Annual Review of Financial Economics

Default and Bankruptcy Resolution in China

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Abstract

In this article, we review the literature on the recent growth of corporate debt in China and present stylized facts on the evolution of debt composition, nonperforming loans, defaults, and bankruptcy filings. We then describe the legal and political institutions that characterize the system for restructuring and liquidating financially distressed firms, including recent reforms of China's bankruptcy law. Finally, we discuss the main challenges faced by China in the implementation of these reforms, including frictions in judicial enforcement. We also propose potential avenues for future research.

1. INTRODUCTION

Corporate debt in China has experienced unprecedented growth since the 2008–2009 global financial crisis as a result of massive government stimulus and the fast development of onshore bond markets and the shadow banking system (Song, Storesletten & Zilibotti 2011; Cong et al. 2019; Amstad & He 2020). By the end of 2021, credit to nonfinancial corporations grew to approximately 160% of GDP in China, compared to 80% in the United States (see **Figure 1**). With the growth in corporate debt, nonperforming loans (NPLs) and defaults have started to rise at an alarming rate. For example, the total number of bond defaults in China's domestic corporate bond markets by both state-owned enterprises (SOEs) and non-SOEs increased from 6 in 2014 to 253 in 2021, while in the same period the default amount increased from RMB 1 billion to RMB 312 billion. Debt defaults have spread not only to traditional manufacturing firms but also to large real estate developers and financial institutions (e.g., the defaults of Evergrande in 2021 and Baoshang Bank in 2019), raising concerns about systemic risk.

The Chinese government implemented a series of policy reforms to help firms deleverage and reduce excess production capacity and to formalize laws and procedures for restructuring distressed companies. For example, deleveraging-related policies such as the China Banking and Insurance Regulatory Commission's (CBIRC) rules on commercial banks' wealth management products (WMP), a widely used tool for banks to attract off-balance-sheet deposits in China, aimed to curb financial risks. Specifically, the CBIRC No. 8 Document issued in March 2013 (CBIRC 2013) restricted exposure to nonstandard debt assets within WMP, limiting these products to invest mainly in publicly traded corporate bonds (Chen, He & Liu 2020). However, whether such policies achieved their intended objectives and whether mechanisms for resolving debt defaults are efficient remain unclear. In addition, regulators have targeted corporate debt, in particular the debt of zombie SOEs. These policies, however, have had unintended consequences on privately owned firms that rely on funding from WMP and other shadow banking channels by tightening their financing constraints.

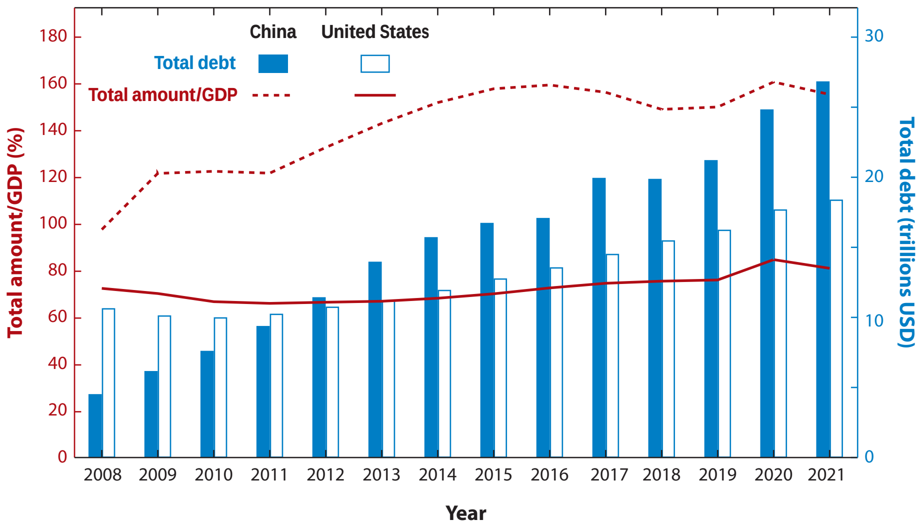

Figure 1

The total amount of credit to nonfinancial corporations in China and the United States in trillions of USD (*right*) and the ratio of total debt relative to GDP (*left*). Annual data from Bank Int. Settl. (2022).

