)
Profitability	-7.940**	-8.143***	-7.388**	-6.308***	-0.321*	-0.327**	-0.291*	-0.298***
	(3.087)	(3.096)	(3.210)	(1.880)	(0.164)	(0.164)	(0.170)	(0.101)
Tangibility	2.141***	2.302***	2.359***	1.618***	0.106***	0.112***	0.117***	0.089***
	(0.664)	(0.670)	(0.683)	(0.582)	(0.036)	(0.036)	(0.037)	(0.032)
MB	-0.044*	-0.045**	-0.050**	0.095***	-0.003***	-0.003***	-0.004***	0.005***
	(0.022)	(0.023)	(0.023)	(0.013)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	88,770	88,770	88,770	88,770	88,770	88,770	88,770	88,770
R-squared	0.313	0.314	0.332	0.570	0.224	0.225	0.246	0.503
Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry × Quarter FE	NO	NO	YES	NO	NO	NO	YES	NO
Firm FE	NO	NO	NO	YES	NO	NO	NO	YES
N clusters	784	784	784	784	784	784	784	784

Notes: The unit of observation is a firm quarter. The time period is 2006Q1 to 2017Q4. 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 payed for investment in the quarter. Loan amount is transformed by log(1+x) and winsorized at 0.01. Firm controls are defined at time $t-1$. Standard errors in parentheses are clustered at province-industry level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 7: Real Outcomes: Cash Ratio and Investment

VARIABLES	Cash Ratio				Investment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After SpecialCourt	-0.005*	-0.019***	-0.017***	-0.022***	0.662***	1.331***	1.203***	1.640***
	(0.003)	(0.004)	(0.004)	(0.004)	(0.181)	(0.206)	(0.203)	(0.203)
After SpecialCourt × I(SOE)		0.033***	0.026***	0.037***		-1.603***	-1.294***	-2.085***
		(0.005)	(0.005)	(0.004)		(0.281)	(0.295)	(0.235)
I(SOE)		-0.003	-0.002	-0.002		-0.986***	-1.044***	-0.295
		(0.004)	(0.004)	(0.006)		(0.196)	(0.199)	(0.262)
$\Delta \log GRP_{t-(t-4)}$	-0.025***	-0.022***	-0.016**	-0.023***	0.403	0.304	0.033	0.311
	(0.007)	(0.007)	(0.006)	(0.006)	(0.407)	(0.403)	(0.381)	(0.377)
$\Delta \log Agriculture_{t-(t-4)}$	-0.001	-0.001	-0.003	-0.002	0.030	0.068	0.083	0.039
	(0.005)	(0.005)	(0.004)	(0.005)	(0.337)	(0.337)	(0.340)	(0.325)
$\Delta \log Construction_{t-(t-4)}$	-0.019***	-0.020***	-0.014**	-0.023***	-0.062	-0.010	-0.213	0.141
	(0.007)	(0.007)	(0.006)	(0.007)	(0.397)	(0.395)	(0.365)	(0.397)
log number of firms	0.027**	0.023*	0.021*	0.037***	0.322	0.403	0.404	0.164
	(0.012)	(0.012)	(0.011)	(0.012)	(0.642)	(0.635)	(0.602)	(0.636)
log average firm size	0.004	-0.000	0.005	0.018	0.507	0.566	0.503	0.274
	(0.016)	(0.016)	(0.014)	(0.016)	(0.785)	(0.772)	(0.743)	(0.771)
log number of SOEs	-0.032***	-0.029***	-0.028***	-0.030***	-0.326	-0.508	-0.571	-0.793
	(0.011)	(0.011)	(0.010)	(0.011)	(0.653)	(0.640)	(0.588)	(0.603)
Age	-0.002***	-0.002***	-0.003***	-0.009**	0.002	0.034**	0.042***	0.351
	(0.000)	(0.000)	(0.000)	(0.004)	(0.015)	(0.015)	(0.015)	(0.216)
Size	-0.002	-0.002	-0.001	-0.014***	2.289***	2.405***	2.402***	2.085***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.078)	(0.078)	(0.079)	(0.099)
Leverage	-0.157***	-0.157***	-0.152***	-0.148***	-4.114***	-4.162***	-4.186***	-3.147***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.359)	(0.350)	(0.355)	(0.406)
Profitability	0.379***	0.379***	0.393***	0.243***	6.676***	5.947***	6.436***	2.837*
	(0.053)	(0.053)	(0.056)	(0.036)	(2.213)	(2.226)	(2.336)	(1.669)
Tangibility	-0.228***	-0.230***	-0.231***	-0.252***	-7.004***	-6.540***	-6.564***	-4.071***
	(0.011)	(0.011)	(0.012)	(0.013)	(0.515)	(0.516)	(0.531)	(0.501)
MB	0.001	0.001*	0.001**	-0.000	0.009	0.007	-0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.014)	(0.014)	(0.014)	(0.013)
Observations	88,770	88,770	88,770	88,770	88,770	88,770	88,770	88,770
R-squared	0.325	0.327	0.357	0.611	0.200	0.205	0.227	0.396
Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Province FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry × Quarter FE	NO	NO	YES	NO	NO	NO	YES	NO
Firm FE	NO	NO	NO	YES	NO	NO	NO	YES
N clusters	784	784	784	784	784	784	784	784

