Going Bankrupt in China*

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Abstract

In many developing countries courts are inefficient and plagued by political influence. We exploit the staggered introduction of courts specialized in bankruptcy across Chinese cities as a shock to political influence on judicial decisions. Specialized courts are run by more experienced and better trained judges that are less likely to be under the influence of local politicians. Using a new case-level dataset on bankruptcy filings we find that the introduction of specialized courts leads to higher liquidation of state-owned firms controlled by local (but not central) government, lower share of zombie firms, and higher capital productivity of local firms.

Keywords: Political influence; Financial distress; Specialized Courts; Zombie firms; Court efficiency.
JEL Classification: G33, G34, K22.

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1 Introduction

The lack of an efficient and independent judicial system is a major obstacle to economic and financial development. In many developing countries, for example, courts are seldom well functioning and plagued by political influence.[1] This issue is particularly prominent in China, where local courts traditionally suffer from the interference of local governments when dealing with bankruptcy cases.[2] In particular, local politicians have strong incentives to keep in operation low-productivity and financially distressed state-owned firms in order to contain unemployment, avoid social unrest and promote their political careers. Government's protection of insolvent but politically connected firms through preferential credit lines or bailouts has been documented in several countries (Faccio, Masulis, and McConnell 2006) and shown to be conductive of a distorted allocation of resources across firms.[3] Still, there is scarce direct empirical evidence on how political influence on courts can shape this process.

This paper aims at closing this gap in the literature by providing micro-based evidence on how political influence on courts affects bankruptcy resolution in China. China is an ideal laboratory to study this question. Until recent years, bankruptcy cases in China were filed in local civil courts, which operate under the oversight of local party officials (Henderson 2007). In the last decade, however, the central government has promoted the introduction of courts specialized in bankruptcy across Chinese cities. Differently from normal civil courts, specialized courts are run by more experienced and better trained judges that are less likely to be under the influence of local governments. This allows us to exploit the introduction of such courts as a source of variation in local political influence on judicial decisions on bankruptcy cases.

Our empirical analysis exploits the staggered introduction of specialized courts across Chinese cities. Specifically, the new courts were introduced at different times in different

[1] See Djankov, Hart, McLiesh, and Shleifer (2008) and Dakolias (1999) on differences in court efficiency across countries. See the 2007 Global Corruption Report of Transparency International (Rodriguez and Ehrichs 2007) for an analysis of political interference on judges and courts in developing countries.

[2] See Fan, Huang, and Zhu (2013). See also Henderson (2007) on the relationship between the Chinese judicial system and the Communist Party more generally.

[3] See, among others, Khwaja and Mian (2005) and Caballero, Hoshi, and Kashyap (2008).

cities between 2007 and 2017. We start by showing that the timing of their introduction is uncorrelated with pre-existing trends in different measures of local economic performance such as past growth in local GDP, unemployment or number of firms. In addition, to study the effects of specialized courts on judicial outcomes, we construct a new dataset covering 1,285 bankruptcy cases of medium-to-large non-publicly listed firms 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, identity of the judges and the trustees assigned to the case, and bankruptcy outcomes. We then manually collect information on judges, including their education and past experience in bankruptcy cases.

First, we focus on the effect of specialized courts on judicial outcomes. 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. We also find that cases filed in specialized courts have shorter resolution time compared with those filed in normal civil courts. In particular, with the introduction of specialized courts, the average case duration decreased by approximately 100 to 120 days – which corresponds to 21 percent of average duration in our sample.

At the court level, we find that specialization led to both an increase in bankruptcy filings and an increase in bankruptcies of state-owned enterprises (SOEs). Our estimates indicate that courts that became specialized experienced a 9.4 percentage points larger increase in the share of cases regarding SOEs. Additionally, we reconstruct the ownership structure of the SOEs in our sample. We classify them into local SOEs – those owned by local governments – and central SOEs – those owned by the central government. We find that our results are uniquely driven by SOEs owned by local governments, while there is no differential effect of court specialization on the share of cases regarding centrally controlled SOEs. 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. However, they also suggest a differential impact of court specialization on different types of SOEs, whereby those owned by the central government can still be protected from liquidation.

Next, we study the effect of specialized courts on the local economy. In particular, we focus on their effect on the number of zombie firms in operation in a given city as well as the average capital productivity of local firms. Following Caballero et al. (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. 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. Consistently, we find that cities that introduced specialized courts experienced a larger increase in the average product of capital across all firms operating in the local economy.

