Going Bankrupt in China*

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Abstract

Using a new case-level dataset we document a set of stylized facts on bankruptcy in China and study how the staggered introduction of specialized courts across Chinese cities affects insolvency resolution and the local economy. For identification, we compare bankruptcy cases handled by specialized versus traditional civil courts within the same city and filed in the same year. We find that specialized courts decrease case duration by 36% relative to traditional civil courts. We provide evidence consistent with court specialization increasing efficiency via selection of better trained judges and higher judicial independence from local politicians. We document that cities introducing specialized courts experience a relative reallocation of employment out of zombie-firms-intensive sectors, as well as faster firm entry and a larger increase in average capital productivity.

Keywords: Specialized Courts; Political influence; Court efficiency; Zombie firms.
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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, courts are slow to process cases, lack specialized judges and are subject to political interference.[1] This issue is particularly prominent in China, where local courts traditionally operate under the influence of local governments when dealing with bankruptcy cases.[2] In particular, local party officials have strong incentives to delay liquidation and keep in operation low-productivity and financially distressed firms to contain unemployment, avoid social unrest and promote their political careers. The 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 is shown to be conducive to a distorted allocation of resources across firms.[3] However, there is scarce direct empirical evidence on the role played by the judicial system in shaping the treatment of politically connected firms when they enter financial distress.

We aim to close this gap in the literature by providing micro-based evidence from China. China is an ideal laboratory to study this question. Until recent years, bankruptcy cases were filed in local civil courts, which operate under the oversight of local party officials and tend to be slow to process cases (Henderson 2007). In the last decade, however, China has introduced 106 specialized tribunals and courts across different prefecture-level cities.[4] Compared to traditional civil courts, specialized courts are run by better trained and often newly appointed judges and are part of an effort by the central government to limit local governments' intervention in bankruptcy cases (INSOL 2018).

Our paper has two objectives. First, we construct a new case-level dataset that allows us to shed light on bankruptcy resolution in China. How the second-largest economy in

[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).

[4] In particular, 97 specialized tribunals attached to existing courts and 9 new specialized courts were introduced in China between 2007 and 2020. In what follows we use the term "specialized court" to refer to both tribunals and courts.

the world deals with corporate insolvency has important policy implications, especially in light of the recent increase in corporate defaults following a decade-long debt boom. Still, this question has been so far largely unexplored due to the lack of micro data. Second, we examine the role of two key frictions that can affect court efficiency in resolving insolvency in China: (i) lack of judges' education and specialized training in bankruptcy, and (ii) political influence of local government officials on court decisions, which can result in court delays to avoid liquidation of local firms. While the lack of judges' education and specialized training in bankruptcy is a friction whose effects on credit markets and the real economy have been documented in other contexts, political influence in bankruptcy is a specific friction of the Chinese setting, and its impact on judicial and real outcomes has not been studied by the previous literature. We exploit the introduction of specialized courts as a shock to judicial institutions that mitigates these frictions.

We start by describing the new data. We construct a new dataset covering 2,815 bankruptcy cases filed in China between 2011 and 2020. Our data source is a new online platform created by the Chinese Supreme Court which allows debtors and creditors to monitor the evolution of bankruptcy cases. In addition to firm and court characteristics, the platform provides access to a digitized version of the court documents accompanying each case. We extracted from these digitized documents the dates of the main judicial decisions for each case, the type of case (liquidations vs. reorganizations), the names of the judges in charge of each case and, for a small sample of cases, detailed information on the name of the debtor/creditor that initiate the case and the recovery rates obtained by different classes of creditors.

In the first part of the paper, we present a set of stylized facts on bankruptcy in China. Similar to other emerging economies, the vast majority of Chinese bankruptcies are liquidations (83%). Over half of the cases in our sample involve firms operating in manufacturing, construction and real estate. Liquidation cases are mostly initiated by unsecured creditors, whereas banks – whose claims tend to be secured by some form of collateral – initiate 7.5% of cases. The average duration of bankruptcy cases observed in the data is 1.5 years, around 50% longer than the average duration observed in the US

during the same period according to World Bank data.[5]

Next, we propose an empirical strategy to study how the introduction of specialized courts has affected insolvency resolution. Specialized courts were introduced at different times in different Chinese cities starting in 2007. In the first phase of this reform, the local judiciary of a given city would convert a section of an existing court into a "liquidation and bankruptcy tribunal", which would become specialized in dealing with bankruptcy cases. Between 2007 and 2017, 97 of these specialized tribunals were introduced across different cities in China. In the second phase, which started in 2019, new fully-specialized courts were introduced in 9 large cities.[6]

The main identification challenge is the potential endogeneity in the decision to introduce such courts. For example, cities that introduced specialized courts might be on a different economic cycle, which would also affect the type of firms going bankrupt. To deal with this challenge, we exploit the fact that, even after their introduction, bankruptcy cases were still handled by both traditional civil courts and specialized courts within the same city. This allows us to use a saturated model with city fixed effects interacted with year fixed effects, effectively comparing cases initiated in different courts within the same city and year. Importantly, we show that cases handled by traditional versus specialized courts within the same city and year are strongly balanced along firm and case observable characteristics, including size of the bankrupt firm, sector of operation, or type of filing (reorganizations vs. liquidations), while an important determinant of case allocation across different types of courts is the geographical distance between the location of the firm filing for bankruptcy and the location of the court.

We start our empirical analysis by studying how the introduction of specialized courts affects court efficiency. We document that specialization leads to faster resolution. Case duration in specialized courts is 36% lower than in traditional civil courts when comparing similar cases initiated in the same city and year. This finding corresponds to a decline in case duration of about 200 days.

[5]Doing Business, The World Bank Group (`http://www.doingbusiness.org`), years 2011-2019.

[6]Our empirical results mostly reflect the impact of specialized tribunals because most cases filed in the new specialized courts are still ongoing.

Next, we examine potential channels through which the introduction of such courts can promote efficiency. First, we provide descriptive evidence on the judges hired in specialized courts. We show that judges assigned to specialized courts tend to be newly appointed judges not previously observed in traditional courts and with higher average education. More specifically, we find that judges in specialized courts are about 30 percent more likely to have graduated from an "elite" law school.[7] Second, we examine how the introduction of specialized courts might have affected judicial independence. We propose two tests. First, we focus on observable differences in how judges deal with bankruptcy cases of state-owned firms versus privately owned firms. We think of the judicial treatment of SOEs as a measure of judicial independence from local politicians. We find that the effect of specialization on case duration is significantly larger for bankruptcies of state-owned firms than privately owned firms. Our estimates indicate that specialized courts cut the time to deal with bankruptcies of SOEs by around 220 days *more* than for privately owned firms, a large and statistically significant difference. In particular, the magnitude of our estimates indicate that specialized courts reduce case duration for privately owned firms by around 180 days, and for state-owned firms by 400 days. Second, we study how the effect of specialization on time in court varies across the political cycle of local party officials. The idea behind this exercise is that the incentive of local politicians to delay the liquidation of financially distressed firms and preserve employment might be particularly strong at the end of their term, right before their performance is evaluated for promotion. We document that the effect of specialization on time in court is about twice as large in the late years than in the early years of the term of local party secretaries. Taken together, this evidence suggests that specialized courts decrease the influence of local politicians on judicial decisions in bankruptcy.

Finally, we study the effect of specialized courts on the local economy, intended as the economy of the prefecture-level city. This analysis exploits city-level variation, which does not allow us to exploit variation across courts facing the same city-level shocks. Thus, we rely solely on the staggered introduction of specialized courts across cities as a source

[7]Elite schools include Project 985 universities and the 5 top professional law schools in China: CUPL, SWUPL, ZUEL, NWUPL, and ECUPL.

of identification. To attenuate the concerns associated with the endogenous opening of specialized courts, we estimate a discrete time hazard model that studies whether differences in economic trends at the city level predict the timing of the introduction of specialized courts across cities.[8]

A more efficient and independent bankruptcy system can facilitate the liquidation of low-productivity firms and favor a swifter reallocation of their real assets, their labor force and their market shares to other firms operating in the local economy.[9] To test this hypothesis, we study the impact of specialized courts on the share of local labor employed in industries with a higher diffusion of "zombie" 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. Using data on publicly-listed firms, we rank industries based on the diffusion of zombie firms, and we define industries above the median of this measure as zombie-intensive industries, or Z-industries. Finally, we compute the city-level labor share in Z-industries using data from the *China Statistical Yearbooks*, which cover employment in both publicly listed and private firms. We find that cities that introduced specialized courts experienced a 1.7 percentage points larger decline in the share of labor employed in zombie-intensive industries.

A reduction in the share of resources used by local zombie firms can facilitate entry and – by removing the least productive matches – increase average firm productivity at the city level. We find evidence consistent with this hypothesis in the data. In particular, we find that cities that introduced courts specialized in bankruptcy experienced a 3 percent faster increase in the number of local industrial firms and a 4.5 percent larger increase in average product of capital of local firms relative to cities where insolvency is still resolved exclusively by civil courts.[10]

[8]In particular, we find that the timing of their introduction is uncorrelated with different measures of local economic performance as captured by contemporaneous and lagged changes in GDP per capita, number of bankruptcy filings, number of firms, average firm size and share of manufacturing in local GDP.

[9]See Bernstein, Colonnelli, and Iverson (2019) for US-based evidence on asset reallocation in bankruptcy.

[10]Note that more efficient enforcement can effect real outcomes also via financial development. In particular, by increasing the expected recovery rate of creditors, faster enforcement can promote lending to firms that operate under specialized courts (Visaria 2009). Such an increase in lending has an ambiguous impact on average capital productivity at the city level. On one hand, more capital availability can allow

Overall, our findings indicate that the introduction of specialized bankruptcy courts in China favored the transition towards an insolvency resolution system that is more efficient and independent from political influence.

Related Literature

Our paper is related to several literatures. First, the literature on law and finance. The seminal papers in this literature show – 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 focuses 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, Iverson 2017, Ponticelli and Alencar 2016, Rodano, Serrano-Velarde, and Tarantino 2011, Müller 2019), or the effect of specific legal reforms that target creditor rights on bank lending decisions (Vig 2013).[11] Similar to these works, our paper exploits micro data and within-country variation. Our contribution relative to this literature 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. In particular, our paper provides direct empirical evidence on the effects of specialized courts on case duration and judicial treatment of politically connected firms.

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

previously credit constrained but highly productive entrepreneurs to enter the market or existing firms to adopt better technologies and become more productive. On the other hand, a shift in credit supply can lead to the financing of more marginal projects, lowering average capital productivity. Unfortunately, we currently do not have access to bank lending data covering the period under study in this paper. For example, the Chinese Banking Regulatory Commission data on bank loans used, among others, in Cong, Gao, Ponticelli, and Yang (2019), covers loans to non-publicly listed companies originated up to 2013, before most specialized courts were introduced.

[11] See also Iverson, Madsen, Wang, and Xu (2018) and Coviello, Ichino, and Persico (2014) on the effect of judicial experience and work practices on judicial productivity.

likely to be bailed out by the government when in financial distress than similar but non-politically-connected firms.[12] 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 both widespread and largely understudied in developing countries – and how court specialization and better judges' training 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. 2019, Huang, 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 2020, 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 and the role of specialized courts. In section 3 we describe the new case-level dataset used in the paper and present a set of new stylized facts on bankruptcy in China that can be observed in the data. Section 4 presents the identification strategy and describes the main empirical results. Section 5 concludes.

