Empowering through Courts: Judicial Centralization and Municipal Financing in China

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Abstract

This study finds that reducing political influence over local courts weakens local government debt capacity. We establish this result by exploiting the staggered roll-out of a judicial centralization reform aimed at alleviating local court capture in China and find reduced judicial favoritism towards local governments post-reform. The majority of local government lawsuits are with contractors over government payment delays. The reform not only increases government lawsuit losses but also exposes their credit risk, as payment delays without court support signal government liquidity constraint. Investors respond by tightening lending and increasing interest rates, which curbs government spending.

Keywords: judicial centralization, court capture, lawsuit, public finance, information asymmetry, municipal corporate bond

JEL classifications: G12, G30, H70, K40

1 Introduction

A substantial body of literature demonstrates the economic advantages of a judiciary independent of political influences (North and Weingast, 1989; Feld and Voigt, 2003; Voigt et al., 2015). Most discussion is centered around high-level courts, such as the supreme courts, that have substantial power in judicial interpretation, i.e., the way that the judiciary construes the law. Ultimately, if political influences over these courts are powerful enough to compel them to override existing contract terms, isolating these influences and ensuring the independence of the judiciary can send a credible signal of government adherence to contractual obligations (Klerman and Mahoney, 2005; Liu et al., 2022).[1] This is particularly important when addressing matters of public indebtedness, as governments may strategically default on debt obligations if they can affect court decisions to reduce the cost of default or even nullify debt outstanding (Dove, 2018).[2]

In contrast, courts at the grassroots level have very limited power in judicial interpretation and are unlikely to override existing contract terms. Rather than affecting government adherence to contractual obligations, political influences over these courts can only affect to what extent the courts favor governments relative to their counterparties in situations not specified in the contract. We highlight two key aspects that are relevant to the effect of political capture of local courts. First, legal lawsuits of local governments are much more common with contractors and suppliers than with creditors. These contractors and suppliers are directly affected by local court capture, which may indirectly affect creditors. Second, the court rulings contain useful information about the municipal financial conditions, and local court capture may affect information production of the court.

To the best of our knowledge, this paper provides the first empirical analysis about the causal effect of judicial independence on government debt capacity at the grassroots level by

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[1]The degree of political capture of judiciaries is more common in developing economies and civil law countries than in other countries (Glaeser and Shleifer, 2002; Porta et al., 2008).

[2]For example, the popularly elected state Supreme Court of Iowa nullified all outstanding local debt in response to popular wills in 1858, which is regarded as violating rules and potentially undermining future borrowing capacity (Dove, 2017, 2018). See Section 2.3 for more details of the US experiences on this issue.

combining several unique datasets on court filings, contractor invoices, municipal financing and spending. In particular, we exploit the staggered roll-out of China's high-profile judicial centralization reform aimed at alleviating local court capture and study its impact on local governments' debt capacity. We find causal evidence that the judicial centralization reform reduces court bias in favor of local governments. The vast majority of government lawsuits are with contractors and suppliers, often revolving around government payment delays. We find that the reform not only increases local governments' lawsuit losses but also reveals their credit risk as those that delay payment with defense not supported by the court will then be perceived by the creditors to be liquidity constrained. In lawsuits around payment delays, their credit rating is more likely to be downgraded following a defeat. Investors respond by tightening lending conditions and increasing interest rates, which causes more government default and curbs government spending.

China provides an ideal setting for studying the effect of local court capture on municipal debt capacity.[3] First, given China's high level of economic decentralization (Xu, 2011), judicial local protectionism in commercial lawsuits used to be ubiquitous (Gong, 2004). Since 2014, the Supreme People's Court of China (SPC) has been gradually rolling out a high-profile judicial centralization reform that aims to alleviate local court capture by moving the financial and personnel controls over local courts from prefecture-level city governments to provincial governments. This reform has been widely recognized by judges, legal scholars, and economists as having significantly transformed China's judicial system (Zhang and Ginsburg, 2019; Liu et al., 2022). The reform is rolled out in a staggered way and provides an opportunity for us to study the impact of local court capture. Second, since the Great Financial Crisis of 2007-2008, local governments have increasingly relied on Local Government Financing Vehicles (LGFVs) to finance their expenditures, especially infrastructure investment, through the issuance of municipal corporate bonds (MCBs), bank loans, and other financing channels (Chen et al., 2020). Although there has not been

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[3]Following the convention, we refer to the prefecture-level city governments, also known as municipal governments, as local governments in this paper.

any MCB default by the end of 2023, the fear of possible default always exists. A few LGFVs have recently defaulted on debt with other creditors, and the concern for future default risks has intensified.[4]