Then, we study the implications of specialized courts on credit markets. Two potential effects are at work here. First, as described above, specialized courts reduced the time to resolve insolvency, allowing to better preserve the value of the assets 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 limiting the ability of local politicians to "protect" state-owned firms in financial distress, the introduction of specialized courts increases the probability of liquidating inefficient SOEs. Thus, if loans to (local) SOEs stopped being perceived as guaranteed by the government, 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. Using firm-level data from the China Stock Market and Accounting Research (CSMAR) dataset – which covers publicly traded firms – we find no effect of introducing specialized courts 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. Notice that these effects are exclusively driven by SOEs controlled by local governments, while we find no effect on those controlled by the central government. Our evidence is also consistent with privately-owned firms benefiting from the introduction of new courts in terms of access to bank lending, although these effects are not statistically significant.

Finally, we also study the impact of specialized courts on firm investment. We find that new capital investment decreased for SOEs while it increased for private firms after introduction of courts specialized in bankruptcy. Consistently, we document that privately-owned firms decreased their internal cash holdings to finance new investment, while SOEs held on to more cash, potentially as a safety net against default. This is consistent with our finding on the share of zombie firms operating at city level. In particular, a 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 indicate that the introduction of specialized bankruptcy courts in China – which tend to employ more experienced, better trained and more efficient judges – favored the transition towards an insolvency resolution system that is less influenced by local politicians and able to liquidate financially distressed local SOEs. This has led to a relative decrease in the number of zombie firms and an increase in average capital productivity in cities that introduced such courts. At the same time, our results are entirely driven by SOEs controlled by local governments, suggesting that large SOEs controlled by the central government still enjoy a political protection that shields them from liquidation irrespective of their performance.

Related Literature

Our paper is linked to several literatures. First, the literature on law and finance. The seminal papers in this literature have showed – using cross-country variation – that a country's legal and judicial infrastructure can shape the development of its financial markets (La Porta, Lopez-de Silanes, Shleifer, and Vishny 1997, La Porta, Lopez-de

Silanes, Shleifer, and Vishny 1998; Djankov et al. 2008; Claessens and Klapper 2005; Safavian and Sharma 2007). Recent work in this literature has focused on 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 also exploits micro data and within-country variation. Our contribution in this sense is twofold. First, we present, to the best of our knowledge, the first micro-level evidence on the role of judicial institutions in bankruptcy resolution in China. Second, the use of case-level data on bankruptcies filed in Chinese courts allows us to better identify the channel through which institutional changes can affect financial and real outcomes.

Second, our paper is related to the political economy literature on the value of firms' political connections. Faccio et al. (2006) show that politically connected firms are more likely to be bailed out by the government when in financial distress relative to similar but not politically-connected firms.[4] Relatedly, preferential lending by state-owned banks to politically connected firms – and its real effects – has been documented in Sapienza (2004) and Carvalho (2014). Several papers have also shown that political concerns can directly or indirectly affect lenders' behavior even in advanced economies (Agarwal, Amromin, Ben-David, and Dinc 2018, Mian, Sufi, and Trebbi 2010). Relative to this literature, our paper focuses on political interference on judicial decisions – which is widespread in developing countries (Rodriguez and Ehrichs, 2007) – and how court specialization can mitigate its effects.

Finally, our paper is related to recent work on the development of the Chinese financial system and the role of state-owned firms. In particular, several recent papers have focused on the drivers and consequences of the Chinese credit boom that followed the 2009-2010 stimulus plan. Part of this literature has focused on the allocative effects of the credit boom across firms with different connections to the government (Cong et al. 2018, Huang,

[4]On this, see also Cong, Gao, Ponticelli, and Yang (2018) in the context of China. Consistently, Fisman (2001) and Faccio (2006) show how the market value of politically connected firms is more sensitive to political events relatively to non-politically connected firms, especially in developing countries.

Pagano, and Panizza 2016, Bai, Hsieh, and Song 2016), while other papers have focused on the institutional drivers of the rise in shadow banking (Hachem and Song 2016, Chen, He, and Liu 2017, Wang, Wang, Wang, and Zhou 2016). Our paper complements this literature by investigating the role and evolution of the bankruptcy system that is in charge of resolving the growing amount of corporate debt that is becoming insolvent in the aftermath of the credit boom.

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 on bankruptcy in China. Section 4 presents the identification strategy and describes the main empirical results. Section 5 concludes.

2 Institutional Setting: Bankruptcy in China

In the last decade, China experienced two major changes of its bankruptcy system. First, in 2007, the Chinese government introduced a new bankruptcy law with the objective of strengthening the protection of both domestic and foreign creditors. Second, in the decade between 2007 and 2017, Chinese cities introduced courts specialized in bankruptcy proceedings. In this section we briefly describe these two changes to the Chinese bankruptcy system in more detail.