Notes: The unit of observation is a firm year. The time period is 2006Q1 to 2017Q4. Cash ratio is defined as cash and cash equivalents to total asset, winsorized at 0.01. Investment is defined as the cash payed for investment in the quarter, transformed by log(1+x) and winsorized at 0.01. Firm controls are defined at time $t-1$. Standard errors in parentheses are clustered at province-industry level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 8: "Zombie" Firms and Specialized Courts

VARIABLES	Share of zombie firms	
	(1)	(2)
After SpecialCourt	-0.0139*	-0.0140*
	(0.00727)	(0.00727)
$\Delta \log GRP_{t-(t-4)}$		-0.00681
		(0.0155)
$\Delta \log Agriculture_{t-(t-4)}$		-0.00499
		(0.0176)
$\Delta \log Construction_{t-(t-4)}$		-0.0150
		(0.0152)
Observations	1,483	1,483
R-squared	0.604	0.604
Time FE	YES	YES
Province FE	YES	YES
Weight	Firm Number	Firm Number
N clusters	31	31

Notes: The unit of observation is a province quarter. The time period is 2006Q1 to 2017Q4. The outcome variable is the share of zombie firms in the province that year. A firm is defined as "zombie" when the actual interest rate it paid is 0.25% lower than the minimum interest rate calculated by its debt and bond in balance sheet, given the current interest rate, following Caballero et al. (2008), and its productivity is lower than median. Standard errors in parentheses are clustered at province level. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Appendix: Additional Figures and Tables

Table A1: Interest Rate Spread

VARIABLES	(1)	(2)
After SpecialCourt	-0.617**	-0.593
	(0.259)	(0.373)
After SpecialCourt × I(SOE)		-0.060
		(0.486)
I(SOE)		-0.529
		(0.388)
$\Delta \log GRP_{t-(t-4)}$	-0.717	-0.811
	(0.676)	(0.664)
$\Delta \log Agriculture_{t-(t-4)}$	-0.458	-0.465
	(0.714)	(0.727)
$\Delta \log Construction_{t-(t-4)}$	1.382	1.475
	(1.066)	(1.068)
log number of firms	3.181*	2.770
	(1.672)	(1.759)
log average firm size	2.966	2.498
	(2.005)	(2.063)
log number of SOEs	-0.712	-0.450
	(1.360)	(1.402)
Age	-0.011	-0.006
	(0.025)	(0.027)
Size	-0.336***	-0.309***
	(0.105)	(0.110)
Leverage	1.987**	2.123**
	(0.805)	(0.820)
Profitability	-1.665	-2.596
	(4.831)	(5.031)
Tangibility	-3.659***	-3.359***
	(0.796)	(0.857)
MB	0.049	0.043
	(0.035)	(0.035)
Observations	1,462	1,462
R-squared	0.510	0.515
Quarter FE	YES	YES
Industry FE	YES	YES
Province FE	YES	YES
Industry × Quarter FE	NO	NO
Firm FE	NO	NO
N clusters	238	238

Notes: The unit of observation is a loan. The time period is 2006Q1 to 2017Q4. Firm controls are defined at time $t-1$. Standard errors in parentheses are clustered at province-industry level. Significance level: *** p<0.01, ** p<0.05, * p<0.1