In this article, we first provide stylized facts and review the existing literature on corporate debt growth, including the evolution of the bond market and shadow banking, and government policies and intervention in corporate debt markets in Section 2. We then focus on debt default, including defaults in the bond market, evolution of NPLs, and bankruptcy filings in Section 3. Next, in Section 4, we describe the legal and political institutions that are integral parts of the system for restructuring financially distressed firms in China and discuss the role of enforcement frictions that shape the restructuring process for Chinese firms. We conclude by discussing potential avenues for future research in Section 5.

2. CHINA'S CORPORATE DEBT MARKETS AND EVOLVING GOVERNMENT POLICIES

Firms in China exclusively relied on banks for debt financing before the 2008–2009 global financial crisis. In 2008, the Chinese government implemented an unprecedented economic stimulus plan, with RMB 4 trillion of government spending, to mitigate the effects of the crisis on the Chinese economy. A number of studies, including those by Chen, Ren & Zha (2018), Allen et al. (2019), Cong et al. (2019), Amstad & He (2020), and Chen, He & Liu (2020), show that both the onshore corporate bond markets and the shadow banking system experienced exponential growth. In addition, loans supplied by large state-owned banks increased dramatically immediately following the stimulus. The fast development of domestic debt markets helped fuel growth not only of investment by traditional corporations but also by local governments.

Figure 2 shows the annual aggregate net amount of financing to the real economy from bank loans, corporate bonds, and shadow banks between 2002 and 2019. As shown in the figure, the total amount of these three major sources of credit doubled from 2008 to 2009 and then doubled again in the following decade. Although bank loans remain by far the main source of financing for most companies, corporate bonds have grown to be the second most important source of credit.

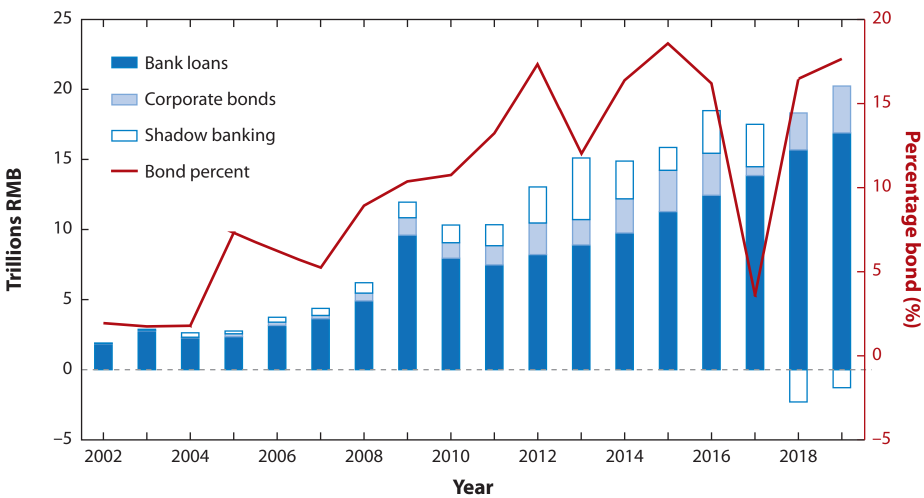

Figure 2

Aggregate financing to China's real economy by debt type. The figure shows annual net financing amount (i.e., the amount of issuance minus the amount of maturing) in trillions of RMB to the real economy by three debt sources: bank loans, corporate bonds, and shadow banking. The figure also shows the percentage of bonds to the aggregate of all three types of credit. Figure adapted with permission from Jin, Wang & Zhang (2023) and Cong et al. (2019).

There are five main types of corporate bonds issued by Chinese companies in the onshore bond market: exchange-traded corporate bonds, enterprise bonds, medium-term notes, commercial paper, and private placement notes (Amstad & He 2020). Corporate bonds are exchange-traded securities regulated by the China Securities Regulatory Commission (CSRC); enterprise bonds trade either in the interbank market or on securities exchanges and are regulated by the National Development and Reform Commission (NDRC); and medium-term notes, commercial paper, and private placement notes trade in the interbank market and are regulated by the National Association of Financial Market Institutional Investors (NAFMII). Shadow banking activities in China commonly refer to loans by trust companies, entrusted firm-to-firm loans, and WMP.