2.1 Bankruptcy Law

Until 2007, insolvency in China was resolved under the 1986 Republic of China Bankruptcy Law, which focused exclusively on how to address insolvency of state-owned enterprises (SOEs).[5] 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

[5]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.

decrees specifying that payment of resettlement costs and other benefits for employees of bankrupt SOEs had priority over secured creditors (Booth 2008).[6] 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 with the primary objective of maintaining social stability and preventing social protests.

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 legislation, thus providing a unified legal insolvency framework for China.[7] 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).[8] 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 become too lengthy.[9] 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

[6]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).

[7]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.

[8]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).

[9]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.

largest SOEs.[10]

Despite the substantial changes in legal rules, the available data suggests that the 2007 bankruptcy law had a limited impact on recovery rates of secured creditors. 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 for these years). 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 often wait to obtain the "consent" of the local government to start an official bankruptcy procedure (Fan et al. 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. Overall, even after the introduction of the new bankruptcy law, the judicial system remained largely ineffective in handling bankruptcy cases.

[10]For 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.

2.2 Introduction of Specialized Bankruptcy Courts

After the introduction of the new bankruptcy law in 2007, a few Chinese cities started a first phase of introduction of courts specialized in bankruptcy cases. In November 2014, the Supreme Court formulated a recommendation to introduce courts specialized in bankruptcy across China and provided official guidelines for such introduction. In the two years after the formulation of the Supreme Court's guidelines – between December 2014 and May 2016 – a second phase of introduction of specialized courts took place, including courts in the following provinces: 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.[11] The 97 specialized courts include 3 higher people court, 63 intermediate courts, and 31 people's courts (INSOL 2018).

The specialized courts brought fundamental changes to the judicial system in China. Before their introduction, 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. Trustees are 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 creditors' vote in remote areas. This alleviated creditor coordination problems that existed under

[11] The Guizhou province, Tibet autonomous region and Ningxia Hui autonomous region have not yet courts specialized in bankruptcy.

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 local government influence in bankruptcy resolution. For example, creditor committee may vote against any proposal by the local government merely seeking to keep the firm alive for political reasons, which could have adverse effects on firm value.

The decision to introduce a specialized court – or better, to convert an existing civil court into a court specialized in bankruptcy – is taken at local level. In particular, the local judiciary makes the proposal to introduce a specialized court, which then has to be approved by the Supreme Court. Although this is, at least formally, an initiative of the local judicial system, this initiative is usually coordinated with the local government itself. The widespread introduction of specialized courts across Chinese cities suggests that local politicians were willing to accept limits to their influence on the local insolvency process, possibly because being at the forefront of reforming the bankruptcy resolution system can be rewarded with higher career opportunities.

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. According to the interviewees, the decision to introduce specialized courts mostly reflected the political will of local government officials, either because of career concerns or because they were in need of specialized judges for a large bankruptcy case capturing the attention of local media. In the next section we will test more formally a large set of potential determinants of the timing of introduction of specialized courts.

[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 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.

[12]There 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.

[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%.

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 a 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.

[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.

[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] 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

[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.

estimate our baseline specification at different levels: case-level, court-level, city-level and firm-level. To describe the identification strategy, in this section we focus on our baseline specification at firm-level, which is as follows:

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

where i indexes a firm, c indexes the city in which the firm is headquartered, 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 $(AfterSpecialCourt)_{ct}$ 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.

The main concern with this identification strategy is that the timing and location of the introduction of specialized courts is 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. Alternatively, specialized courts might be introduced first in cities where local 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 correlations with pre-existing economic trends would bias our estimates of the effect of the introduction of specialized courts on judicial outcomes – such as the number of bankruptcy cases – as well as local economic outcomes such as number of firms, capital productivity or bank

[18]The 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.

lending.

To explore the extent of this concern, in Table 2 we estimate a discrete time hazard model testing whether differences in economic trends 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. Similarly, the contemporaneous levels of GRP, population and unemployment have no predictive power on the timing of introduction. Still, in the empirical analysis, we show that our results are robust to adding these controls at city-level in all specifications.

[Table 2 here]

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 makes 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 cases 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(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 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

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

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

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 courts, 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 in column (4) indicates that courts that became specialized handled 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. This is because creditors expect their rights to be better enforced by such courts.

To qualify this result, we reconstruct the ownership structure of the SOEs in our sample of bankruptcy cases. This allows us to classify them into local SOEs – those where the city, township or provincial governments own a majority stake – and central SOEs – those owned by the central government. Our results indicate that the increase in the share of SOEs' bankruptcies is limited to locally owned SOEs, while there is no differential effect of court specialization on centrally controlled SOEs (see columns (5) and (6) of Table 6). This last result suggests that court specialization had a different impact on different types of SOEs, and it is consistent with SOEs owned by the central government being shielded from liquidation even under the new regime.