[12]See also Cong et al. (2019) in the context of China. Fisman (2001) and Faccio (2006) show how the market value of politically connected firms is more sensitive to political events than non-politically connected firms, especially in developing countries.

2 Institutional Setting: Bankruptcy in China

In the last decade, China experienced two major changes in its bankruptcy system. First, in 2007, the Chinese government introduced a new bankruptcy law with the objective of strengthening the protection of 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 and Frictions in Traditional Civil Courts

Until 2007, insolvency in China was resolved under the 1986 People's Republic of China Bankruptcy Law, which focused exclusively on how to address insolvency of state-owned enterprises (SOEs).[13] The text of the old bankruptcy law states that secured creditors have first priority in the order of repayment, followed by workers, tax claims and general unsecured creditors (art. 32). However, during the 1990s, the State Council issued two decrees specifying that payment of resettlement costs and other benefits for employees of bankrupt SOEs had priority over secured creditors (Booth 2008).[14] These deviations from the wording of the 1986 bankruptcy law made the Chinese bankruptcy regime particularly unfriendly to secured creditors, 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 US and Europe. The new law was enacted in June of 2007, replacing the 1986 law and all other local insolvency legislation, thus providing a unified legal insolvency framework for China.[15]

[13]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. "Shenzhen 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.

[14]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).

[15]The drafting of the Chinese bankruptcy law started in 1994; the draft was amended and revised

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).[16] 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), that resembles Chapter 11 of the US 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 for mandatory liquidation of firms that are in severe financial distress and whose bankruptcy proceedings become too lengthy – regardless of government ownership. In particular, when judges deem the likelihood of survival to be very low, they can decide to bypass the reorganization procedure completely and move to liquidation directly. The objective of this provision was to shorten bankruptcy proceedings and guarantee higher recovery to creditors' claims on non-viable firms.

Despite the substantial changes in bankruptcy rules, the enforcement by traditional civil courts has remained problematic. This experience is, in part, a common one in developing countries that are in the process of reforming their bankruptcy institutions: bankruptcy cases involve complex legal, social, and economic challenges which many local civil courts lack the resources to handle. In particular, two key frictions affect the efficiency of bankruptcy resolution in Chinese traditional civil courts: the lack of judges' education and specialized training in bankruptcy, and the tendency of local party officials to protect financially distressed firms from bankruptcy, which can result in court delays to avoid liquidation of local firms.

Although the lack of specialized training and education of judges is a common issue in many countries, political influence is a specific friction in Chinese bankruptcy institutions. At the source of this friction is the fact that local government officials in China have an incentive to avoid or delay the liquidation of local firms because of the political costs they

several times until its final approval in 2006. See Booth (2008) for a detailed description of the drafting process of the new law.

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

bear for higher unemployment or social unrest. In this sense, bankruptcy proceedings of state-owned firms, can be particularly costly because these firms tend be large and labor-intensive, and local governments have to carry the financial and social costs associated with resettling employees when one of such firms is liquidated (INSOL 2018). Previous literature has also discussed how, in many instances, Chinese firms in financial distress might actually wait to obtain the "consent" of the local government to start an official bankruptcy procedure (Fan et al. 2013).

2.2 Introduction of Specialized Bankruptcy Courts

In the decade following the introduction of the 2007 bankruptcy law, the Chinese central government started promoting a slow shift from a policy-mandated bankruptcy system – in which the government largely decides which companies fail or survive – to a more "market-oriented" bankruptcy system, in which market forces determine the winners and losers. A key part of this process was the introduction of courts specialized in handling bankruptcy cases, which we describe in detail in what follows.

Consistent with the Chinese gradualistic approach to reforms (Brunnermeier, Sockin, and Xiong, 2017), the process of specialization of the judiciary happened in subsequent stages. The initial stage consisted in the introduction of bankruptcy tribunals. These tribunals – whose Chinese name translates to "Liquidation and Bankruptcy Tribunal" – are specialized sections of existing courts. In that sense, they are not separate, independent new courts, but specialized tribunals operating within a pre-existing civil court. This initial stage started in the mid-2000s after the approval of the 2007 new bankruptcy law, and initially involved just a handful of Chinese cities. In November 2014, the Supreme Court formulated a recommendation to introduce specialized tribunals across China and provided official guidelines for the introduction. This recommendation followed the Fourth Plenum of the Chinese Communist Party, which focused on strengthening rule of law, including via a reduction of the power of local party officials to control and influence local courts. In the years after the formulation of the Supreme Court's guidelines – between December 2014 and May 2016 – specialized tribunals were introduced in several cities

in the provinces of Beijing, Shanghai, Tianjin, Hebei, Jilin, Jiangsu, Zhejiang, Anhui, Hubei, Hunan, and Guangdong. By December 2017, China had 97 specialized tribunals, and almost all Chinese provinces had at least one.[17]

The second stage of this specialization process of the Chinese judiciary started in 2019 with the introduction of bankruptcy courts. Unlike the tribunals, these are brand-new courts created ad-hoc to handle bankruptcy cases. Between January 2019 and June of 2020, nine of such courts have been introduced in China's major cities, including: Shenzhen, Beijing, Shanghai, Tianjin, Guangzhou, Wenzhou, Zhejiang, Chongqing and Nanjing. In the rest of the paper, we use the term specialized courts to refer to both specialized tribunals within existing civil courts and brand-new specialized courts.

The main innovation brought by specialized courts to the old regime has been the selection of judges with specialized training in bankruptcy. As we document in the paper, judges hired to preside over bankruptcy cases in specialized courts are more likely to be graduates from China's elite law schools. We also document that about two-thirds of judges hired in newly created specialized tribunals are newly appointed judges and were not reallocated from traditional civil courts. Even when courts hire judges internally, the guidelines for specialized courts indicate that hiring should focus on "*judges with outstanding experience in handling liquidation and corporate bankruptcy cases*". The selection of better-educated and often new judges aimed not only at improving the quality and efficiency of judicial decisions but also at alleviating political capture by local government officials.

Finally, note that the faster pace of introduction of specialized tribunals in the post-2014 period corresponds to an increase in the overall number of bankruptcy filings in China. This increase is visible in the aggregate data reported in Figure 1. Academics and policymakers have associated this increase in insolvency with the boom in corporate debt that Chinese markets have experienced in the last decade. Several factors have contributed to this debt boom: the stimulus policies of 2009-2010 – which fostered bank

[17] In June 2016, the Supreme Court formally required all provinces to have at least one court specialized in bankruptcy cases. The Guizhou province, Tibet autonomous region, and Ningxia Hui autonomous region are the only ones still without one. The 97 specialized courts include 3 higher people court, 63 intermediate courts, and 31 people's courts (INSOL 2018).

credit and promoted local government financing vehicles – , the expansion of a corporate bond market, and the fast growth of shadow banking.[18] The increase in defaults that started in the middle of the decade has also been documented in the corporate bond market, which experienced the first defaults by a privately owned company in 2014, and by a state-owned company in 2015 (Jin, Wang, and Zhang, 2018; Amstad and He, 2020). Local government financing vehicles also started to experience defaults on their loans in the same period (Gao, Ru, and Tang, 2021). This wave of credit events has tested the ability of Chinese bankruptcy institutions to deal with insolvency, exposing the limits of traditional courts in the implementation of the 2007 new bankruptcy code and raising the necessity of judicial institutions specialized in bankruptcy.

[Figure 1 around here]

3 A new dataset of bankruptcy cases in China: Data and stylized facts

Our empirical analysis is based on a new case-level dataset of bankruptcies filed in Chinese courts between 2011 and 2020. We sourced case-level information from the "National Corporate Bankruptcy Information Disclosure Platform", an online platform launched in 2016 by the Chinese Supreme's People Court that allows debtors and creditors to monitor the evolution of bankruptcy cases.[19] For each case, the online platform reports the name of the company filing for bankruptcy, the name of the court in which the case was filed, the current status of the case, and the province, sector, size and ownership category of the bankrupt firm.

The platform also offers access to the text of the court documents accompanying each case. Court documents include the text of the rulings made by the judges in charge of each case, as well as any communications from the bankruptcy administrators to the parties involved in the case.[20] Using text analysis, we extracted from these court documents the

[18] See, among others: Bai et al. (2016), Cong et al. (2019), Hachem and Song (2016), Chen et al. (2020).
[19] The platform is publicly available at `http://pccz.court.gov.cn/pcajxxw/index/xxwsy`
[20] Both judges and bankruptcy administrators are required by Chinese regulation to upload these doc-

following case information. First, we extracted the date of case filing, the date on which the court accepted the case, the date of the main judicial decisions, and the date of official closure of the case. Second, we extracted the type of bankruptcy case – i.e. whether the case is a liquidation or a reorganization – and the name of the creditor or debtor who filed the case. Third, we extracted information on the judicial team in charge of each case, including the names of the main judge and the secondary judges. For a small sample of cases (94 cases) we were also able to extract information on the recovery rate obtained by different categories of creditors: secured creditors, workers, tax authority and unsecured creditors.

All the information used in this paper is updated to December 2020. As of December of 2020, the platform contained 2,815 cases with available court documents, which constitute the main dataset used in our empirical analysis. Around 50 percent of these cases (1,414) were still in progress as of December 2020, while the remaining 1,401 had reached a formal conclusion. In this section, we use this new data to document a set of stylized facts that shed light on the composition of cases and on the characteristics of firms going bankrupt in China. We also discuss the representativeness of our sample and the potential selection issues we face.

We start in Table 1 by reporting the distribution of cases by type and firm characteristics. Notice that each case is uniquely identified by a firm, so, in what follows, we use the two terms interchangeably. Similarly to most developing countries, liquidations represent the vast majority (83 percent) of bankruptcy cases in China. In terms of firm size, 73 percent of the bankrupt firms in our sample have fewer than 50 employees, 24 percent are bankruptcies of firms with between 50 and 499 employees, and the remaining 4 percent are firms with 500 or more employees. In terms of firm ownership, around 6.5 percent of the firms in our sample are registered as state-owned, and the remaining are privately owned. Hsieh and Song (2015) show that the share of state-owned firms in the China's Industrial Survey in the early 2010s is around 12 percent. The lower share of SOEs in our dataset might reflect the fact that SOEs are, on average, larger firms which tend to

uments in the platform.

receive preferential treatment in credit markets. Finally, in terms of sector composition, almost half of the firms filing for bankruptcy in our sample operate in the manufacturing sector, followed by real estate, wholesale & retail trade, and construction.[21]

[Table 1 here]

Next, we report the time series of case characteristics. Figure 2 shows the number of cases in our dataset by the year in which they were filed. As shown, the number of cases filed in our sample has been increasing significantly after 2012 and up to 2016, then stabilizing in more recent years.

In Figure 3 we decompose the number of cases filed each year by case and firm characteristics. The composition of cases by type is relatively stable over time, with liquidations consistently representing the vast majority in all years (Figure 3a). However, some clear trends emerge in the composition of cases by firm size, sector and ownership. In particular, Figure 3b shows that bankruptcies of small firms have become a larger fraction of cases over time, going from 60 percent in 2011 to 85 percent in 2020. Consistently, the share of bankruptcies of state-owned firms – which tend to be large firms – has declined over time from more than 20 percent of cases in 2011 to roughly 5 percent in 2020 (Figure 3d). Finally, as shown in Figure 3c, the share of manufacturing firms has been declining over time, while the share of bankruptcies of construction and real estate companies has increased.[22]

[21] For around 12.5 percent of firms the sector is reported as "Other" in the original data.