From the late 2000s to early 2010s, Chinese local governments also actively tapped into the corporate bond market and the shadow banking system by setting up local government financing vehicles (LGFVs) and issuing Chengtou bonds (Ang, Bai & Zhou 2016; Hsieh, Bai & Song 2016; Chen, Ren & Zha 2018; Liu, Lyu & Yu 2021). The issuance of WMP by banks took off in the mid-2000s as a result of several policies aimed to limit the lending of commercial banks, such as the loan-to-deposit cap and safe loan regulations. The rise of WMP helped fuel the growth of local government financing and shadow banking activities (Hachem & Song 2016). Chen, Ren & Zha (2018) show that the majority of these municipal bonds were, in fact, absorbed by the shadow banking system, particularly WMP.

A major policy shift in 2014 (State Council People's Repub. China 2014) forced local governments to issue new municipal bonds to replace the outstanding bonds of qualified LGFVs in the few years that followed. The policy aimed to draw a clear line between LGFV liability and government liability. Amstad & He (2020) explain that further regulatory tightening by the Chinese government in 2017, which aimed to put scrutiny on the shadow banking system, led to a dramatic downward adjustment in such activities in 2018 and 2019, as evidenced in **Figure 2**.

Geng & Pan (2021) study the effect of perceived government support for SOEs on credit spreads in the Chinese bond market in recent years. Controlling for credit rating and other bond characteristics, they document that, following government policies aimed at credit tightening, perceived government support led to a substantial increase in the credit spreads of non-SOEs relative to their SOE counterparts. Given the recent waves of defaults in China's onshore debt markets, as discussed in the next section, there are concerns that such a deepening of the SOE premium in Chinese bond markets may lead to severe capital misallocation.

These findings are related to a large number of studies focusing on capital misallocation in China and its evolution over time, starting from the seminal works by Hsieh & Klenow (2009) and Song, Storesletten & Zilibotti (2011). The traditional view is that, although SOEs tend to be on average less productive firms, they can often obtain financing at more favorable terms than private enterprises because of implicit government guarantees. Several recent papers have documented how the 2008–2009 stimulus and the credit market boom that followed affected the allocation of credit between SOEs and private firms (see, for example, Hsieh, Bai & Song 2016; Huang, Pagano & Panizza 2020; Cong et al. 2019; Hachem & Song 2021).

3. STYLIZED FACTS ON DEFAULTS AND BANKRUPTCY FILINGS IN CHINA

3.1. Defaults in China's Onshore Bond Markets

Through the mid-2010s, despite the tremendous growth in China's onshore corporate bond markets, defaults were extremely rare. The first onshore corporate bond default occurred in 2014, when Shanghai Chaori Solar Energy, a privately owned solar panel manufacturer, announced its default on March 14, 2014. The default by Baoding Tianwei Group Co., a manufacturer of power

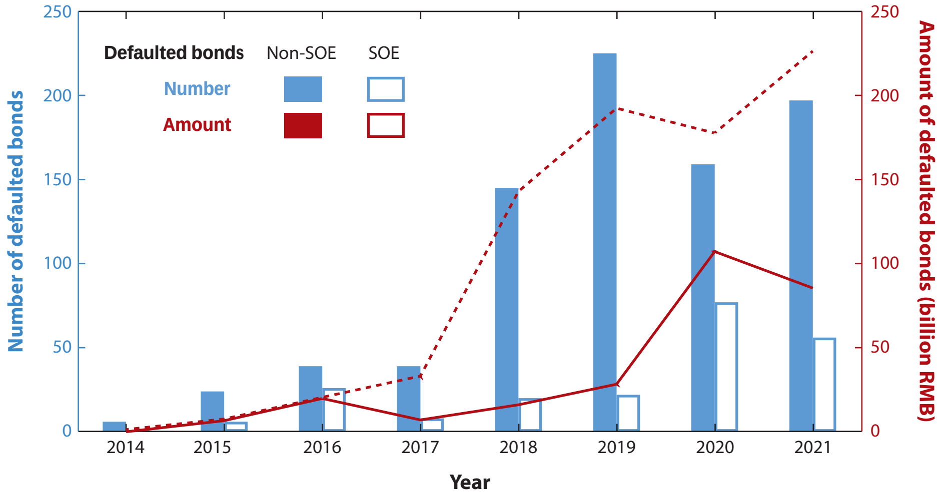

Figure 3

The total number and amount (in billions of RMB) of bond defaults in China's onshore bond markets. Abbreviation: SOE, state-owned enterprise. Data from the Wind database (Wind 2021).

transformers and wholly owned subsidiary of China South Industries Group, followed in the first half of 2015 and marked the first corporate bond default by an SOE. These default events broke investors' beliefs that Chinese domestic bonds had an implicit government guarantee. The overall frequency of bond defaults in China remained relatively low in the 2 years following those events. However, both the number and amount of bond defaults in China increased sharply after 2017 as a result of tightened regulations aimed at delevering firms, reducing excess capacity, and imposing regulatory oversight on WMP.