[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, increased the number of bankruptcy filings and 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 – including private and publicly-traded firms – 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(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 across firms. As shown, we find that cities that introduce courts specialized in bankruptcy experience a 8 percent larger increase in 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 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 located in cities with a specialized bankruptcy court are less likely to be in operation relative to those located 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 percentage points 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, 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 the share of bankruptcy cases regarding local SOEs, higher average capital productivity among local firms and lower survival probability of 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.

In this section we estimate the heterogeneous effects of the introduction of specialized courts on lending and investment of SOEs versus private firms. Prior to the introduction of specialized courts, state-owned firms tend to be more likely to receive local government protection. Thus, to shed some light on how political influence on courts can affect firm-level access to finance and investment, we 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 specifications an interaction of province and quarter fixed effects in order to flexibily account for differential economic performance across Chinese provinces in the period under study. We start by focusing on two main credit outcomes: loan amount (in logs) and access to new loans.

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. In column (2) and (3) we estimate equation 2 for different types of SOEs. In column (2), the dummy $I(SOE)$ captures central SOEs, while in column (3) it captures local SOEs. These results show that the heterogeneous effects of specialized courts on firm borrowing between private and state-owned firms are exclusively driven by local SOEs, while

find statistically insignificant results when focusing on centrally controlled SOEs. These results are consistent with a decreasing pressure from local governments to protect local SOEs from bankruptcy, in line with the evidence provided in Table 6.

[Table 9 here]

Next, we estimate the same specification when the outcome variable is a dummy capturing access to new loans. This dummy is equal to one if firm i gets a new bank loan in quarter t, and zero otherwise. The results shown in columns (4) to (6) follow a pattern consistent with the loan amount outcome. We find heterogeneous effects between SOEs and private firms, and these effects are exclusively driven by local SOEs. In particular, the estimated coefficient on the interaction term reported in column (6) indicates that local SOEs are around 10 percent less likely to receive a new bank loan relative to privately owned firms or central SOEs after the introduction of specialized courts.

Finally, 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 Table 9. 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 Table 8: SOEs received smaller loans in the post-specialized court period, and invested less as a consequence. 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 significantly larger increase in investment. To investigate this further, in column (2) of Table 9 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 (1) for investment. 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 these investments were mostly self-financed. This result is consistent with the real effects shown in Table 7: the reduction in zombie firms in cities that introduced 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 the higher probability of bankruptcy upon default when there is less government protection.

5 Concluding Remarks

In countries that lack independent judicial systems, political influence on courts can distort the allocation of capital by artificially keeping financially distressed state-owned companies alive. China is a nice laboratory to study this question. First, it is a country traditionally characterized by a strong influence of local governments on judicial decisions by local civil courts. Second, in the last decade, Chinese cities started introducing courts specialized in bankruptcy cases, in an effort to make the resolution of insolvency more efficient and professionally managed with less political intervention.

In this paper we exploit the staggered introduction of specialized bankruptcy courts to study their effect on judicial outcomes and the local economy. 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 local state-owned firms, while the incentives to liquidate SOEs controlled by the central government remained unaffected. 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. These findings support that specialized courts decrease the influence of local governments on insolvency procedures. We also find that local state owned firms operating under specialized courts experienced a decrease in bank loan amounts and lower loan issuance, while we find no differential effects for SOEs controlled by the central government.

These results have important policy implications given the large credit boom experienced by China in the last decade and the recent increase in insolvency of corporate debt.[21] Our results indicate that specialized courts – by being less subject to political interference – can facilitate the liquidation of zombie firms and favor the reallocation of resources to more productive firms, at least when it comes to local state-owned firms. Our evidence still shows that insolvency resolution and credit access of SOEs controlled by the central government were largely unaffected by this major institutional reform of the judicial system.

[21] 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. See, among others: Bai et al. (2016), Cong et al. (2018), Hachem and Song (2016), Chen et al. (2017). The corporate bond market experienced the first defaults by a privately owned firm in 2014, and by a state-owned firm in 2015 (Jin, Wang, and Zhang 2018). Gao, Ru, and Tang (2017) document that some local government financing vehicles have started to default on their loans.

References

(2007). "Corruption in Judicial Systems". In D. Rodriguez and L. Ehrichs (Eds.), *Global Corruption Report*. Washington D.C.: Transparency International, Cambridge University Press.

Agarwal, S., G. Amromin, I. Ben-David, and S. Dinc (2018). The politics of foreclosures. *The Journal of Finance 73*(6), 2677–2717.

Bai, C.-E., C.-T. Hsieh, and Z. M. Song (2016). The long shadow of a fiscal expansion.

Booth, C. D. (2008). The 2006 prc enterprise bankruptcy law: The wait is finally over. *SAcLJ 20*, 275.