We build a unique dataset combining several distinct data sources to draw a comprehensive picture of the effects of alleviating local court capture on municipal debt capacity. We start from the universe of MCBs issued by LGFVs until 2023. For all these bond-issuing LGFVs, we download their financial statements between 2010 and 2023 from WIND (a leading financial database in China) and all court verdicts in which these LGFVs were either plaintiffs or defendants from the official court filing disclosure website. In total, 2,144 out of the 3,201 LGFVs are matched to at least one court verdict, and the average number of verdicts involving these matched LGFVs is 33. This number is much higher than the average number of verdicts involving non-LGFV firms, which is roughly 0.1, suggesting important roles of courts in the operation of LGFVs. Next, we merge these LGFVs with a sample of value-added tax (VAT) invoices from a private data vendor, which covers the universe of VAT invoices of 849 contractors and suppliers (excluding grocery stores, hotels, and restaurants) between 2016 and 2023. In total, 1,475 of the 3,201 LGFVs are matched with at least one VAT invoice. Finally, we obtain default and rating downgrading events of LGFVs between 2017 and 2023 from the Enterprise Alert System, a firm monitoring database widely used by financial institutions and government think tanks in China.

In the first part of the paper, we show that the judicial centralization reform significantly mitigates court favoritism towards LGFVs. By exploiting the staggered roll-out of the reform using Difference-in-Differences (DID) estimation and controlling for heterogeneous treatment effect following Sun and Abraham (2021), we find that following the reform in the LGFVs' cities, the win rate of LGFVs decreased by 17.2% when against non-local plaintiffs and 11.6% when against local plaintiffs. In comparison, LGFVs' average win rate is 56.6% as plaintiffs and 50.1% as defendants in our data. The magnitude of the effect is greater for non-local than for local counterparties, consistent with previous findings

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[4]See several reports from Financial Times, Wall Street Journal and Reuters.

that non-local firms suffered from additional local protectionism bias before the reform (Liu et al., 2022). We also find that the decline in LGFVs' win rates is quantitatively larger when the lawsuits are against contractors with a larger contract value.

As placebo tests, we do not find significant changes in the win rates of LGFVs when facing non-local defendants. This is because such cases are typically handled by courts in defendant cities and hence are not affected by judicial reforms in LGFVs' cities. Moreover, we find no significant changes in the win rates of financial vehicles controlled by provincial governments. This finding aligns with the fact that the judicial centralization reform decouples local courts from local governments but not from provincial governments.

We then break down the baseline effect of the reform on LGFVs' win rates into both extensive and intensive margins. The effect on the extensive margin regards changes in the composition of cases. With courts being fairer toward LGFVs' counterparties after the reform, those less powerful counterparties would be more likely to bring disputes with LGFVs to the court. Consistent with this prediction, the reform encourages more small and young firms to file lawsuits against LGFVs. The effect on the intensive margin is estimated conditional on the composition of cases before and after the reform. As the baseline estimates involve an increase in less powerful counterparties with lower win rates, we expect the effect on the intensive margin to be larger than the baseline estimates. By restricting to a subset of cases filed six months before the reform and comparing LGFVs' win rates in cases that reached a verdict before and after the reform – thus holding the case composition constant – we observe a much greater effect.

In the data, more than 93.7% of the lawsuits involving LGFVs are filed by or against their business partners, including contractors and intermediate input suppliers. Given the fairer legal environment for contractors and suppliers after the reform, they may be willing to offer lower prices and those previously unwilling to do business with the LGFVs are open to it now. We test these hypotheses using the VAT invoice data which allows us to observe the unit price, quantity, and details of the products, as well the identity

of the buyers and sellers. To examine the price effect and control for any factors on the sellers' side that may affect changes in their product prices, we calculate price paid by LGFVs relative to those paid by non-LGFV buyers for exactly the same product from the same seller in the same year. We find that after the reform, the relative prices paid by LGFVs decrease significantly by approximately 0.1%. For changes in contractors and suppliers, we find that after the reform, LGFVs purchase more from external contractors and suppliers by about 3.66%. As we discuss above, external contractors and suppliers suffer from additional local protectionism bias than local ones and hence benefit more from the reform. These results provide further support for our hypothesis that the reform reduces court bias in favor of local governments.