[22] Appendix Tables A1 and A2 report additional statistics. Table A1 reports the share of cases initiated by debtors vs creditors for the 1,285 cases in our sample for which we could extract this information. As expected, liquidations are mostly initiated by creditors, while reorganizations are mostly initiated by the debtor firm. Among creditors, we can additionally differentiate between banks and non-bank creditors (usually suppliers). Banks initiated 7.5 percent of liquidations in our sample, with around half of the filings made by China's Big Four banks (China Construction Bank, ICBC, Agricultural Bank of China, and Bank of China). Our statistics on recovery rates are limited to a sample of 94 cases for which this information is available, so they should be taken as only suggestive evidence. Table A2 reports the average recovery rate for the four main categories of creditors: secured debts, labor claims, tax debts and ordinary unsecured debts. The categories are ordered by their absolute priority according to the 2007 Chinese bankruptcy law (i.e. categories higher in this order get paid first with the proceeds obtained from selling liquidated assets). As Table A2 shows, recovery rates are, on average, higher for creditors that rank higher in terms of absolute priority. Labor claims tend to be paid almost in full (95%), which is consistent with the special attention that Chinese courts often give workers (Booth (2008)). Secured creditors recover on average almost 90% of their claims, the tax authority around 80%, while the ordinary unsecured creditors, such as suppliers, receive on average only 13% of the value of their claims at the end of the bankruptcy process.

[Figure 2 and 3 here]

Finally, Figure 4a reports the geographical distribution of all courts dealing with bankruptcy cases that appear in our sample (left map) and all firms filing for bankruptcy in our sample (right map). In Figure 4b we report the geographical location of courts with a specialized bankruptcy tribunal (right map) and new specialized courts (left graph).[23] The geographical distribution of courts and firms is higher in coastal areas and in more industrialized regions, because it correlates with the geographical distribution of economic activity. Figure 5 shows a strong and positive correlation between the average number of bankruptcy cases filed per year in our dataset (in logs) and the average number of industrial firms registered in each province per year according to the China Statistical Yearbooks (also in logs).

[Figures 4a, 4b and 5 here]

3.1 Discussion of data selection issues

Before moving to the empirical analysis, it is important to discuss the representativeness of the data reported in the bankruptcy disclosure platform relative to the population of bankruptcy cases filed in China during the period under study. This question is hard to address given the limited information available on the population of bankruptcy cases. To the best of our knowledge, the only publicly available statistic that we can use as a benchmark is the total number of bankruptcy cases accepted in Chinese courts every year, which is reported yearly by the Supreme Court (INSOL 2018). Figure 1 reports this number between 1989 and 2017. According to the Supreme Court data, between 2011 and 2017, around twenty-five thousand bankruptcy cases were accepted in Chinese courts, versus the approximately two thousand cases recorded in our sample during the same period.

[23]The number of specialized tribunals and courts reported in this map captures those that are present in our dataset. As shown, this number is smaller than the total number of specialized tribunals and courts operating in China reported in section 2. For example, out of the 9 new specialized courts introduced in 2019 and 2020, only five had cases recorded in the "National Corporate Bankruptcy Information Disclosure Platform" as of December 2020.

We face two types of potential selection issues in using the data made available on the bankruptcy disclosure platform. First, we face selection based on duration in the early years of our sample. Because the bankruptcy disclosure platform was launched in 2016, cases filed between 2011 and 2015 are recorded in the platform only if they were still in progress as of 2016.[24] This limitation mechanically leaves out cases filed in early years of our sample and closed before 2016. In the empirical analysis, we deal with this selection based on duration by including year-of-acceptance fixed effects in our specifications. Doing so allows us to effectively compare cases that were filed in different courts but started in the same year.[25]

Second, although Chinese regulation requires judges and bankruptcy administrators to upload information on all cases on the online platform, the gap between aggregate statistics reported by the Supreme Court and the bankruptcy online platform makes evident that not all cases are reported. From our conversations with bankruptcy professionals, a large number of bankruptcy filings in China involve small firms with virtually no assets left at the time of filing. These cases tend to be closed shortly after filing, with no payments to creditors. The bankruptcy professionals we interviewed for this paper confirmed that this type of cases are less likely to be reported by judges and bankruptcy administrators in the online platform, which instead tend to focus on larger cases where the insolvent firm has positive assets at filing. In this sense, our sample is likely skewed towards larger companies and companies characterized by a higher asset tangibility, as these are more likely to preserve their asset value at the time of bankruptcy. This finding is consistent with the stylized facts presented in Table 1, which shows that around one fourth of cases in our sample are of firms with at least 50 employees, and more than 60 percent of cases are firms operating in industries characterized by relatively high asset tangibility, such as manufacturing, construction, real estate, and utilities.

Despite the selection issues described above, we think of this new dataset as a unique and extremely valuable source of information. First, it allows us to shed light on several

[24]In fact, out of the 980 cases that had concluded by the time we extracted the data, only 34 were closed before 2016 (all of them between 2013 and 2015).

[25]Including year-of-acceptance fixed effects also helps us dealing with the right-censoring of the data, an issue that we discuss in more detail in section 4.

aspects of bankruptcy proceedings in China, an area thus far unexplored by academic research due to the lack of data. Second, we think that the identification strategy presented in section 4.1.1 mitigates the selection bias concerns described above.

3.2 Data on Specialized Courts

We obtained the exact dates of introduction and the location of the 97 tribunals and the 9 courts specialized in bankruptcy operating in China as of 2020 from the Ministry of Justice. Since the location and introduction dates of these courts is not reported in official documents, to validate the information that we received from the Ministry of Justice we conducted several rounds of interviews with Supreme Court judges, local court judges, trustees, lawyers, and accountants who were involved in major bankruptcy cases.

Figure 6 shows the number of prefecture-level cities that introduced their first specialized tribunal by quarter. As shown, all specialized tribunals were introduced between 2007 and 2017. Some cities introduced their first specialized tribunals right after the bankruptcy reform of 2007. In particular, 5 tribunals were introduced in 2007 and 2008. However, the majority of tribunals were introduced between 2012 and 2017. Figure 6 shows that the number of cities introducing their first specialized tribunal increased substantially after the official guidelines on this matter that were issued by the Supreme Court in 2014, and then again in 2017. Figure 6 also shows the introduction of specialized courts, which is instead concentrated in the years 2019 and 2020.

[Figure 6 here]

Figure 7 reports the share of bankruptcy cases in our dataset that were filed in traditional civil courts versus specialized tribunals and courts by year. As shown, this share increased from around 5 percent of filed cases in the years 2011-2012 to approximately 50 percent of the cases at the end of our sample in 2020.

[Figure 7 here]

Note that, even after the introduction of the first specialized tribunal in a given prefecture-level city, not all bankruptcy cases in that city are processed by the newly

introduced tribunals. Figure 8 reports the average share of bankruptcy cases filed in specialized tribunals among all bankruptcy cases filed in a given city, relative to the quarter of introduction of the first specialized tribunal in that city. The share is zero in the quarters before the introduction of the first specialized tribunal, and increases to an average of around fifty percent within a year after its introduction.[26] In short, our data shows that specialized tribunals were not able to absorb all bankruptcy cases filed in a given city. We exploit this feature of the Chinese system for identification purposes in the empirical analysis described in section 4. In section 4.1.1 we also discuss and explore in the data the drivers of the allocation of cases between traditional and specialized tribunals within the same city.

[Figure 8 here]

4 Empirical Analysis

4.1 Effect of Specialized Courts on Judicial Outcomes

4.1.1 Case-level specification

In this section we present the main estimating equations used to study the effect of specialized courts on the outcomes of interest. We start by presenting the specification used to study the effect of specialized courts on judicial outcomes at the case level:

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

where i indexes a case, c indexes the court in which the case was filed, j indexes the prefecture level city where the court is located and t indexes the year of acceptance of the case. The variable $1(PostSpecialization)_{ct}$ is a dummy equal to one when the court in which the case is accepted has introduced a specialized tribunal for bankruptcy cases as of year t, and zero otherwise. This specification includes both court fixed effects and year

[26] There are, on average, 2.5 tribunals dealing with bankruptcy cases in every prefecture level city in China. This number increases to 4.3 for cities that will eventually introduce a specialized court (as these cities tend to be larger).

of acceptance fixed effects. We can estimate court fixed effects because, as discussed in section 2.2, courts specialized in bankruptcy cases are not brand new courts, but existing civil courts that introduce a tribunal specialized in bankruptcy proceedings within the court itself.

A first concern with this specification is that the coefficient β might be capturing differences in the type of firms going bankrupt in cities where specialized courts are introduced versus those where they are not, rather than the differential effect of court specialization on case outcomes. To deal with this concern, we augment our specification at case level by adding city fixed effects interacted with year-of-acceptance fixed effects (α_{jt}), as shown in what follows:

$$y_{icjt} = \alpha_{jt} + \alpha_c + \beta 1(PostSpecialization)_{ct} + \varepsilon_{icjt} \tag{2}$$

Notice that, in equation (2), the coefficient β captures differences in judicial outcomes between cases filed in different courts within the same city and in the same year. Comparing cases that started in the same year is particularly important when studying the effect of specialized courts on case length. Since many cases in our dataset are still ongoing as of December 2020, and many specialized courts were introduced towards the end of our sample, one concern is that cases filed in specialized courts are more likely to be right censored. Controlling for year of acceptance fixed effects addresses with this concern by exploiting variation across cases that enter our sample at the same time.

4.1.2 Allocation of cases between traditional and specialized courts within cities

As shown in Figure 8, courts that introduce a tribunal specialized in bankruptcy cases do not absorb all bankruptcy cases filed in a city. In fact, the data shows that in cities that introduced specialized courts, both traditional courts and specialized courts operate in parallel, each dealing with roughly 50 percent of the filed cases. This feature of the Chinese institutional setting allows us to exploit variation across courts that are subject

to the same city-level shocks.[27]

How are cases allocated between traditional and specialized courts within each city? Article 3 of the 2007 Bankruptcy Law stipulates that cases fall under the jurisdiction of the people's court in the location in which the firm is registered. To prevent forum shopping, when the registration place of the firm is inconsistent with the location of its main activities, the latter shall prevail. In practice, this implies that, within a prefecture-level city, firms registered in a given county should file in the local court (either civil court or specialized tribunal) of that county. Although we do not know the exact registration place of all firms in our sample, we collected information on the geographical coordinates of their main office, as well as the geographical coordinates of all the courts in our data. This allows us to test to what extent geographical distance explains case allocation across courts within a given city.

We start with a visual analysis of two of the largest prefecture level cities in our sample in terms of number of cases: Shanghai and Suzhou, which also happen to be geographically adjacent. In Figure 9 we report the geographical distribution of financially distressed firms in these two cities, as well as the location of all courts dealing with bankruptcy cases. The blue lines connecting firms to courts indicate in which court each case was filed. We also report the boundaries of the prefecture level cities in black, and, within each prefecture level city, the boundaries of counties, the lower administrative units. As shown, there is a clear geographical pattern: cases tend to be filed into courts that are in the same county in which the firm is located, and often in the geographically closest court within the same county, independently from whether that court is specialized or traditional.