Bris, A., I. Welch, and N. Zhu (2006). "The Costs of Bankruptcy: Chapter 7 Liquidation versus Chapter 11 Renegotiations". *The Journal of Finance 61*(3), 1253–1303.

Caballero, R. J., T. Hoshi, and A. K. Kashyap (2008). Zombie lending and depressed restructuring in japan. *The American Economic Review 98*(5), 1943–1977.

Carvalho, D. (2014). The real effects of government-owned banks: Evidence from an emerging market. *The Journal of Finance 69*(2), 577–609.

Chen, Z., Z. He, and C. Liu (2017). The financing of local government in china: Stimulus loan wanes and shadow banking waxes. *Working Paper*.

Claessens, S. and L. Klapper (2005). "Bankruptcy around the World: Explanations of Its Relative Use". *American Law and Economics Review 7*(1), 253–283.

Cong, L. W., H. Gao, J. Ponticelli, and X. Yang (2018). Credit allocation under economic stimulus: Evidence from china.

Dakolias, M. (1999). *"Court Performance around the World: a Comparative Perspective"*, Volume 23. World Bank Publications.

Djankov, S., O. Hart, C. McLiesh, and A. Shleifer (2008). "Debt Enforcement around the World". *Journal of Political Economy 116*(6), 1105–1149.

Faccio, M. (2006). Politically connected firms. *American economic review 96*(1), 369–386.

Faccio, M., R. W. Masulis, and J. J. McConnell (2006). Political connections and corporate bailouts. *The Journal of Finance 61*(6), 2597–2635.

Fan, J., J. Huang, and N. Zhu (2013). "Institutions, Ownership Structures, and Distress Resolution in China". *Journal of Corporate Finance 23*(1), 71–87.

Fisman, R. (2001). Estimating the value of political connections. *American economic review 91*(4), 1095–1102.

Gao, H., H. Ru, and D. Y. Tang (2017). Subnational debt of china: The politics-finance nexus.

Gennaioli, N. and S. Rossi (2010). "Judicial Discretion in Corporate Bankruptcy". *Review of Financial Studies 23*(11), 4078–4114.

Hachem, K. C. and Z. M. Song (2016). Liquidity regulation and unintended financial transformation in china.

Henderson, K. (2007). "The Rule of Law and Judicial Corruption in China: Half-Way over the Great Wall". In D. Rodriguez and L. Ehrichs (Eds.), *Global Corruption Report: Corruption in Judicial Systems*. Washington D.C.: Transparency International, Cambridge University Press.

Huang, Y., M. Pagano, and U. Panizza (2016). Public debt and private firm funding: Evidence from chinese cities.

INSOL (2018). Prc enterprise bankruptcy law and practice in china. Technical report.

Jin, S., W. Wang, and Z. Zhang (2018). The value and real effects of implicit guarantees.

Khwaja, A. I. and A. Mian (2005). Do lenders favor politically connected firms? rent provision in an emerging financial market. *The Quarterly Journal of Economics 120*(4), 1371–1411.

La Porta, R., F. Lopez-de Silanes, A. Shleifer, and R. Vishny (1997). "Legal Determinants of External Finance". *Journal of Finance 52*(3), 1131–1150.

La Porta, R., F. Lopez-de Silanes, A. Shleifer, and R. Vishny (1998). "Law and Finance". *Journal of Political Economy 106*(6), 1113–1155.

Mian, A., A. Sufi, and F. Trebbi (2010). The political economy of the us mortgage default crisis. *American Economic Review 100*(5), 1967–98.

Ponticelli, J. and L. S. Alencar (2016). Court enforcement, bank loans, and firm investment: evidence from a bankruptcy reform in brazil. *The Quarterly Journal of Economics 131*(3), 1365–1413.

Rodano, G., N. Serrano-Velarde, and E. Tarantino (2011). "The Causal Effect of Bankruptcy Law on the Cost of Finance". *Mimeo*.

Safavian, M. and S. Sharma (2007). "When Do Creditor Rights Work?". *Journal of Comparative Economics 35*(3), 484–508.

Sapienza, P. (2004). The effects of government ownership on bank lending. *Journal of financial economics 72*(2), 357–384.