Figure 3 presents the annual number and amount (in billions RMB) of corporate bond defaults from 2014 to 2021. The figure shows that the total number of non-SOE bonds in default was four times larger than that of SOE bonds in default. The combined bond defaults of SOEs and non-SOEs reached a record high of RMB 300 billion in 2021, posing a potential threat to the stability of the financial system.

Jin, Wang & Zhang (2023) examine a series of SOE defaults in China's onshore bond markets, starting with the default by Baoding Tianwei in 2015, to study the effects of an implicit guarantee on corporate financing and investment policies. They find that the gradual removal of the implicit government guarantee has had confounding effects on SOEs. Although weakening of the guarantee can help mitigate agency problems due to soft budget constraints, the intended objective of government policies, it exacerbates financial constraints of those with limited access to alternative sources of financing. Policies and regulations in general can deliver unintended and often counter-productive consequences (Brunnermeier, Sockin & Xiong 2022). Whether government policy interventions and reforms of the bankruptcy system for restructuring the debt of defaulting firms are needed to mitigate the likelihood of damaging crises remains an open question for future research.

3.2. Bankruptcy Filings

Figure 4 shows the total number of bankruptcy cases accepted in Chinese courts every year from 1989 to 2021, as reported by the Supreme People's Court (INSOL Int. 2018; Supreme People's Court 2021). The data show an initial increase in filings following the introduction of the 1986

Table 2

firm characteristics. Similar to most emerging countries, liquidations in China represent the vast majority—83% of bankruptcy cases—while reorganizations represent only 17% of cases. In terms of firm size, 73% of bankrupt firms have fewer than 50 employees, 24% have between 50 and 499 employees, and the remaining 3% have 500 or more employees. In terms of firm ownership, only 6.5% of bankrupt firms are registered as state owned; the remaining are privately owned. Finally, in terms of sector composition, almost half of the cases recorded in the online platform are of firms operating in the manufacturing sector, followed by construction and real estate and wholesale and retail trade.

Figure 7 presents the number of cases filed each year between 2011 and 2020 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. However, some clear trends emerge in the composition of cases by firm size, sector, and ownership. In particular, bankruptcies of small firms have become a larger fraction of cases over time, increasing from 60% in 2011 to 85% in 2020. Relatedly, the share of bankruptcies of SOEs—which tend to be larger firms—has declined