We test this geographical allocation mechanism more formally in Table 2. For this test, we construct a dataset that, for each firm, includes all the possible matches with courts located within the same prefecture level city in the year in which the case was filed. The independent variable is a dummy equal to 1 if the firm case was filed in a specific court. We then test the predictive power of two variables capturing geographical proximity: a dummy equal to 1 if the firm is located in the same county as the court, and

[27]Notice that in equation (2) the year of acceptance fixed effects is absorbed by the city fixed effects interacted with year of acceptance fixed effects.

the geographical distance in kilometers between the firm and each court. We estimate a specification with city fixed effects interacted with year fixed effects, and we restrict our sample to years in which both traditional and specialized courts were active in a given city. As shown in column (1), cases are 27% more likely to be filed in a court located in the same county. Column (2) shows that geographical distance has even higher predictive power: cases are 52% more likely to be filed in the closest court. In column (3) we add an interaction between the same county dummy and whether each court is specialized or not. We find that, when comparing courts within the same county, cases are 17% more likely to be assigned to a traditional court, and 47% (0.17 + 0.30) more likely to be assigned to a specialized court. When cases are filed outside the county, they are about 9.7% more likely to be filed in a specialized court. In column (4) we repeat the same exercise for the dummy identifying the closest court in terms of geographical distance. As shown, cases are about 50% more likely to be assigned to the closest court, independently from whether it is a specialized or a traditional court. When cases are not assigned to the closest court, they are about 23% more likely to be assigned to a specialized court. Overall, our reading of these estimates is that county boundaries do not fully determine case allocation, and that geographical distance between firm and court seems to have the highest explanatory power for case allocation.

Next, we investigate to what extent the allocation mechanism based on firm and court location generates selection of cases between traditional and specialized courts. To this end, we perform a balance test comparing characteristics of cases handled by specialized courts vs traditional courts in the same city and year. The results are reported in Table 3. In this table we restrict our sample to years in which both traditional and specialized courts were active in a given city, and try to predict case allocation to specialized courts using a large set of firm and case characteristics including firm size, sector of operation, and case type (reorganization vs liquidation). These characteristics should account for potential differences in the type of company and the level of complexity of different cases. As shown, we find no significant differences in terms of case type (reorganization vs liquidations) or firm ownership (SOE vs privately owned firms). We find no significant

differences in case allocation by firm size for firms of up to 1000 employees, while the cases of the largest firms (those with at least 1000 employees and in particular those with at least 5000) are more likely to be handled by specialized courts. No significant differences arise in the composition of cases by sector. In the empirical analysis, we augment the specification in equation (2) with industry fixed effects and firm size category fixed effects, and show that the magnitude of our estimates is stable when adding such controls.

4.2 The Effect of Specialized Courts on Court Efficiency

We start by studying the effect of court specialization on court efficiency – as captured by case duration – using case-level data. We start by presenting some basic stylized facts in Table 5. The table reports the average, median and standard deviation of case duration measured from the day of acceptance to the closing date.[28] The closing date corresponds to the final approval of the reorganization plan in a reorganization, or the closure of the case after (usually partial) repayment of creditors in a liquidation. These statistics are computed based on the 1,401 cases that were closed as of December 2020. The average time in court for a bankruptcy case in our sample is about 540 days, or around 1.5 years. According to the World Bank Doing Business database, the average duration of bankruptcy cases in the United States is around 1 year. There is large variation in the data, with some cases being handled in under a month, and others taking several years (the case with longest duration in our sample is just under 8 years).[29]

Table 5 also reports the average time in court for cases filed in traditional civil courts versus specialized courts. As shown, the average time in traditional civil courts is 649 days, versus the 300 days in specialized courts. Of course, this difference in duration could be driven by right-censoring in our data. Many specialized courts were introduced

[28]For cases for which the date of court acceptance is not available, we use the date of filing as a proxy for the acceptance date. The median gap between filing date and acceptance date in our data is about 20 days.

[29]On average, reorganizations take about 20 days less time in court than liquidations. Average time in court is increasing with size of the debtor firm, with the only exception of very large firms – those above 1000 employees – which instead seem to emerge from bankruptcy relatively quickly. Time in court is longer for manufacturing, mining, utilities and construction firms, while shorter for firms in the service sector such as hotels, restaurants and retail firms. Bankruptcy cases of state owned firms and privately owned firms show similar average duration.

towards the end of our sample. Thus, when we compare closed cases across courts, the average duration in specialized courts is more likely to capture the selected sample of cases that could be closed relatively quickly. In the empirical analysis that follows we always include year of acceptance fixed effects, which allows us to compare cases filed in different courts in the same year, thus removing any confounding effect from right-censoring.

Figure 10 reports the distribution of time in court for all cases in our sample (upper graph) and then separately between cases filed in traditional civil courts and cases filed in specialized courts (lower graph). The figure shows that the summary statistics reported in Table 5 are not driven by extreme observations.

[Table 5 and Figure 10 here]

After presenting summary statistics on the raw data, we study the effect of specialization on case duration outcomes using the specification presented in section 4.1.1. The results are reported in Table 6. In column (1) we estimate an equation that only includes year of acceptance fixed effects and a dummy capturing court specialization. As shown, cases in specialized courts are closed around 106 days faster than cases entering in non-specialized courts in the same year. This magnitude corresponds to about 20 percent of the average case duration in our sample. Because specialized courts are effectively tribunals specialized in bankruptcy cases that are added to an existing court, in column (2) we can add court fixed effects to our specification, which capture any time invariant characteristics of each court. This is the specification described by equation (1) in section 4.1.1. The coefficient on the post-specialized court dummy reported in column (2) indicates that, after adjusting for time invariant court characteristics and comparing cases started in the same year, the introduction of specialized courts decreases case duration by 125 days, around 23% of the average duration observed in our sample.[30] In column (3) we show that this result is robust to including firm observable characteristics such as size and sector, which are meant to capture the level of complexity of the case.

[30]Notice that the number of observations declines in this specification because many courts in our data only deal with one bankruptcy case during the period under study and therefore get dropped when adding court fixed effects.

Next, in columns (4) and (5), we turn to the specification described in equation (2). This specification includes city times year fixed effects, and thus allows us to compare cases entering in the same year in different courts that are exposed to the same city-level shocks. The coefficient on the post-specialized court dummy remains negative and significant, and it increases in absolute value. After additionally controlling for firm characteristics, the magnitude of the coefficient in column (5) indicates that cases handled by specialized courts are closed around 193 days faster than those handled by non-specialized courts in the same city and year. This corresponds to 36% of the average case duration observed in our sample.

[Table 6 here]

4.3 Mechanisms

In this section, we discuss and provide empirical evidence on two potential mechanisms through which specialization can effect court efficiency in China. First, we study how the introduction of specialized courts affected the characteristics of judges dealing with bankruptcy cases, focusing in particular on their education. Then, we study how specialized courts affected judicial independence from local politicians.[31]

4.3.1 Judges' education

We start by briefly discussing the characteristics of judges hired in specialized tribunals. Overall, 14% of the judges in our dataset work in tribunals specialized in bankruptcy cases during the period under study (2011-2020). Of this 14%, 1/3 previously worked in non-specialized tribunals, and the remaining 2/3 are observed for the first time in our dataset as operating in a specialized tribunal. This is consistent with our discussions with supreme court and local court judges, according to whom judges operating in specialized tribunals are often recruited outside of the government sector or

[31]We recognize that the introduction of specialized courts might have affected court efficiency also through other channels – such as changes in the schemes used to measure judges' productivity or in the availability of clerks – that we cannot measure directly in the data.

the existing judicial system and are either fresh graduates from top law schools or have previously worked in the financial or law industry.[32]

We also examine the effect of specialization on the average human capital of judges, as measured by judges' quality of education. To this end, we extract information on judges' education from the China Masters Theses Full-text Database (CMFD) made available via the China Knowledge Resource Integrated Database (CNKI). This dataset contains information on master theses from all major schools in China since 1948, including author, school, title and full text of the thesis. We code a judge as having a master from an "elite" law school if we find a master's thesis under its name at Project 985 universities or at one of the 5 top professional law schools in China.[33] The results of this analysis are reported in Table 4. The unit of observation in this table is a case-judge (each case can have up to three judges assigned to it). Our main outcome variable to capture judge's quality of education is a dummy equal to one if the judge has a master's degree from an elite school. We present results obtained estimating equation (1) in columns (1), and equation (2) in column (2). The coefficient on the post-specialized court dummy in column (2) indicates that judges hired in specialized courts are about 27% more likely to be trained in elite schools.

Overall, these results indicate that one potential reason behind the higher court efficiency obtained via specialized courts is the selection of better-educated and often new judges in such courts.

[Table 4 here]

4.3.2 Political influence

In this section we provide suggestive evidence of how specialization affects judicial independence from political influence. Measuring judicial independence is, of course, extremely challenging. In this section, we propose two tests. First, we focus on observable differences in how judges deal with bankruptcy cases of state-owned firms versus privately

[32]The average number of judges observed per court in a given year is 4.1. When a court is converted in a specialized bankruptcy tribunal, the yearly average number of judges observed in our data increases by 0.87.

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

owned firms. We think of the judicial treatment of SOEs as a measure of judicial independence from local politicians. Our reasoning is that the latter often tend to delay the liquidation and keep in operation low-productivity and financially distressed state-owned firms to contain unemployment, avoid social unrest and promote their political careers.

We estimate equation (2) augmented with an interaction of the post-specialized court dummy with a dummy capturing bankruptcies of state-owned firms, as well as the main effect. The results are reported in column (1) of Table 7. The effect of specialized courts on case duration is significantly larger for bankruptcies of state-owned firms. In particular, our estimates indicate that the decline in case duration generated by specialized courts is 182 days for private firms, and about 400 days for state-owned firms. This implies that the introduction of specialized courts cuts the average case duration for bankruptcies of state-owned firms by 70 percent, while the decline for privately owned firms is 34 percent.

Second, we study how the effect of specialization on time in court for bankruptcy cases varies across the political cycle of local party officials. The rationale of this test is that local politicians might have a higher incentive to delay the liquidation of financially distressed firms and preserve employment towards the end of their term, right before their performance is evaluated for promotion. We categorize as "late term" years the last two years of the five-year term of each local party secretary. The results are presented in Table 7. Columns (2) and (3) report the effect of specialization in the early years of the term, and columns (4) and (5) focus on the late years of the term. As shown, the effect of specialization on time in court is about twice as large in the late years than in the early years of the political term. One explanation of this result is that, towards the end of their term, local party secretaries increase their pressure on courts to delay the liquidation process of local firms, but specialized courts are less subject to this political influence than traditional civil courts.[34]

Overall, the results presented in Table 7 indicate that the efficiency gains brought by specialized courts are larger in cases of state-owned firms and in the last two years of the term of the local party secretary. This evidence is consistent with reduced political

[34]Due to the limited number of SOEs in our sample, we do not have enough power to test whether also the heterogeneous effects by firm ownership presented in column (1) vary by term of the local officials

influence being an important driver of the higher efficiency of specialized courts.

[Table 7 here]

4.4 The Effect of Specialized Courts on the Local Economy

4.4.1 City-level specification

Next, we present a specification to study the effect of specialized courts on the local economy, intended as the economy of a prefecture-level city. When we focus on city-level outcomes, we can not rely on the same within-city variation described above. For this specification we therefore rely solely on the timing of the staggered introduction of courts specialized in bankruptcy across Chinese cities as a source of identification. Thus, our main specification is as follows:

$$y_{jt} = \alpha_j + \alpha_t + \beta 1(PostSpecialization)_{jt} + \Gamma X_{jt} + \eta_{jt} \tag{3}$$

In this specification, $1(PostSpecialization)_{jt}$ is a dummy equal to one for all the periods following the introduction of the first specialized court in a given city j (including the year of introduction), and zero for all the periods before. Notice that this specification compares a city that introduced a specialized court with all other cities – including those that will never introduce a specialized court during the period under study.