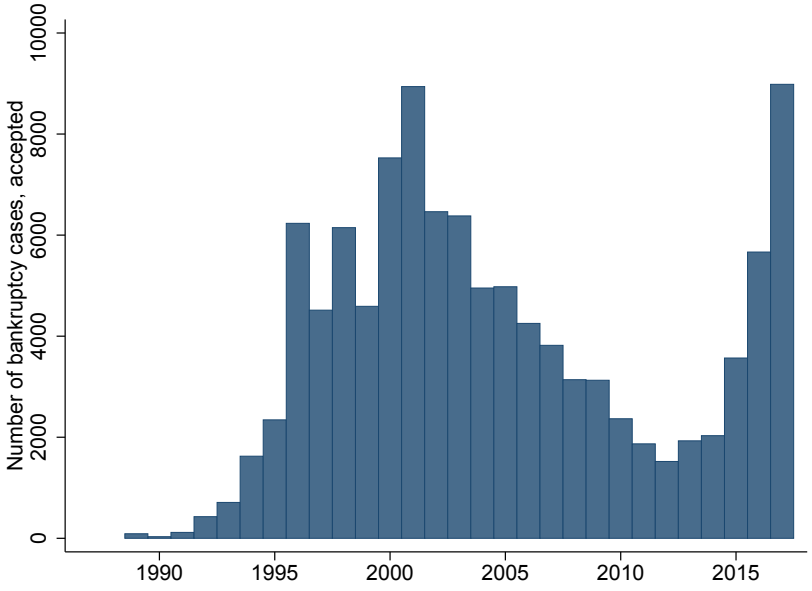
Vig, V. (2013). Access to Collateral and Corporate Debt Structure: Evidence from a Natural Experiment. *Journal of Finance 68*(3), 881–928.

Visaria, S. (2009). "Legal Reform and Loan Repayment: The Microeconomic Impact of Debt Recovery Tribunals in India". *American Economic Journal: Applied Economics 1*(3), 59–81.

Wang, H., H. Wang, L. Wang, and H. Zhou (2016). Shadow banking: China's dual-track interest rate liberalization.

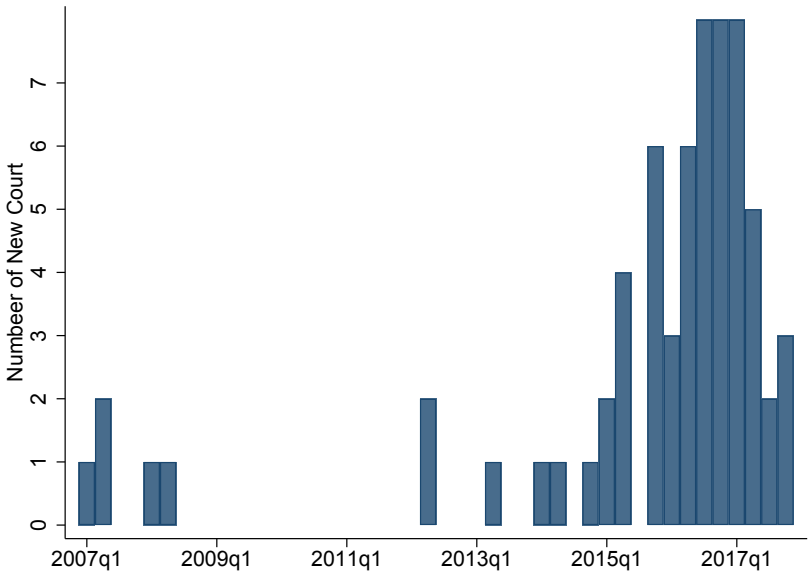
Figures and Tables

Figure 1: Number of bankruptcy cases, accepted



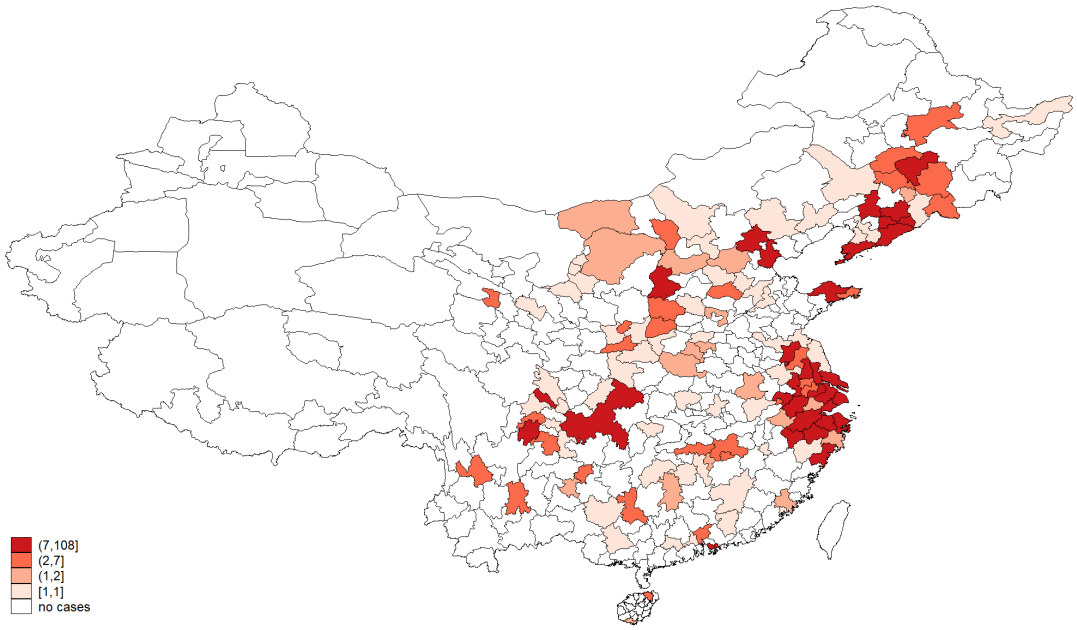
Notes: The Figure shows the number of bankruptcy cases accepted in the country in each year between 1989 and 2017.