In the second part of the analysis, we investigate how the reform has affected the default risk and debt capacity of LGFVs. There is barely any direct effect as very few lawsuits are between LGFVs and creditors (e.g., banks and bond investors). One concern for interpreting the effect of the reform on municipal financing as causal is reverse causality, i.e., the spatial variation of the reform timing may result from the local governments' financial conditions in the first place. In particular, local governments with more financial constraints may be more willing to conduct the reform so as to save the money allocated to local courts. However, this is unlikely to be true as court expenditures constitute a negligible part of local governments' total expenditures. For example, in 2014, total local court expenditures were only 0.69% of total city-level government expenditures. Moreover, there is no significant correlation between the cities' reform status by 2020 and all the outcome variables relating to the local governments' financial conditions and examined in this paper in 2013.

We propose two channels through which the reform many affect municipal financing. The first is increased lawsuit losses for LGFVs, resulting in less money available to meet debt obligations.[5] The second is better information production of the court. Court rulings

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[5]In case of LGFV bankruptcy, contractors' claims typically have seniority over other claims. For example, Article 807 of the Civil Code stipulates that "if the contractee fails to make the agreed payment, ...the contractors' claim is given priority for compensation from the auctioned value of the project."

contain valuable firm information and are used by many financial analysts. Information disclosure can have adverse effect on the credit supply, which is known as the Hirshleifer effect (Hirshleifer, 1971), as with better information riskier borrowers get separated from safe ones and face tightened lending terms. The most common lawsuit of LGFVs revolve around payment delays of LGFVs, which can stem from either liquidity constraint of LGFVs or misconduct of contractors and suppliers. When the LGFVs' defense for payment delays is not supported by the court, outside investors will perceive the LGFVs as more likely to be liquidity constrained and thereby cut lending to these LGFVs. Therefore, the reform can reduce municipal debt capacity by revealing more risky borrowers. The difficulty in debt rollover will further exacerbate their credit risks.

As direct evidence on the information production role of the court, we find that the LGFV is more likely to experience credit rating downgrading after losing lawsuits featuring payment delays of the LGFV. The relationship holds for both OLS and IV estimation where we instrument the LGFV's win rate using the city's judicial reform status. The IV estimation result means that a defeat in lawsuit induced by the reform, holding information collection from other sources constant, is more likely to trigger credit rating downgrading within the next one year. In terms of the magnitude of the effect, the reform has increased the probability of downgrading by 2.38%, which is economically important compared to the mean of 2.1%. Moreover, the effect does not hold for cases that do not involve LGFV payment delays as outcomes of such cases cannot inform the LGFVs' financial conditions.

We first examine whether the reform increases the LGFVs' debt default rate. Despite no formal default of MCBs by the end of 2023, LGFVs have defaulted on non-standard debt obligations, such as trust products, in recent years. Using firm-level DID estimation, we find that the reform has increased LGFVs' default rate by about 0.51%, which is both statistically significant and economically important compared to the mean of 0.3%.

Second, consistent with the positive effect on LGFVs' default rate, we find that the reform has weakened the LGFVs' debt capacity and spending. We first look at municipal

corporate bonds (MCBs) for which we have detailed information on the issuance, maturity, and yields. We aggregate all of the MCBs to construct the annual net issuance and average yield of MCBs for each city in each year and scale the net issuance by the city government's fiscal revenue in 2013, the year before the reform. We find that reform and control cities experienced parallel trends in the net MCB issuance and average MCB yield before the reform. After the implementation of the reform, the net MCB issuance decreases significantly in reform cities as compared to non-reform cities, and the magnitude of the effect stabilizes at approximately 15% in the third year following the reform. Meanwhile, the average MCB yield increases significantly and stabilizes at approximately 0.25% since the second year following the reform. The decrease in net issuance and increase in yields suggest a reduction in investor demand for MCBs, which is consistent with our hypothesis that the judicial reform has weakened local government debt capacity.

As the issuance of MCBs is only part of the LGFVs' financing sources, we then use LGFVs' financial statements to study the overall impact of the reform at the firm level. We find that after the judicial reform, LGFVs' total assets decrease by about 9.34% on average, and the effect keeps increasing at least five years after the reform. Their average borrowing rate also increases by 0.33%, similar to the effect on MCB yields, suggesting that other credit sources, such as bank loans, are also adversely affected by the judicial reform. Unlike other credit sources, trade credit, measured by accounts payable over cost-of-goods-sold, increases by approximately 2.37%. The increase in trade credit is likely a joint outcome of LGFVs' tightened financial constraints and a fairer legal environment that makes business partners more willing to extend trade credit.

Finally, we show that the reform has real impacts by weakening LGFVs' debt capacity. We find that after the reform, LGFVs' total spending on goods and services, fixed asset, intangible and other long-term asset decreases by 22.2%. The decrease in spending has undermined LGFVs' main role in producing residential land inventories for local governments to sell. We find that after the judicial reform, the annual residential land supply at the city level decreases by approximately 22.8 square meters per 100 urban

residents, compared to the mean of 147.2 square meters per 100 urban residents. Average residential land prices also drops by about 10%. The simultaneous reduction in quantity and price suggests that with reduced spending induced by the reform, LGFVs not only cut the production of land inventories but also reduce investment on facilities for each land parcel and lower land quality.