The main concern with this specification is that the decision to introduce a specialized court in a given city and the timing of introduction are not random. In particular, the decision might be driven 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 need such courts 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 financially distressed firms, because the local economy is growing fast and can absorb eventual layoffs. This type of correlations with pre-existing and contemporaneous economic trends would bias our estimates of the effect of the introduction of specialized

courts on local economic outcomes such as number of firms or capital productivity.

To explore the extent of this concern, in Table 8 we estimate a discrete time hazard model that studies whether differences in economic trends at city level predict the timing of introduction of specialized courts across cities. We measure city-level economic performance as the contemporaneous and lagged annual change in: Gross Regional Product (GRP) per capita, number of firms, average size of firms (in employees) and share of manufacturing in local GDP. We also add a city-level measure of contemporaneous and lagged annual change in bankruptcy filings (normalized by number of firms) to investigate whether the introduction of specialized tribunals might have been driven by a recent surge in local bankruptcy filings. All changes in city-level observable characteristics are standardized so to have a mean of zero and a standard deviation of one. As shown, contemporaneous and lagged changes in measures of local economic performance do not predict the timing of court introduction.

Although Table 8 eases the concern that the timing of introduction of specialized courts is driven by the economic cycle, it cannot deal with potential unobservable city characteristics that vary over time and may drive both the introduction of specialized courts and the outcomes of interest. In the empirical analysis, we show that our results are robust to augmenting equation (3) with city-level controls studied in Table 8. To the extent that unobservable city-level characteristics are correlated with the observable characteristics reported in Table 8, adding these controls to our specification should ease this concern.

[Table 8 here]

In the last part of our analysis, we perform an event-study showing the evolution of city-level outcomes around the introduction of the first specialized court in a given city. Although this analysis is restricted – by construction – to cities that eventually introduced a specialized court, it serves the purpose of documenting the timing of the city-level effects and the absence of pre-existing trends in city-level outcomes.

4.4.2 City-level results

In this section we study whether the introduction of specialized courts had an impact on the local economy, intended as the economy of the prefecture level city. A more efficient and politically independent bankruptcy system can facilitate a faster liquidation of low-productivity firms and favor a swifter reallocation of their real assets, their labor force and their market shares to other firms in the economy. In our setting, for example, low productivity zombie firms operating under traditional courts might be more likely to remain in operation as their liquidation is delayed (potentially for long periods of time) due to court inefficiencies or political pressure. On the other hand, under specialized courts, low-productivity zombie firms are more likely to be liquidated within a reasonable time and their resources reallocated to the rest of the economy.

To test this channel at the city-level, we study the impact of specialized courts on the share of local labor employed in industries with higher diffusion of "zombie" firms. 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.[35] 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 source the information necessary to define zombie firms from the China Stock Market and Accounting Research Database (CSMAR) dataset. Using this dataset – which only covers publicly-listed firms – we rank industries based on the diffusion of zombie firms, and define industries above the median of this measure as zombie-intensive industries, or Z-industries. Finally, we compute the city-level labor share in Z-industries using data from the China Statistical Yearbooks, which cover employment in both publicly listed and private firms.[36]

[35]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.

[36]Notice that the Statistical Yearbooks report information on employment across the 20 industrial groups of the Chinese Sector Classification GB/T 4754-2002. Publicly listed firms instead are classified based on the CSMAR industry classification system, which differentiates between 64 industries. We manually matched the two classifications and aggregated the data from CSMAR by the 20 industry groups used in the Statistical Yearbooks. Based on CSMAR data and the methodology to identify zombie firms

The results are reported in panel A of Table 9. In all specifications we control for city and year fixed effects, as well as a large set of time-varying characteristics capturing city size and economic development.[37] Column (1) shows that cities that introduced courts specialized in bankruptcy experienced a 1.7 percentage points larger decline in the share of local labor employed in Z-industries. This correspond to around 18 percent of a standard deviation in the outcome variable. In column (2) we exclude workers in agriculture when computing the labor share in Z-Industries, because employment in agriculture tends to be poorly measured in the China Statistical Yearbooks due to the high level of informality. In column (3) we restrict our attention to non-financial (and non-agricultural) sectors. As shown, the magnitude of the point estimates is similar across columns, ranging between 1.5 and 1.7 percentage points, and highly significant.

A reduction in the share of resources used by local zombie firms can facilitate entry and – by removing the least productive matches – increase average firm productivity at the city level. In panel B of 9, we test this hypothesis using data from the China Statistical Yearbooks, which cover all industrial firms – including private and publicly-traded firms – with annual sales above 20 million RMB operating in a given prefecture level city for the period 2011 to 2017. Column (1) shows that cities that introduced courts specialized in bankruptcy experienced a faster increase in the entry of local industrial firms. The magnitude of the coefficient indicates that entry was 3 percent faster in these cities relative to those that did not introduce specialized courts. This correspond to 20 percent of a standard deviation in firm entry during the period under study.

In columns (2) and (3) we focus on two crude proxies for average firm productivity at city level: average product of capital as captured by the ratio of value added divided by value of tangible assets (in logs) and return on assets (ROA), defined as firm profits divided by value of total assets.[38] As shown, we find that cities that introduced courts specialized

outlined above, the industries with higher than median share of zombie firms among publicly listed companies are: finance, hotels and restaurants, construction, real estate, extractive industry, transportation, water management and utilities.

[37] Controls include number of local firms, average number of employees in local firms, local GDP per capita, labor share in manufacturing.

[38] Our data reports the aggregate value of these two variables at city-level, so these outcomes should be interpreted as a weighted average of firm productivity.

in bankruptcy experienced a 4.5 percent larger increase in average product of capital of local firms relative to cities where insolvency is still resolved exclusively by civil courts. The magnitude of the coefficient correspond to 8 percent of a standard deviation in the outcome variable. Similarly, we find a large, positive and significant effect of specialized courts on average return on assets. The magnitude of the estimated coefficient in column (3) indicates that cities that introduced specialized courts experienced a 15.5 percent larger increase in average profitability of local firms, which corresponds to around 20 percent of a standard deviation in the outcome variable.

[Table 9 here]

Finally, we perform an event-study exercise to show the evolution of city-level outcomes around the introduction of the first specialized court in a given city. To this end, we use the following specification:

$$y_{jt} = \alpha_j + \alpha_t + \sum_{\substack{k=-2 \\ k\neq 0}}^{2} \beta_k D_{jt}^k + \varepsilon_{jt} \tag{4}$$

where D_{jt}^k is a dummy equal to 1 if year $t = k$ for city j, and captures the time relative to the year of introduction of the first specialized court in city j, which we set at $k = 0$. We include the 2 years prior to the introduction of the first specialized court and the 2 years after.[39] The specification has calendar year and city fixed effects, denoted by α_t and α_j, respectively, as well as the same set of time-varying city-level controls used in Table 9. Standard errors are clustered at the city level.[40]

The objective of this exercise is to exploit the different timing of introduction of specialized courts in different cities to document their impact on city-level outcomes in a dynamic specification. The estimated coefficients β_k for all the outcomes studied in Table

[39]We restrict our event study to this short window because many specialized courts are introduced towards the end of the period for which data is available.

[40]Notice that, differently from Table 9, this analysis is restricted – by construction – to cities that eventually introduced a specialized court. This is because the time relative to the introduction of the first specialized court can only be identified for cities that introduced their first specialized court within the period under study. Note that in this type of specification there is no "pure" control group – intended as cities that never introduced a specialized court – because all cities used in this event-study exercise are eventually treated within the period under study.

9 are plotted in Figure 11. The results show that, within two years from the introduction of the first court specialized in bankruptcy, cities experienced a relative increase in firm entry and average capital productivity and profitability, and a relative decline in the share of labor employed in Z-industries. The estimates are noisy due to the small sample of cities introducing specialized courts used in this specification. However, they provide suggestive evidence of a change in the trend in the outcomes of interest after the introduction of the first specialized court. In the case of average firm profitability and the labor share in Z-industries the effect is visible starting one year after the introduction of the first court, potentially as a result of the swift liquidation of unprofitable state-owned firms by the new courts. The effect is more gradual for firm entry and average product of capital, which become statistically significant at standard levels two years after the introduction of the first specialized court.[41] Overall, the results presented in Table 9 and Figure 11 are consistent with specialized courts fostering a faster liquidation of low-productivity firms, which had a positive effect on entry and the average productivity of surviving firms.

5 Concluding Remarks

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.[42] Academics and policy makers have raised concerns about the risks associated with the Chinese credit boom and the recent increase in insolvency.[43] In addition, the Chinese central government expressed

[41]The specification in Table 9 uses a different control group than the one used in Figure 11. In Table 9 we estimate a static event-study diff-in-diff specification, in which cities are treated at different times, and the control group includes both not-yet-treated and never-treated cities. On the other hand, in Figure 11, we estimate a dynamic event-study diff-in-diff, in which the control group at each horizon does not include the never-treated cities. The advantage of the second specification is that it allows us to visually test for pre-trends and anticipation effects, and it also has a less severe restriction on heterogeneous treatment effects (Borusyak and Jaravel, 2017), which are allowed to vary by horizon. Notice that the magnitude of the effects reported in Table 9 and Figure 11 are similar, suggesting that the including or not including the never-treated cities in the control group have a small impact on the point estimates.

[42]See, among others: Bai et al. (2016), Cong et al. (2019), Hachem and Song (2016), Chen et al. (2020).

[43]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 et al. 2018). Local government financing vehicles started to default on their loans (Gao et al. 2021).

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.

This paper starts to close this gap in the literature by providing micro-based evidence on bankruptcy resolution in China. First, it provides new stylized facts based on case-level data on how firms go bankrupt in China. Second, it exploits the staggered introduction of specialized bankruptcy courts and their co-existence with traditional civil courts to study their effect on judicial outcomes and the local economy. We find that specialized courts made insolvency resolution faster. We also find suggestive evidence that specialization increases efficiency by selecting better trained judges and by increasing judicial independence from local politicians. At city-level, we find that the introduction of specialized courts generated a relative decline in the labor share in industries characterized by a higher presence of zombie firms, as well as faster entry and a relative increase in average capital productivity of surviving firms.