Figure 2: Number of first specialized court introduced by quarter



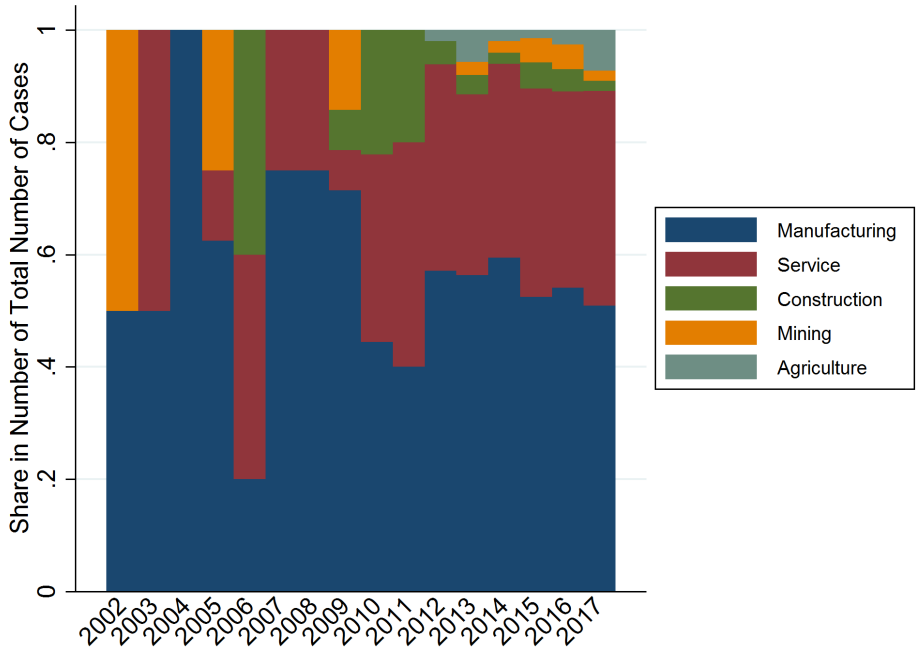
Notes: The Figure shows the number of courts specialized in bankruptcy introduced in each quarter between 2007Q1 and 2017Q4. We focus on the first court introduced in each city.

Figure 3: Distribution of bankruptcy cases by city



Notes: The Figure shows the geographical distribution of bankruptcy cases across Chinese prefecture-level 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
1(SOE)	0.525	1.000	0.499	91,587

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

	Estimate
$\Delta \log$ (GRP per capita)$_t$	2.651
	(3.391)
$\Delta \log$ (GRP per capita)$_{t-1}$	3.257
	(3.339)
Δ (Registered Unemployment)$_t$	-4.571
	(50.060)
Δ (Registered Unemployment)$_{t-1}$	29.192
	(47.682)
$\Delta \log$ (N Firms)$_t$	-1.582
	(3.650)
$\Delta \log$ (N Firms)$_{t-1}$	-5.165
	(3.357)
Δ log (Average Firm Size)$_t$	-0.640
	(3.182)
Δ log (Average Firm Size)$_{t-1}$	3.624
	(2.754)
log (GRP per capita)$_t$	0.787
	(0.606)
(Manufacturing GRP / Total GRP)$_t$	-2.399
	(3.963)
log(Population)$_t$	0.712
	(0.506)
(Registered Unemployment Rate)$_t$	-37.634
	(32.011)

Notes: The unit of observation is a city, N=2,209 in all regressions. The time period is 2007 to 2016. Cox model with time-varying observable city characteristics and province fixed effects. 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 based on case-judge level data. A judge is defined as from an "Elite School" if we found exactly one master thesis in an Elite school under the judge's name on CNKI. Elite Schools are defined as Project 985 universities and the following 5 law schools: CUPL, SWUPL, ZUEL, NWUPL, and ECUPL. The variable is treated as missing if more than one master thesis is found. The experience of judges is measured by the number of bankruptcy cases the judge has previously handled according to China Judgement Online. Panel B and C only include cases initiated 1 year before and after the introduction of specialized courts.