Literature Review. This paper is related to four strands of literature. First, we add to the long-standing literature on the economic consequences of the judicial system, especially the extent of judicial independence. Although the majority of this literature has documented the effects, mostly advantages, of a judiciary independent of political influences (Hayek, 2020; North and Weingast, 1989; Glaeser and Shleifer, 2002; Porta et al., 2008; Besley and Persson, 2011; Acemoglu and Robinson, 2013), few rigorous studies exist on how judicial independence, especially at the grassroots level regarding local courts, affects the judicial outcomes and how it shapes the behaviors of firms and governments. Most related to this paper is Liu et al. (2022), who exploit the same judicial reform in China and find that alleviating court capture can decrease the win rate of local defendants against non-local plaintiffs, reduce local protectionism, and encourage more external investment. Using data from the United States, Tabarrok and Helland (1999) find that compared to appointed judges, elected state judges favor in-state plaintiffs by issuing larger trial awards to redistribute wealth from out-of-state businesses to in-state plaintiffs. Mehmood (2022) shows that in Pakistan, the change in the selection procedure of judges from presidential to peer appointment reduces the number of pro-governmental rulings. Our paper focuses on the win rate of local governments against all counterparties, regardless local or external, and the subsequent effect on local government debt capacity.

Second, we provide novel empirical evidence of the nexus between the legal system and municipal financing. Several papers have investigated the interplay between judicial independence and municipal finance. In the United States, elected judges are typically believed to be more affected by local popular wills and less independent than appointed judges. Using data between 1830 and 1910, Dove (2018) finds a negative correlation between

judges being appointed, as opposed to elected, and municipal defaults. Dove (2017) finds that across different states, the extent of judiciary independence is positively correlated with bond ratings and negatively correlated with municipal borrowing costs. Using municipal financial data from 2009 to 2016, Mughan (2021) finds evidence suggesting that cities use municipal courts to fund governments by increasing fines and fee revenues. Our paper differs from previous studies in two ways. First, we provide micro-level evidence on how court capture affects judicial outcomes involving local governments. Second, we highlight the information production role of local courts and draw a comprehensive picture about the impact on local debt risk and capacity.

Third, the paper offers new insights to the vast literature on debt capacity and borrowing constraints[6] by emphasizing the real and informational impact of judicial decisions. In our paper, LGFVs' lawsuit losses play a dual role in affecting their debt capacity: lower profitability on LGFVs' balance sheets and more information revelation of LGFVs' fundamentals. The former echoes Bernanke and Gertler (1989) in showing the financial accelerator role played by firms' net worth. The latter relates to the classic concern over the adverse impact of information disclosure, as indicated in Hirshleifer (1971). While previous studies mainly focus on the disclosure of bank-specific information in the context of financial crises (Allen and Gale, 2000) and stress tests (e.g., Bouvard et al., 2015; Faria-E-Castro et al., 2017; Goldstein and Leitner, 2018; Dai et al., 2024), we apply the Hirshleifer effect to the local court context. Our paper also joins Liu et al. (2020) and Liu (2023) in documenting the connections between fiscal risks and the government's debt capacity.

Finally, we contribute to the literature on municipal financing, particularly the local government financing in China. Complementing previous studies on the formal municipal bond market in developed countries (e.g., Babina et al., 2021; Auh et al., 2022; Adelino et al., 2023), our paper offers a comparative angle examining the financing of local governments

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[6]Existing literature mainly attribute firms' borrowing capacity to frictions in the financial markets, such as asymmetric information (Stiglitz and Weiss, 1981), agency costs (Bernanke and Gertler, 1989, 1995; Bernanke et al., 1996), and collateral constraints (Kiyotaki and Moore, 1997). Other studies on firms' debt capacity include Turnbull (1979); Shleifer and Vishny (1992); Gan (2007); Rampini and Viswanathan (2010); Drechsel and others (2018); Lian and Ma (2021).

in a large, developing country. Chen et al. (2020) show that the rise in the MCB market in China can be linked to the four-trillion RMB fiscal stimulus following the global financial crisis (Acharya et al., 2024). As local government debt has soared since 2010, concerns about local government default risk (Gao et al., 2021) and potential knock-on effects on credit access in the private sector (Becker and Ivashina, 2018; Demirci et al., 2019; Huang et al., 2020; Zhang et al., 2022), innovation and growth (Croce et al., 2019), land zoning (He et al., 2023), factor allocation (Wu et al., 2018), and liquidity squeeze of government contractors (Hu et al., 2022) have been increasing. We add to this literature by showing the extent of local court capture as another source of risk to local government default risk, debt capacity, and spending. We emphasize that judicial reforms, by reducing local governments' ability to intervene, facilitates better information production about government credit risk and enhances the market forces to discipline government debt issuance.