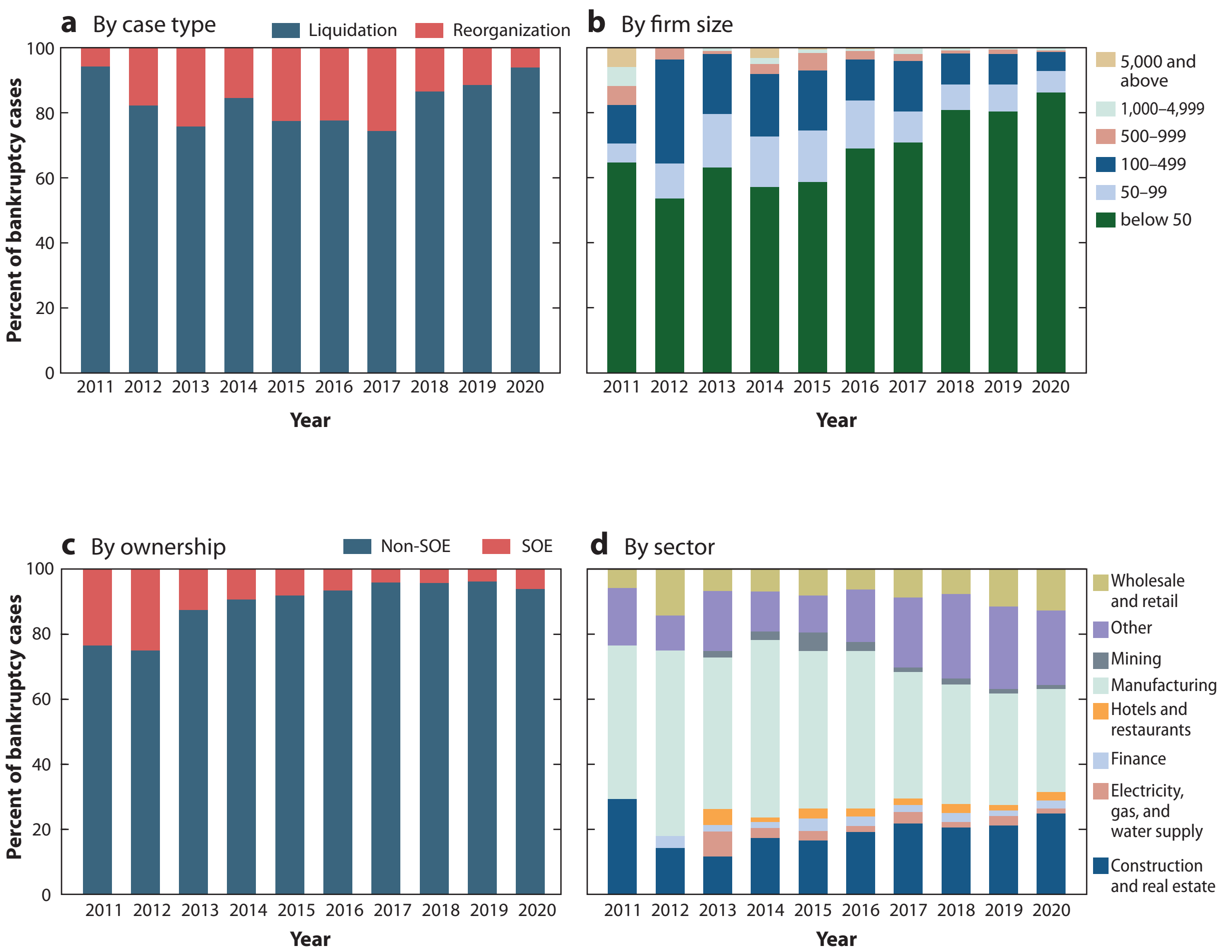

Figure 7

The percent of bankruptcy cases by year and case or firm characteristics (2011–2020). In panel *a*, cases switching between types are classified based on their initial filing. Abbreviation: SOE, state-owned enterprise. Figure adapted from Li & Ponticelli (2022, figure 3).

The second friction is the duration of the bankruptcy proceedings. Time is of the essence if insolvency resolution is to achieve the successful reorganization of a distressed firm or the repayment of creditors using the assets of a liquidated firm. Several studies in both developed and developing countries have documented that courts in charge of bankruptcy cases are often slow at processing cases. Lengthy bankruptcy proceedings negatively affect recovery rates for creditors, which in turn undermines the ex ante ability of firms to access external finance (Ponticelli & Alencar 2016; Rodano, Serrano-Velarde & Tarantino 2016; Iverson 2017; Fonseca & Van Doornik 2022).

Finally, the decision to close or reorganize a business can be politically sensitive, especially because this process implies the layoff of workers. Thus, the judicial system can be subject to direct and indirect political influence from local or central governments. This specific friction is likely to be more prominent in China, relative to other emerging economies. Local courts in China often operate under the influence of local governments when dealing with bankruptcy cases (Henderson 2007; Fan, Huang & Zhu 2013; Li & Ponticelli 2022).

5. CONCLUSIONS AND OPEN RESEARCH QUESTIONS

This article reviews the literature on the growth of corporate debt in China, which accelerated after the 2008–2009 global financial crisis and was followed by a widespread increase in defaults in recent years. We present a set of stylized facts on the evolution of defaults in the bond market, NPLs, and bankruptcy filings. We also describe recent reforms in China's bankruptcy law along with the main challenges that China is facing in their implementation. Throughout the article, we emphasize several potential avenues for future research, which can be summarized in two broad areas.

First, we highlight that an important area for future research is the collection of new micro data that can inform the empirical research in banking and corporate finance in China. For example, as discussed in Section 4, there is a scarcity of detailed micro data on bankruptcy cases in China, including information on the decisions taken by judges adjudicating different stages of the process and the recovery rates obtained by creditors. The disclosure and digitization of existing court documents will gradually make available to researchers high-quality micro data enabling much needed empirical work in this area. In this respect, it is worth underlining that the Supreme People's Court has led an effort to upload judicial decisions by all Chinese courts on a centralized online platform starting in 2014.[8] We believe this platform can be a valuable resource for researchers interested in the functioning of the Chinese judicial system and its effects on the economy, including when it comes to bankruptcy resolution. Still, as discussed by Liebman et al. (2020) and Liu et al. (2022), disclosure rates in this platform differ substantially across courts and may be influenced by political factors.