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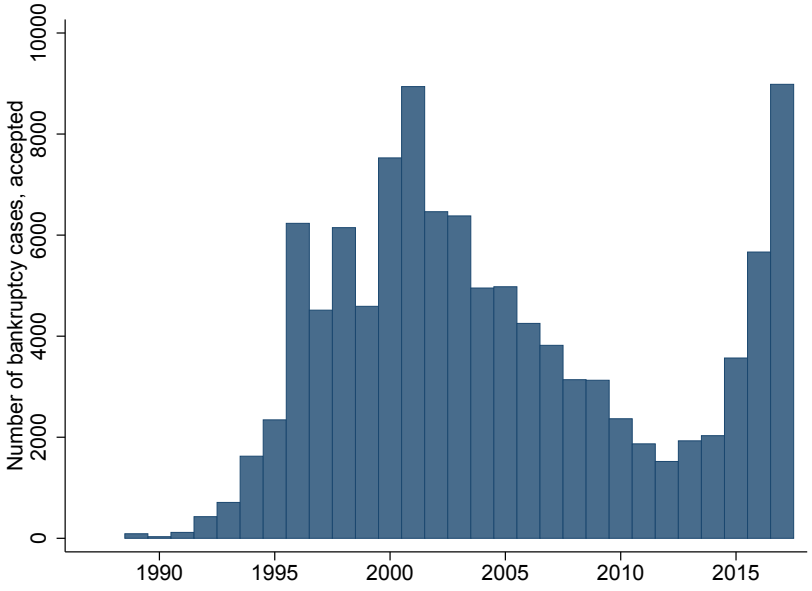
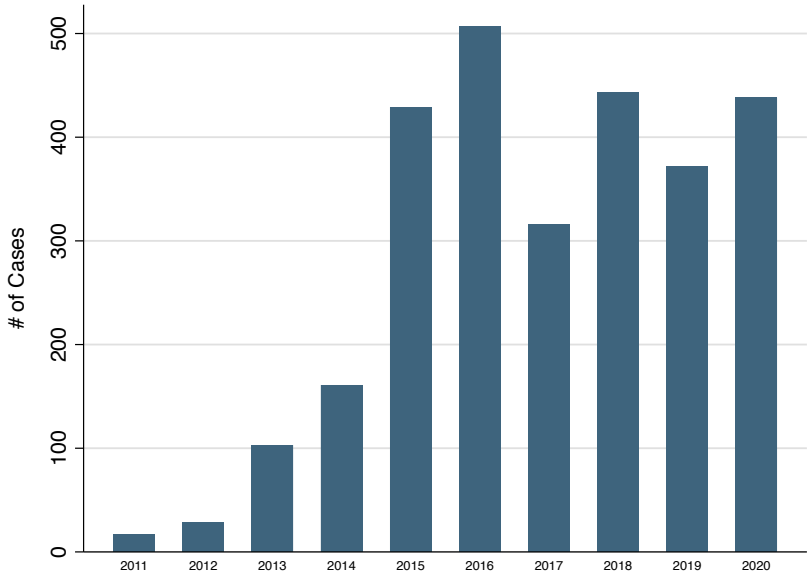
Figures and Tables

Figure 1: Number of bankruptcy cases in China



Notes: The Figure shows the total number of bankruptcy cases accepted in Chinese courts between 1989 and 2017 according to the aggregate statistics of the China Supreme Court (INSOL 2018).

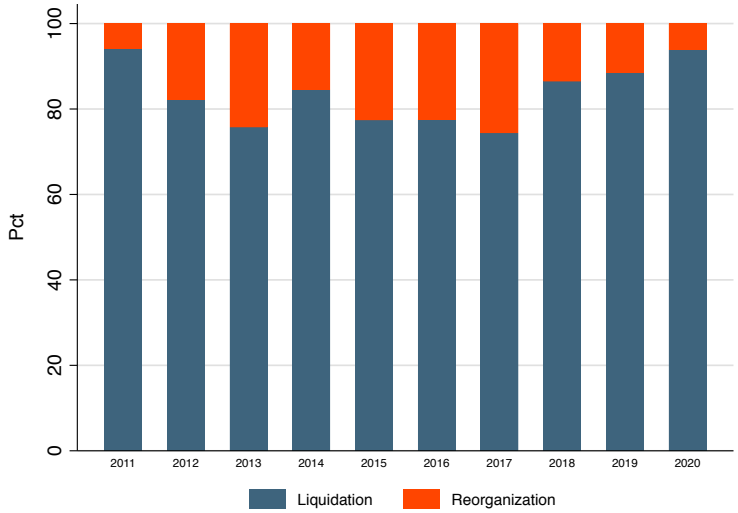
Figure 2: Number of bankruptcy cases reported in the National Corporate Bankruptcy Information Disclosure Platform



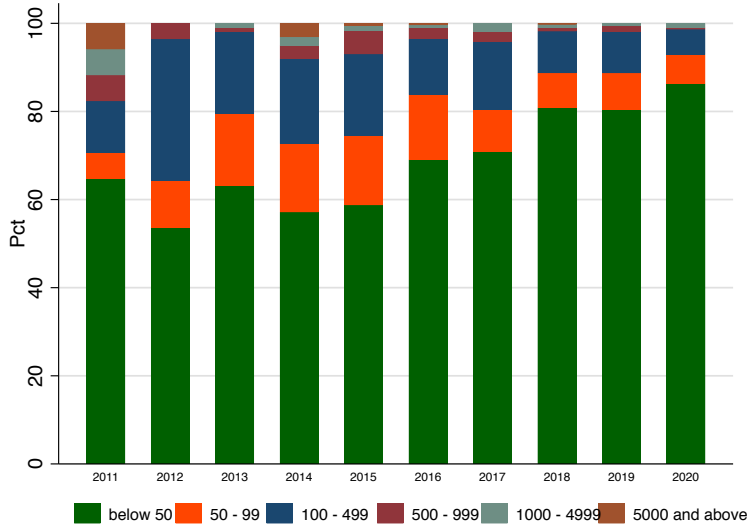
Notes: Number of bankruptcy cases by year of acceptance, 2011 to 2020. Source: authors' calculations.

Figure 3: Number of bankruptcy cases by year and case or firm characteristics (2011-2020)

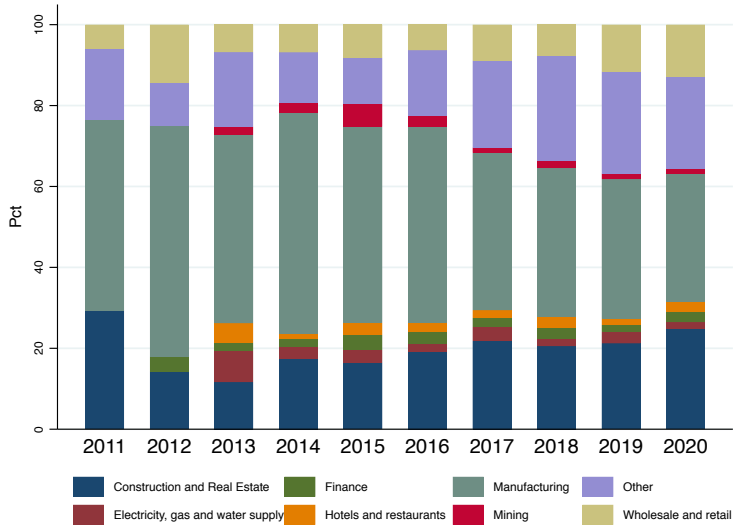
(a) by case type



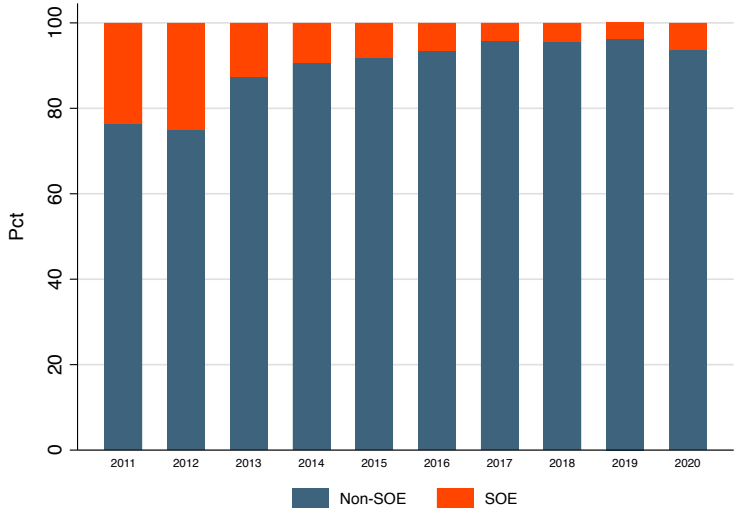
(b) by firm size



(c) by sector

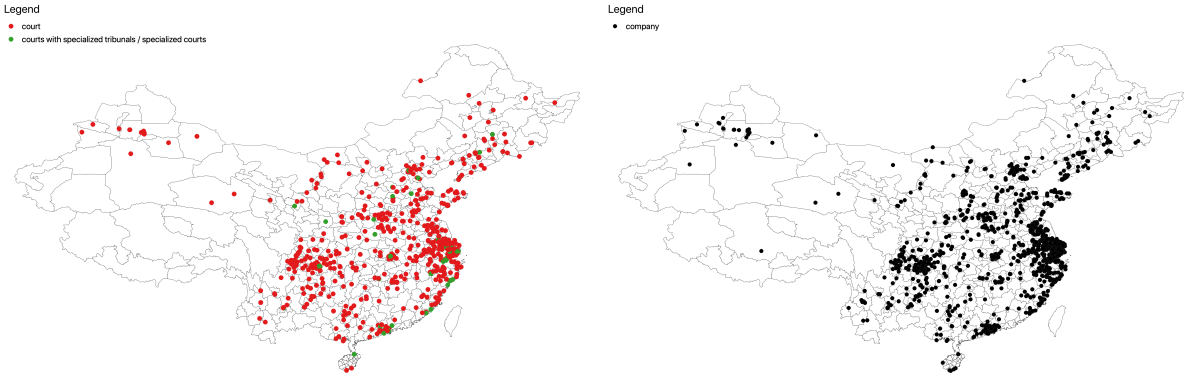


(d) by ownership

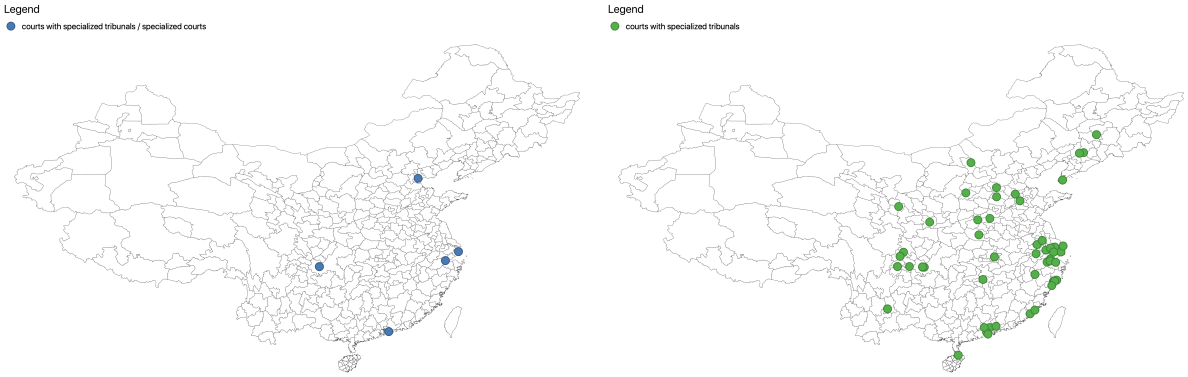


Notes: Number of bankruptcy cases by year of acceptance, 2011 to 2020. Source: authors' calculations using data from the "National Corporate Bankruptcy Information Disclosure Platform". In panel (a), cases switching between types are classified based on their initial filing.