The rest of the paper is organized as follows. Section 2 introduces the institutional background. Section 3 describes our data. Section 4 documents the effect of the judicial centralization reform on the LGFVs' lawsuit outcomes. Section 5 presents the effect on local government debt capacity and spending. Section 6 concludes.

2 Institutional Background

2.1 Judicial Centralization Reform

Before 2013, China implemented a hierarchical judicial system in which governments managed local courts and procuratorates in the same jurisdiction. The personnel and budgetary reliance on local governments weakens judicial independence, making court decisions prone to interference by local officials.

In November 2013, China's top-level authority outlined a comprehensive reform at the Third Plenary Session of the 18th Central Committee of the Communist Party of China (CPC). One objective of this reform is to ensure the independence and impartiality

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of the judicial system. Specifically, the CPC Central Committee calls for reforming the judicial system by "promoting the unified management of personnel and budgets in local courts and procuratorates below the provincial level and exploring establishing a judicial jurisdiction system that is appropriately separated from administrative divisions."[7] The reform has two components: personnel and budgetary. The personnel reform requires the upper-level provincial governments to manage the appointment of judges in local courts, and the budgetary reform aims to secure funds for local courts from, again, provincial governments. It should be emphasized that the judicial reform does not entirely insulate judicial decisions from political influence; rather, it centralizes judicial authority at higher government levels. The reform is part of the increased centralization efforts since 2013 to rectify China's formerly fragmented mode of governance.

The reform has been steadily rolled out since June 2014. The personnel reform and the budgetary reform usually occur simultaneously, although in a few cities, one reform can precede the other by as long as one year. Following Liu et al. (2022), we pick the earliest date when either of the two reforms is finished as the treatment time. Figure 1 shows the reform years for different cities until the end of 2020. There are 17 cities that finished the reform in 2014, followed by 27 cities in 2015, 65 cities in 2016, 77 cities in 2017, 50 cities in 2018, and 2 cities in 2019. By the end of 2020, 98 out of the 336 cities had not finished the reform. We discuss the determinants of the reform timing in Section 5.1.

2.2 Local Government Debt in China

The Budget Law of the People's Republic of China was promulgated in 1994, which established a centralized fiscal system and prohibited local governments from financing fiscal deficits through bank loans or bonds. Lacking the ability to use debt, many local governments relied on transfers from the central government to finance their expenditures.

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[7]See The Decision of the Central Committee of the Communist Party of China on Several Major Issues Concerning Comprehensively Deepening Reform, approved by the Third Plenary Session of the 18th Central Committee of the Communist Party of China, November 12, 2013.
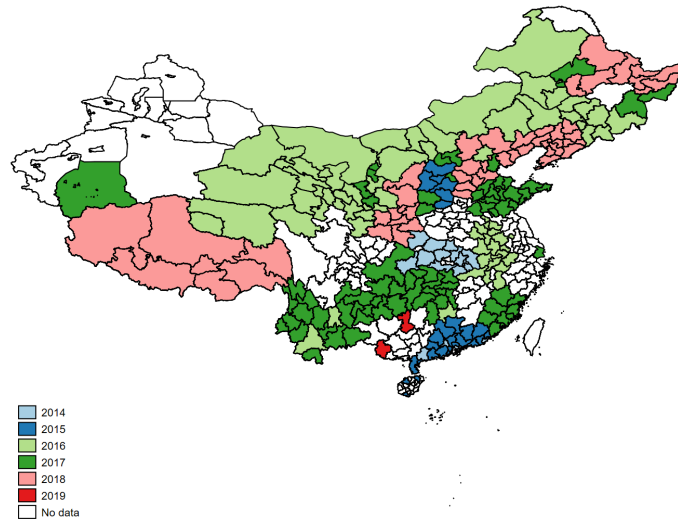
Figure 1: Timeline of the Reform

Note: In this figure, we plot the year of the judicial centralization reform across different cities. "No data" means that by the end of 2020, the city has not finished the reform yet.