Second, in this article, we list several questions that are still unanswered in the area of debt default and bankruptcy in China. Such questions include: (*a*) the consequences of the recent sharp increase in bond defaults and NPLs on the stability of the Chinese financial system, (*b*) the financial and real effects of the 2006 bankruptcy law reform, and (*c*) the reasons behind the limited use of formal insolvency by Chinese firms. Let us also emphasize that, in this article, we do not discuss the issue of personal bankruptcy. However, we think of this as a particularly relevant topic for future research in light of the fast increase in household debt over GDP in China and the lack of a personal bankruptcy law.

[8]The online platform China Judgements Online is available at **https://wenshu.court.gov.cn/**.

DISCLOSURE STATEMENT

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LITERATURE CITED

Allen F, Qian Y, Tu G, Yu F. 2019. Entrusted loans: a close look at China's shadow banking system. *J. Financ. Econ.* 133(1):18–81

Amstad M, He Z. 2020. Chinese bond markets and interbank market. In *The Handbook of China's Financial System*, ed. M Amstad, G Sun, W Xiong. Princeton, NJ: Princeton Univ. Press

Ang A, Bai J, Zhou H. 2016. *The great wall of debt: real estate, political risk, and Chinese local government credit spreads*. Work. Pap., Georgetown Univ., Washington, DC

Avgouleas E, Goodhart C. 2017. Utilizing AMCs to tackle the Eurozone's legacy non-performing loans. *Eur. Econ. Banks Regul. Real Sect.* 2017(1):83–95

Bank Int. Settl. 2022. *Total credit to non-financial corporations (core debt)*. Bank Int. Settl., Basel, Switz. **https://stats.bis.org/statx/srs/table/f4.1**

Bernstein S, Hoffman M, Iverson B. 2022. *Life after death: a field experiment with small businesses on information frictions, stigma, and bankruptcy*. Work. Pap., Becker Friedman Inst., Univ. Chicago

Booth CD. 2008. The 2006 PRC enterprise bankruptcy law: The wait is finally over. *Singap. Acad. Law J.* 20:275–315

Brunnermeier MK, Sockin M, Xiong W. 2022. China's model of managing the financial system. *Rev. Econ. Stud.* 89(6):3115–53

CBIRC (China Bank. Insur. Regul. Comm.). 2013. *China Banking Regulatory Commission regulations on the investment operations of commercial banks' wealth management business*. Doc. 8, March, CBIRC, Beijing. **http://www.cbirc.gov.cn/cn/view/pages/governmentDetail.html?docId=274660&itemId=861&generaltype=1**

CBIRC (China Bank. Insur. Regul. Comm.). 2022. *Non-performing loan database*. Statistics Database, CBIRC, Beijing, accessed Apr. 15. **http://www.cbirc.gov.cn/cn/view/pages/tongjishuju/tongjishuju.html**

Charoenwong B, Miao M, Ruan T. 2022. *Non-performing loan disposals without resolution*. Work. Pap., Nat. Univ. Singap.

Chen K, Ren J, Zha T. 2018. The nexus of monetary policy and shadow banking in China. *Am. Econ. Rev.* 108(12):3891–936

Chen Z, He Z, Liu C. 2020. The financing of local government in China: Stimulus loan wanes and shadow banking waxes. *J. Financ. Econ.* 137(1):42–71

Cong LW, Gao H, Ponticelli J, Yang X. 2019. Credit allocation under economic stimulus: evidence from China. *Rev. Financ. Stud.* 32(9):3412–60

Eaton DL, Norley LE, Huang H, Asimacopoulos KM. 2006. China's new enterprise bankruptcy law. *Pratt's J. Bankruptcy Law* 2:543

Fan J, Huang J, Zhu N. 2013. Institutions, ownership structures, and distress resolution in China. *J. Corp. Finance* 23(1):71–87

Fonseca J, Van Doornik B. 2022. Financial development and labor market outcomes: evidence from Brazil. *J. Financ. Econ.* 143(1):550–68