Table 4: Judge-Level Outcomes: Education and Experience

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

Notes: The unit of observation is a case-judge. The time period is 2005Q1 to 2016Q4. City-level controls include: log GRP per capita, log population, industry share in GRP and unemployment rate. 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

outcomes:	Time in Court		
	(1)	(2)	(3)
1(After Special Court)	-103.5*	-117.7*	-122.0**
	(62.17)	(62.45)	(60.86)
1(After Special Court) × 1(SOE)			65.75
			(179.9)
1(SOE)		146.9	128.1
		(106.9)	(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
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

outcomes:	Total bankruptcy cases		Proportion of SOE			
			All SOEs	All SOEs	Central SOEs	Local SOEs
	(1)	(2)	(3)	(4)	(5)	(6)
1(After Special Court)	0.627**	0.627**	0.0928**	0.0939**	0.00902	0.0612**
	(0.311)	(0.312)	(0.0393)	(0.0384)	(0.0191)	(0.0298)
log(GRP per capita)	-0.109	-0.157	0.164**	0.130*	0.0231	0.0997
	(0.228)	(0.238)	(0.0784)	(0.0736)	(0.0227)	(0.0748)
log(Population)	12.47***	12.23***	0.408	0.267	0.0930	0.607
	(2.944)	(2.996)	(0.458)	(0.472)	(0.107)	(0.501)
Share manufacturing in GRP		1.142		0.953	0.0747	0.795
		(1.814)		(0.713)	(0.176)	(0.743)
Registered unemployment / total workers		7.645		2.558	0.417	0.404
		(7.577)		(2.783)	(0.767)	(2.289)
Quarter FE	YES	YES	YES	YES	YES	YES
City FE	YES	YES	YES	YES	YES	YES
Observations	615	615	615	615	615	615
R-squared	0.301	0.302	0.459	0.462	0.280	0.410

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: Number of Firms, Capital Productivity, Zombie Firms

outcomes:	log Number of Firms	log(Output/Fixed Assets)	Share of Zombie Firms
	(1)	(2)	(3)
1(After Special Court)	-0.0156	0.0802**	-0.0219**
	(0.0547)	(0.0359)	(0.00918)
City-level controls	YES	YES	YES
Quarter FE	YES	YES	YES
City FE	YES	YES	YES
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. City-level controls include: log GRP per capita, log population, industry share in GRP and unemployment rate. In column (3) observations are weighted by the number of firms headquartered in a given city. 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

outcomes:	Log Loan Amount			Access to New Loans		
1(SOE) =	All SOEs	Central SOEs	Local SOEs	All SOEs	Central SOEs	Local SOEs
	(1)	(2)	(3)	(4)	(5)	(6)
1(After Special Court)	0.381	0.0223	0.263	0.0194	0.00233	0.0142
	(0.343)	(0.306)	(0.324)	(0.0179)	(0.0159)	(0.0165)
1(After Special Court) × 1(SOE)	-0.770*	0.0470	-2.119***	-0.0371*	0.00185	-0.105***
	(0.402)	(0.734)	(0.615)	(0.0211)	(0.0361)	(0.0328)
1(SOE)	-0.183	-0.107	0.0667	-0.0161	-0.00996	0.000333
	(0.369)	(0.480)	(0.418)	(0.0191)	(0.0245)	(0.0215)
City-level controls	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Province × Quarter FE	YES	YES	YES	YES	YES	YES
Observations	90,308	90,308	90,308	90,308	90,308	90,308
R-squared	0.538	0.538	0.539	0.484	0.484	0.484

Notes: The unit of observation is a firm. The time period is 2005Q1 to 2016Q4. City-level controls include: log GRP per capita, log population, industry share in GRP and unemployment rate. The loan amount variable is defined as the cash received from new loan in the quarter. Loan access is defined as *Loan Amount* > 0. Loan amount is transformed as log(1+x) and 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

Table 9: Firm-level Outcomes: Investment and Cash Reserves

VARIABLES	(1) Log Investment	(2) Cash Ratio
1(After Special Court)	0.930**	-0.0168**
	(0.373)	(0.00771)
1(After Special Court) × 1(SOE)	-2.086***	0.0284***
	(0.377)	(0.00873)
1(SOE)	-0.435	-0.0102
	(0.291)	(0.00685)
City-level controls	YES	YES
Firm FE	YES	YES
Quarter FE	YES	YES
Industry FE	YES	YES
Province × Quarter FE	YES	YES
Observations	86,400	86,400
R-squared	0.376	0.593

Notes: The unit of observation is a firm. The time period is 2005Q1 to 2016Q4. City-level controls include: log GRP per capita, log population, industry share in GRP and unemployment rate. Investment is defined as the cash payed for investment in the quarter, is transformed as log(1+x) and 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