The tension between local government expenditures and financing restrictions heightened in 2008. In response to the global financial crisis, the Chinese government rolled out a 4 trillion fiscal stimulus plan to stabilize the economy, requiring local governments to provide the majority of the funding (Acharya et al., 2024). To finance this stimulus plan without violating the Budget Law, the central government started to encourage local governments to establish legal entities known as Local Government Financing Vehicles (LGFVs), which can obtain funds through bonds, banks loans and other credit sources to finance public investment projects. The size of local government debt took off ever since.[8]

LGFVs are essentially state-owned enterprises (SOEs) that raise funding for local governments from the financial markets. Different from typical municipal bonds in developed countries, bonds issued by LGFVs are de jure corporate bonds but are backed by local governments, either explicitly or implicitly. Therefore, these bonds are commonly referred to as municipal corporate bonds (MCBs) (e.g., Chen et al., 2020).

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[8]Several papers (e.g., Bai et al., 2016; Chen et al., 2018; Ang et al., 2018; Chen et al., 2020) have documented the connection between the four trillion yuan stimulus package and the reliance of local governments on the shadow banking system to raise off-budget funding.

In 2015, the Budget Law was revised and authorized local governments to issue municipal bonds, with the intention of winding down the rapid growth of the informal government financing through LGFVs. However, the outstanding debt of LGFVs kept growing after 2015 and the fear for default risks intensified in recent years. In December 2023, Moody's downgraded the credit rating outlook of 22 LGFVs from stable to negative, reflecting growing concerns over "local governments' ability to deal with mounting hidden debt amid a protracted property slump."[9]

2.3 Judicial System and Municipal Finance: The U.S. Experiences

The interaction between judicial independence and municipal financing has drawn much attention in the history of the U.S. state judiciary system. Early state courts in the United States were typically selected through legislative appointment. Due to concerns regarding undue influence from a state legislature and outright judiciary corruption, many states shifted toward popular elections since the 1840s. New York set a precedent in 1846, and by 2021, approximately three-fourths of the states selected their judges through elections. Nonetheless, anecdotal evidence suggests that popularly elected state judiciaries are influenced by popular wills when addressing local public indebtedness. Hillhouse (1936) noted that many citizens, who eventually bear the responsibility of repaying local public debt as tax payers, believed that any state court decision favoring creditors was proof that the court had been "bought up" by the creditors.

One illustrating example is Iowa. In 1850, the Iowa state legislature passed legislation granting county indebtedness with the support from the state Supreme Court. While municipal indebtedness grew as a result, the panic of 1857 severely crippled the industries within Iowa. Meanwhile, the state Supreme Court was transformed into a popularly elected body in 1858. Faced with growing agitation against debt obligations, the newly elected Iowa Supreme Court nullified all outstanding local debt. The Iowa court's decision had a

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[9]See the Wall Street Journal report.

snowball effect, with the high courts of Wisconsin, Michigan, and Missouri overturning prior decisions favoring creditors. These overturns led to significant federal litigation. Fairman (1971) indicates that the United States Supreme Court heard over 200 municipal bond cases throughout the latter half of the nineteenth century, most of which came from states with elected state courts.[10]

In the example above, the state Supreme Court has substantial power in judiciary interpretation and hence the authority to nullify outstanding debt obligations. In contrast, grassroots-level courts have to respect the contract terms. The intervention of local governments can at best affect to what extent the courts favor local governments in situations not specified in the contract, which is conceptually different from affecting government adherence to contractual obligations.

3 Data

3.1 LGFVs and MCBs

We focus on bond-issuing LGFVs as only these LGFVs disclose adequate financial information for our analysis. We start by downloading data on all bonds issued before the end of 2023 and identified as MCBs by both WIND and Rating Dog. We further restrict our sample to the MCBs issued by LGFVs that are controlled by the prefecture-level city governments or lower-level government units. In Section 4, we also use MCBs issued by provincial or central government financing vehicles for placebo tests.

Panel A of Table 1 shows some summary statistics for these MCBs. There are 3,201 unique LGFVs and approximately 36,000 MCBs. The average issuance amount is 0.73 billion RMB and the average yield is 5.11%. There is considerable variation in the bond yield, as reflected by a standard deviation of 1.55%, which is consistent with the fact that

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[10]In several instances, the U.S. Supreme Court reprimanded some of these high courts. When referencing the Iowa decision, Justice Noah Swayne of the U.S. Supreme Court suggested that "[w]e shall never immolate truth, justice, and the law because a State tribunal has erected the altar and decreed the sacrifice." (As quoted in Fairman (1971), p. 936).

despite no formal MCB default as of 2023, investors do not consider all MCBs equally safe, and the underlying credit risk as priced by investors varies across different cities.