Figure 4: Geographical distribution of bankruptcy cases



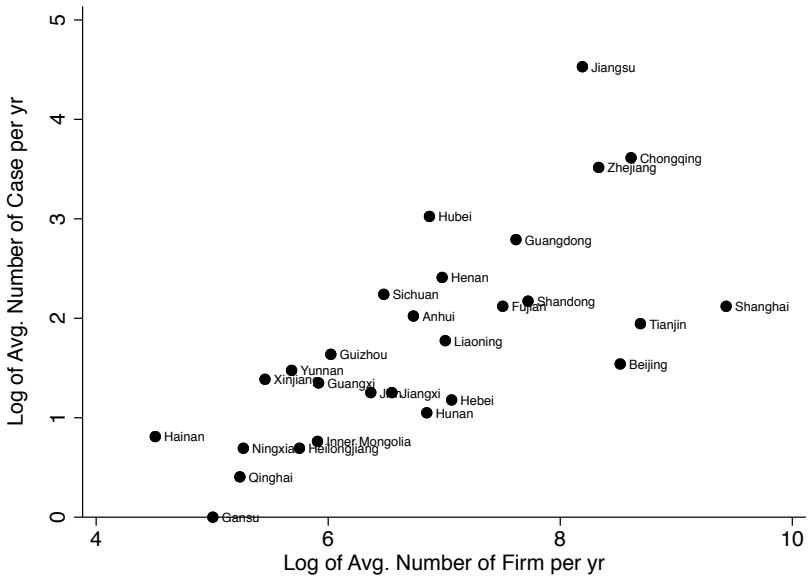
(a) Distribution of Courts and Firms



(b) Distribution of Types of Courts

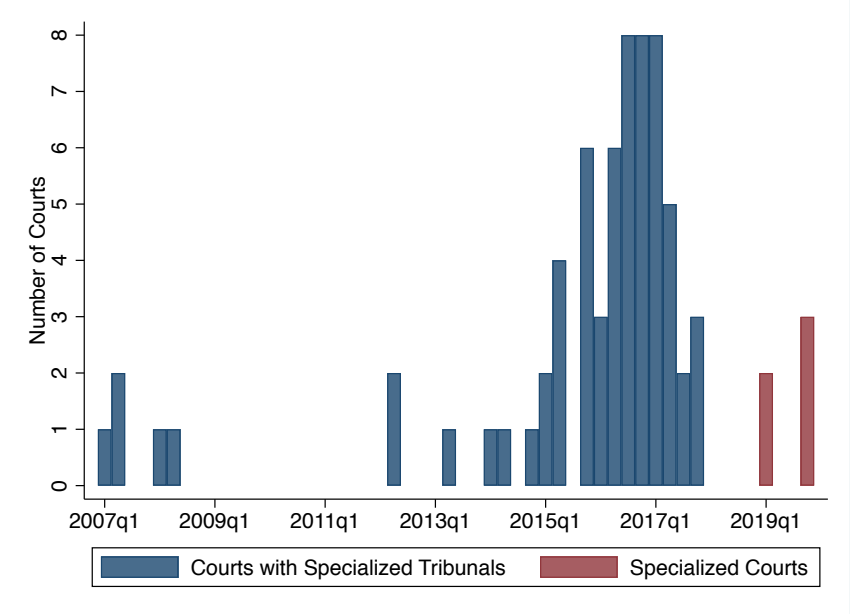
Notes: Panel (a) depicts the geographical distribution of courts (left) and companies (right). The courts in the first panel are distinguished by whether they have a specialized tribunal or are a specialized court or not. Panel (b) depicts only the specialized courts (left) or courts with a specialized a tribunal (right).

Figure 5: Bankruptcy cases and number of firms, by province



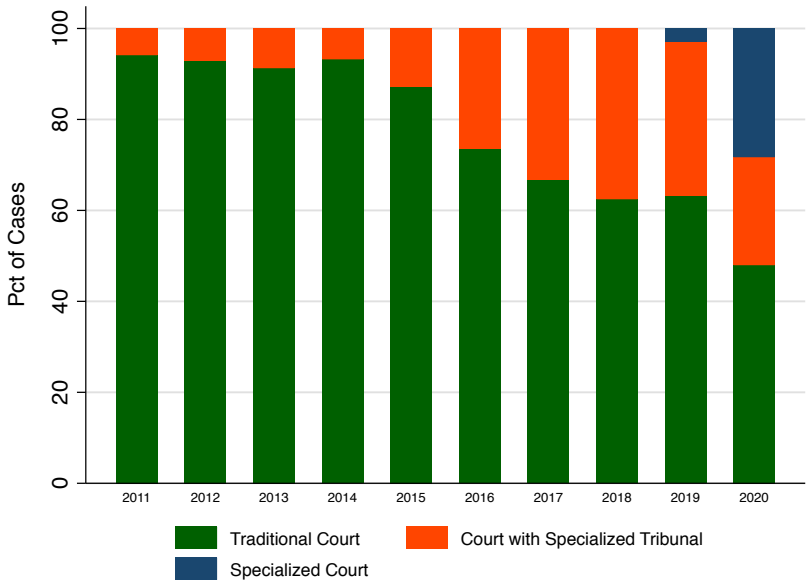
Notes: The Figure shows in a scatterplot the correlation between the average number of firms and the average number of bankruptcy cases observed in each province. Source: China Statistical Yearbooks (number of firms) and the "National Corporate Bankruptcy Information Disclosure Platform" (number of bankruptcies).

Figure 6: Introduction of specialized courts over time



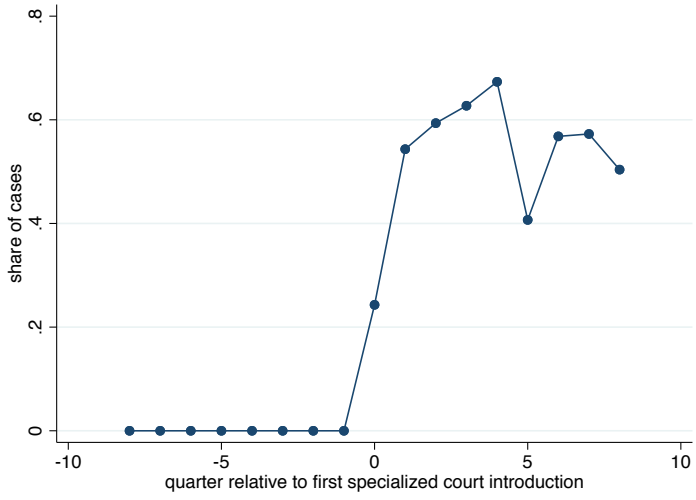
Notes: The Figure shows the number of new tribunals and courts specialized in bankruptcy introduced in each quarter between 2007Q1 and 2020Q4. We only count the first court introduced in each city (for cities that introduced more than one).

Figure 7: Cases in traditional vs specialized courts over time



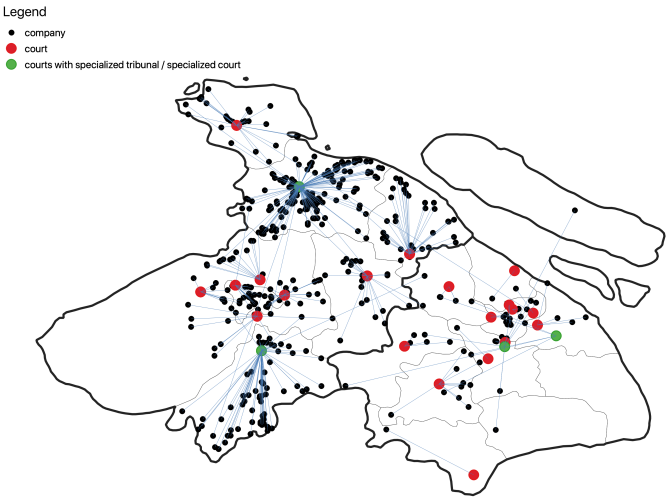
Notes: The Figure shows the percentage of total bankruptcy cases entering in traditional civil courts vs specialized courts by year between 2011 and 2020.

Figure 8: Allocation of cases around introduction of specialized courts



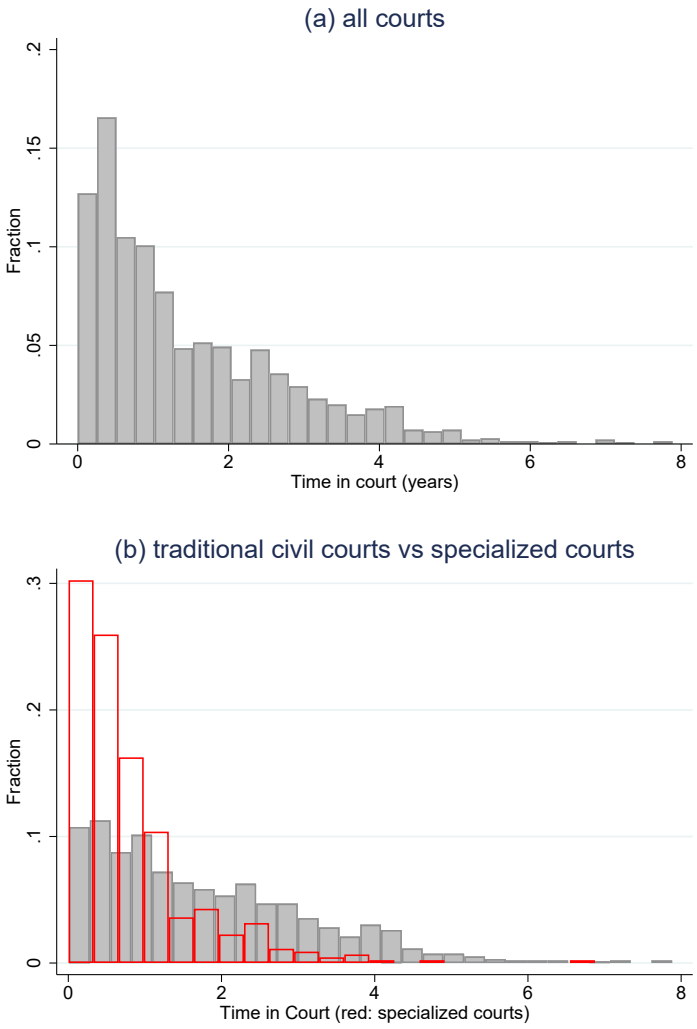
Notes: The Figure shows the average share of cases allocated to specialized courts in each city, by quarter relative to the introduction of the first specialized court in that city (which we set as $t = 0$).

Figure 9: Case assignment after introduction of specialized courts



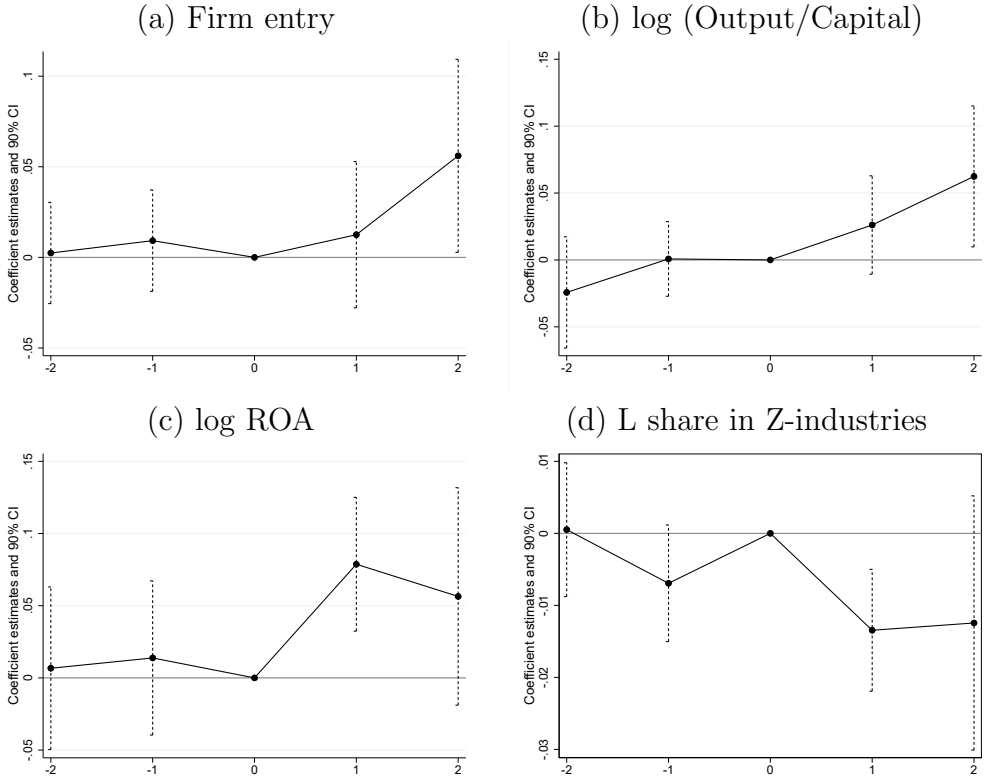
Notes: This figures shows the assignment of cases to courts vs specialized courts or courts with specialized tribunals after one of the latter was first introduced. The prefectures included are Shanghai and Suzhou.