Geithner T. 2009. My plan for bad bank assets. *Wall Street Journal*, Mar. 23. **https://www.wsj.com/articles/SB123776536222709061**

Geng Z, Pan J. 2021. *The SOE premium and government support in China's credit market*. NBER Work. Pap. 26575

Hachem KC, Song ZM. 2016. *Liquidity regulation and unintended financial transformation in China*. NBER Work. Pap. 21880
Hachem KC, Song ZM. 2021. Liquidity rules and credit booms. *J. Political Econ.* 129(10):2855–98
Harmer RW. 1996. Insolvency law and reform in the People's Republic of China. *Fordham Law Rev.* 64:2563–89
Henderson K. 2007. The rule of law and judicial corruption in China: half-way over the Great Wall. In *Global Corruption Report: Corruption in Judicial Systems*, ed. D Rodriguez, L Ehrichs, pp. 151–53. Washington, DC: Transpar. Int., Cambridge Univ. Press
Hsieh CT, Bai CE, Song MZ. 2016. The long shadow of a fiscal expansion. *Brookings Pap. Econ. Act.* Fall:129–65
Hsieh CT, Klenow P. 2009. Misallocation and manufacturing TFP in China and India. *Q. J. Econ.* 124(4):1403–48
Huang Y, Pagano M, Panizza U. 2020. Local crowding-out in China. *J. Finance* 75(6):2855–98
INSOL Int. 2018. *PRC enterprise bankruptcy law and practice in China.* Tech. Rep., INSOL Int., London
Iverson B. 2017. Get in line: Chapter 11 restructuring in crowded bankruptcy courts. *Manag. Sci.* 64(11):5370–94
Jiang Y. 2013. The curious case of inactive bankruptcy practice in China: a comparative study of US and Chinese bankruptcy law. *Northwest. J. Int. Law Bus.* 34:559–82
Jin S, Wang W, Zhang Z. 2023. The real effects of implicit government guarantee: evidence from Chinese state-owned enterprise defaults. *Manag. Sci.* 69(6):3650–74
Lee E. 2011. The reorganization process under China's corporate bankruptcy system. *Int. Law* 45:939
Li B, Li M, Li S, Liu LX. 2023. *The value of bankruptcy court in financial distress: evidence from Chinese bond market*. SSRN Work. Pap. 4285149
Li B, Ponticelli J. 2022. Going bankrupt in China. *Rev. Finance* 26(3):449–86
Liebman BL, Roberts ME, Stern RE, Wang AZ. 2020. Mass digitization of Chinese court decisions: how to use text as data in the field of Chinese law. *J. Law Courts* 8(2):177–201
Liu LX, Lyu Y, Yu F. 2021. Implicit government guarantee and the pricing of Chinese LGFV debt. *J. Financ. Res.* 498(12):170–88
Liu Z, Wong T, Yi Y, Zhang T. 2022. Authoritarian transparency: China's missing cases in court disclosure. *J. Comp. Econ.* 50(1):221–39
Ponticelli J, Alencar LS. 2016. Court enforcement, bank loans, and firm investment: evidence from a bankruptcy reform in Brazil. *Q. J. Econ.* 131(3):1365–413
Rodano G, Serrano-Velarde N, Tarantino E. 2016. Bankruptcy law and bank financing. *J. Financ. Econ.* 120(2):363–82
Song Z, Storesletten K, Zilibotti F. 2011. Growing like China. *Am. Econ. Rev.* 101(1):196–233
State Council People's Repub. China. 2014. *Strengthening the management of local government debts*, Doc. 43. **http://www.gov.cn/zhengce/content/2014-10/02/content111.htm**
Supreme People's Court. 2021. *The supreme court statistics.* Tech. Rep., Beijing. **http://gongbao.court.gov.cn/Details/a6c42e26948d3545aea5419fa2beaa.html**
Visaria S. 2009. Legal reform and loan repayment: the microeconomic impact of debt recovery tribunals in India. *Am. Econ. J. Appl. Econ.* 1(3):59–81
Wind. 2021. *Bond default database*. Wind Database, Wind, Shanghai, accessed May 20. **https://www.wind.com.cn/portal/zh/Home/index.html**
World Bank. 2023. *Resolving insolvency: time (years), average of variable between 2014 and 2020.* Doing Business Database, World Bank, Washington, DC, accessed Jan. **https://databank.worldbank.org/source/doing-business**

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