Panel B shows some key summary statistics for the LGFVs between 2010 and 2023. The average asset size is 26.3 billion RMB. On average, 18.1% of their assets are financed by loans, 8.1% by bonds, and 50.5% by all kinds of liabilities. To calculate the trade credit that these LGFVs receive, we divide their accounts payable by the sum of accounts payable, cash paid for goods and services, and cash paid for fixed asset, intangible asset and other long-term investment. We include cash outflows from investing activities because LGFVs typically invest in infrastructure projects, which are considered as investing activities on their balance sheets. This measure then reflects the credit that LGFVs receive from both input suppliers and project contractors. We also estimate the firm-level borrowing rate as the interest expense scaled by the sum of short- and long-term loans and bonds. The average borrowing rate is approximately 2.3% with a standard deviation of 2.6%. Finally, the annual cash paid is about 2.0 billion RMB for goods and services and 1.4 billion RMB for fixed, intangible and other long-term investment.

Panel C shows the average default rate of our sample LGFVs. Despite no formal MCB defaults by 2023, there have been defaults by LGFVs on non-standardized debt obligations such as loans and trust products.[11] We obtain default events on non-standardized debts between 2016 and 2023 from the Enterprise Alert System and match them with our sample LGFVs.[12] In total, there are 139 default events involving 56 LGFV borrowers.

Unfortunately, the dollar amount at default is mostly missing in the data. Instead, we define a dummy default indicating that the LGFV has at least one default events in that year. Among all the LGFVs during 2016-2023, the average default rate is 0.3%, increasing

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[11]In 2013, the China Banking Regulatory Committee (CBRC) issued regulations on bank wealth-management products, in which it defined non-standardized (*feibiao* in Chinese) debt as any debt assets not traded on exchanges or in the interbank market, including but not restricted to bank loans, trust products, entrusted loans, bank notes, warrants, accounts receivable, and equity products with repurchase agreements.

[12]The Enterprise Alert System collects default events from various public sources, including the China Securities Regulatory Commission, China Banking and Insurance Regulatory Commission, National Enterprise Credit Information Publicity System, China Judgments Online (CJO), China Enforcement Information Disclosure Website, and major financial news websites. The Enterprise Alert System has been widely used by financial institutions, government think tanks, tech companies, and universities in China.

from 0 in 2016 to 1.1% in 2023. The average number of default events, default n, is 0.005, increasing from 0 in 2016 to 0.02 in 2023.

3.2 Court Verdicts

We collect all court verdicts in China between 2014 and 2021 from the China Judgment Online (CJO), totaling over 144 million judgment files.[13] For each judgment file, we extract information such as the court in charge, trial and ruling dates, names of the judge and other court clerks, names of the plaintiff and defendant, basic facts about the case, a summary of the trial process, claims made by the plaintiff, whether the court supported the plaintiff's claims, and the judicial reasoning provided by the judge. From this dataset, we identify 70,364 civil lawsuits involving LGFVs. Figure A.1 plots the time trend of the number of cases involving LGFV defendants and plaintiffs.

A key variable for our analysis is the win rate of each party in a lawsuit. In civil practice, court fees are typically paid by the losing party. Therefore, how court fees are shared between the plaintiff and the defendant indicates the extent to which each party wins or loses in a lawsuit from the court's perspective. For example, a plaintiff who wins completely usually pays 0% of the court fees, whereas an even split of the fees implies that each side win 50%. To measure the win rate of each side, we use the share of the opposing side's obligation to pay court fees as follows: $WinRate_j = \frac{CourtFee_i}{CourtFee_i + CourtFee_j}$. Panel D of Table 1 shows that the average win rate is 0.566 for cases in which LGFVs are plaintiffs and 0.500 for cases in which LGFVs are defendants.

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[13]CJO is the official website established by the Supreme People's Court in 2013 to disclose court verdicts with the intention of enhancing judicial transparency and providing precedents for judges. Courts at all levels are required to publish all contemporary judgment files within seven days of trial completion, with exceptions granted for special cases such as those involving national security or juvenile delinquency. Due to judge complaints of increased workload and misuse of the verdicts, the number of verdicts disclosed on CJO has declined significantly after 2021, and hence we use the sample until 2021 (See the China File report).

3.3 Value-Added Tax (VAT) Invoices

We obtain a sample of VAT invoices issued between 2016 and 2023 from a leading VAT invoice management platform, covering approximately 400 different conglomerates with 27,000 different subsidiaries that use the platform to issue VAT invoices to 4.7 million different customers.[14] The data covers approximately 400 million VAT invoices. The VAT invoice records detailed information at the transaction level, including the name and tax ID of the seller and the buyer, the transaction date, the detailed identifying information of the transacted goods and services, the unit price, and quantity.