Figure 10: Distribution of Time in Court



Notes: The Figure shows the distribution of the variable "time in court", which captures the duration of each case in years. Panel (a) pools all closed cases in our sample. Panel (b) differentiates between cases initiated in traditional civil courts vs specialized courts.

Figure 11: Average Firm Productivity Relative to Court Introduction - Event Study



Notes: This figure reports the point estimates and confidence intervals obtained estimating equation (4). The sample is restricted to cities that introduced specialized courts between 2011 and 2017.

Table 1: Total number of cases by case type and firm characteristics

	Num of Cases	Percent
	Case Type	
Liquidation	2337	83.02
Reorganization	478	16.98
	Firm Type	
Number of employees:		
Below 50	2044	72.61
50 - 99	315	11.19
100 - 499	355	12.61
500 - 999	62	2.2
1000 - 4999	28	0.99
5000 and above	11	0.39
Ownership:		
Non-SOE	2635	93.61
SOE	180	6.39
Sector:		
Construction and Real Estate	565	20.07
Electricity, gas and water supply	73	2.59
Finance	73	2.59
Hotels and restaurants	67	2.38
Manufacturing	1166	41.42
Mining	66	2.34
Other	553	19.64
Wholesale and Retail	252	8.95
Total Number of Cases: 2815		

Notes: Source: authors' calculations using data from the "National Corporate Bankruptcy Information Disclosure Platform".

Table 2: Case allocation Across Courts: Role of Geographical Distance

outcome	1(case filed)			
	(1)	(2)	(3)	(4)
1(Same county)	0.273**		0.175***	
	(0.100)		(0.0574)	
1(Same county) × 1(Specialized)			0.300**	
			(0.130)	
1(Closest court)		0.517***		0.478***
		(0.0725)		(0.0992)
1(Closest court) × 1(Specialized)				0.0450
				(0.114)
1(Specialized)			0.0967**	0.229***
			(0.0368)	(0.0363)
Observations	21,115	21,115	21,115	21,115
R-squared	0.235	0.103	0.327	0.195
City FE × Year Accept FE	y	y	y	y

Notes: The outcome variable is a dummy equal to 1 for the court in which each case was filed. The sample is restricted to city-year observations in which both specialized and traditional courts are operating. Regression includes year-of-acceptance fixed effects interacted with city fixed effects. Standard errors clustered at the city-level reported in parenthesis. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 3: Case allocation Across Courts: Case and Firm Characteristics

Case and firm characteristics	(1) 1(Case Filed in Specialized Court)
Ownership:	
1(SOE)	-0.0501
	(0.0343)
Case type:	
1(Reorganization)	-0.0714
	(0.0722)
Firm size dummies:	
Below 50	0.00754
	(0.0202)
50 - 99	-0.00785
	(0.0304)
500 - 999	0.0420
	(0.0479)
1000 - 4999	0.164
	(0.139)
5000 and above	0.225*
	(0.114)
Firm sector dummies:	
Electricity, gas and water supply	-0.106
	(0.0674)
Finance	-0.0421
	(0.0371)
Hotels and restaurants	-0.0743
	(0.0653)
Manufacturing	0.0352
	(0.0453)
Mining	0.0256
	(0.0632)
Other	0.0398
	(0.0289)
Wholesale and retail	0.0393
	(0.0335)
Observations	1,890
R-squared	0.526
City × Year Accept FE	y

Notes: The outcome variable is a dummy equal to 1 if the case was filed in a specialized court. The sample is restricted to city-year in which both specialized and traditional courts are operating. Regression includes year of acceptance fixed effected interacted with city fixed effects. Standard errors clustered at city-level reported in parenthesis. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 4: Judge Education

outcome	1(elite school)	
	(1)	(2)
1(Post Specialized)	0.146*	0.268***
	(0.0826)	(0.0769)
Constant	0.134***	0.102***
	(0.0206)	(0.0204)
Observations	3,492	3,466
R-squared	0.090	0.284
Year Accept FE	y	n
Sector FE	y	y
Firm size FE	y	y
City FE × Year Accept FE	n	y

Notes: The unit of observation is a judge-case. The time period is 2011 to 2020. Standard errors clustered at city-level reported in parenthesis. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Time in Court by Case, Firm and Court Characteristics

	Mean	Median	Std Dev	1%	99%	N
Time Interval	538.69	374	481	10	1990	1401
			By Case Type			
Liquidation	541.28	368	501	10	2038	1168
Reorganization	525.71	424	368	14	1526	233
			By Firm Size (number of employees)			
Below 50	467.22	306	457	11	1952	1023
50 - 99	725.11	670	455	26	1780	156
100 - 499	741.93	606	508	10	1956	179
500 - 999	916.15	904	610	43	2171	20
1000 - 4999	672.94	535	526	175	2029	16
5000 and above	246.71	303	142	71	451	7
			By Firm Sector			
Construction and Real Estate	520.04	372	472	15	1975	213
Electricity, gas and water supply	587.54	458	508	81	2076	41
Finance	416.09	258	401	64	1499	33
Hotels and restaurants	418.48	221	398	38	1467	25
Manufacturing	589.19	429	496	22	1957	664
Mining	577.48	486	470	10	1714	23
Other	513.57	356	482	15	2038	267
Wholesale and Retail	400.22	236	413	9	1524	135
			By Court			
Specialized	300.26	198	298	4	1338	443
Traditional	648.95	528	510	22	2130	958
			By Ownership			
POE	536.88	375	480	15	1989	1316
SOE	566.82	344	499	4	1666	85

Notes: Time in court captures the time from case acceptance by the court to case closing (in days). Sample restricted to cases that were closed as of December 2020. Source: authors' calculations using data from the "National Corporate Bankruptcy Information Disclosure Platform".

Table 6: Time in Court for Bankruptcy Cases

outcome	Time in court (days)				
	(1)	(2)	(3)	(4)	(5)
1(Post Specialized)	-105.9***	-125.2***	-121.0***	-195.7***	-192.9***
	(24.59)	(44.59)	(41.68)	(35.45)	(29.55)
Observations	1,401	1,208	1,205	1,091	1,088
R-squared	0.515	0.724	0.730	0.750	0.754
Year Accept FE	y	y	y	n	n
Court FE	n	y	y	y	y
Sector FE	n	n	y	n	y
Firm size FE	n	n	y	n	y
City FE × Year Accept FE	n	n	n	y	y

Notes: The unit of observation is a case. The time period is 2011 to 2020. Standard errors clustered at city-level reported in parenthesis. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Time in Court for Bankruptcy Cases: Ownership and Term of Local Party Secretary

outcome	Time in court (days)				
		Early term		Late term	
	(1)	(2)	(3)	(4)	(5)
1(Post Specialized)	-182.1***	-137.7**	-186.6***	-210.0**	-349.9***
	(63.92)	(58.75)	(38.56)	(98.98)	(95.46)
1(Post Specialized) × 1(SOE)	-218.8*				
	(131.3)				
1(SOE)	71.29				
	(102.1)				
Observations	1,088	586	538	338	304
R-squared	0.755	0.761	0.768	0.710	0.686
Year Accept FE	n	y	n	y	n
Court FE	y	y	y	y	y
Sector FE	y	y	y	y	y
Firm size FE	y	y	y	y	y
City FE × Year Accept FE	y	n	y	n	y

Notes: The unit of observation is a case. The time period is 2011 to 2020. Standard errors clustered at city-level reported in parenthesis. Significance level: *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Introduction of Specialized Courts and City-level Characteristics

	coefficient	N obs
$\Delta \log$ (GRP per capita)$_t$	-0.015	1,889
	(0.098)	
$\Delta \log$ (GRP per capita)$_{t-1}$	-0.135	1,887
	(0.128)	
Δ (N bankruptcies/N Firms)$_t$	0.008	1,897
	(0.037)	
Δ (N bankruptcies/N Firms)$_{t-1}$	0.066	1,884
	(0.050)	
$\Delta \log$ (N Firms)$_t$	-0.162	1,897
	(0.117)	
$\Delta \log$ (N Firms)$_{t-1}$	0.007	1,884
	(0.153)	
$\Delta \log$ (Average Firm Size)$_t$	0.096	1,896
	(0.184)	
$\Delta \log$ (Average Firm Size)$_{t-1}$	-0.112	1,850
	(0.152)	
Δ (Manuf GRP / Total GRP)$_t$	-0.087	1,891
	(0.093)	
Δ (Manuf GRP / Total GRP)$_{t-1}$	-0.022	1,889
	(0.109)	

Notes: Cox model with time-varying observable city characteristics. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Table 9: Real effects at city-level

Panel A: Labor Share in Zombie-intensive industries

	(1)	(2)	(3)
	L share Z-Industries	L share Z-Industries	L share Z-Industries
sectors:	all	ex: agriculture	ex: agriculture, finance
1(Post Specialized)	-0.0174***	-0.0150***	-0.0168***
	(0.00476)	(0.00458)	(0.00516)
Observations	1,941	1,933	1,932
R-squared	0.906	0.904	0.907
Year FE	y	y	y
City FE	y	y	y
City-level controls	y	y	y

Panel B: Firm Entry, Average Capital Productivity, and ROA

outcome:	Firm Entry	log(Output/Capital)	log(ROA)
	(1)	(2)	(3)
1(Post Specialized)	0.0310**	0.0449**	0.155***
	(0.0137)	(0.0181)	(0.0357)
Observations	1,989	1,989	1,915
R-squared	0.691	0.892	0.771
Year FE	y	y	y
City FE	y	y	y
City-level controls	y	y	y

Notes: The unit of observation is a city. The time period is 2011 to 2017. In panel A, observations weighted by number of workers in each city in the baseline year 2011. In panel B, observations weighted by number of firms operating in each city in the baseline year 2011. Standard errors clustered at the city-level reported in parenthesis. Significance level: *** p<0.01, ** p<0.05, * p<0.1

Appendix Tables

Table A1: Applicants by case type

	(1)	
Applicant	Percent(%)	# of cases
	Liquidation	
Creditor		
Non-Bank	63.53	627
Bank	7.50	74
Debtor	28.98	286
Total		987
	Reorganization	
Creditor		
Non-Bank	34.21	65
Bank	6.32	12
Debtor	59.47	113
Total		190
	Both	
Creditor		
Non-Bank	38.89	42
Bank	5.56	6
Debtor	55.56	60
Total		108

Notes: Source: authors' calculations using data from the "National Corporate Bankruptcy Information Disclosure Platform".

Table A2: Recovery Rates

Creditors:	Average Recovery Rate	# of cases
Secured creditors	88.9%	94
Labor claims	94.7%	94
Tax authority claims	82.0%	94
Ordinary unsecured creditors	13.3%	94

Notes: Source: authors' calculations using data from the "National Corporate Bankruptcy Information Disclosure Platform".