We focus on VAT invoices for which LGFVs are the customers and the sellers are contractors and suppliers of LGFVs. As the sample selection is on the sellers' side, our analysis at the LGFV level does not suffer from sample selection. We exclude grocery stores, hotels, and restaurants by dropping sellers whose average selling VAT invoice value is below 50,000 RMB. In total, 1,688 out of the 3,201 LGFVs are matched with at least one VAT invoice with the selected contractors and suppliers.

Panel E of Table 1 provides summary statistics for these matched VAT invoices. The average unit price is 69.1 thousand RMB, and the average value is 55.8 thousand RMB. The relative price paid by LGFVs as compared to non-LGFVs for the same product from the same seller in the same year is 1.029 (See Section 4.5 for the definition of "relative price"). On average, LGFVs purchase 61.3% from external sellers. The average size of their sellers, measured by contributed capital, is 413.7 million RMB, and the average age is 23 years.

3.4 Land Auction Data

We download all the land sale data from landchina.com, the official website established by the Ministry of Natural Resources to disclose the universe of land sales by local governments in China since 2007 (He et al., 2023). We focus on land parcels sold through

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[14]Since 2016, a VAT has been applied to all firms in China, including intermediate goods producers, final goods sellers, and service providers. Before 2016, firms in certain industries paid business taxes and switched to paying the VAT after a tax transition reform in 2016. For more details, see He et al. (2023).

market-based mechanisms (e.g., agreement, tender, auction, and listing) and aggregate transactions by land zoning to the city-year level. Panel F of Table 1 shows that the annual residential land supply during 2007-2023 is about 147.1 sqm for every 100 urban residents. The average land price is 2,860 RMB per square meter.

4 Judicial Reform and LGFVs' Lawsuits

In this section, we study the impact of the judicial centralization reform on the extent of judicial favoritism towards LGFVs in commercial disputes. We first lay out our empirical strategy in Section 4.1. In Section 4.2, we examine the impacts of the reform on lawsuit outcomes involving LGFVs. In Section 4.3, we present the baseline results. In Section 4.4, we decompose the baseline effects into intensive margin changes in judges' incentives and extensive margin changes in case composition. Finally, in Section 4.5 we show that changes in ex-post lawsuit outcomes also affect ex-ante contracts.

4.1 Empirical Strategy

For the baseline analysis, we employ case-level data and exploit the staggered roll-out of the reform to estimate the following difference-in-differences (DID) model:

$$winrate_{icnt} = \beta \cdot Reform_{ct} + \alpha_n + \theta_t + \epsilon_{icnt}, \tag{1}$$

where $winrate_{icnt}$ is the win rate of LGFVs in case i tried in court n and semi-year t; $Reform_{ct}$ is a dummy variable that equals one if the city c where the LGFV is located had gone through the reform at time t and zero otherwise; and α_n and θ_t represent court and semi-year fixed effects, respectively. We cluster standard errors at the prefecture level since the reform is rolled out at this level.

To test for parallel trends of our DID design and understand the dynamic effect of the

Table 1: Data Summary

	Mean	Median	St. Dev.	Obs
A: MCB				
MCB issuance, RMB Billion	0.730	0.600	0.444	36365
MCB yield, %	5.108	4.950	1.555	36390
B: LGFV				
Asset, RMB Billion	26.325	16.205	33.236	29145
Loan/Asset	0.181	0.169	0.112	29061
Bond/Asset	0.081	0.069	0.081	29061
leverage	0.505	0.526	0.159	29061
Account payable/COGS	0.174	0.116	0.182	28802
borrowing rate, %	2.319	1.326	2.613	22805
Cash paid for goods&service, RMB Billion	2.0097	1.0223	4.4821	29066
Cash paid for investment, RMB Billion	1.4557	0.3991	4.6217	29064
C: Non-Standard Debt Defaults				
default	0.003	0.000	0.058	25784
defaultn	0.005	0.000	0.117	25784
D: Court Verdicts				
LGFV's win rate as plaintiffs	0.566	0.911	0.488	21,800
LGFV's win rate as defendants	0.501	0.468	0.469	48,564
E: VAT Invoices				
Price, RMB Thousand	69.112	0.064	2040.000	2.69E+07
Contract Value, RMB Thousand	55.867	1.367	594.000	2.85E+07
relative price, %	102.887	98.274	27.691	2640
supexternal	0.613	1.000	0.473	4940
supregistercap, RMB Million	413.728	146.621	655.938	4922
supage	23.631	22.980	9.789	4940
F: Residential Land Supply				
Land Supply/Pop, sqm per 100 people	147.151	114.689	137.290	5008
Land Price, RMB per sqm	2860.725	1529.078	5163.871	4996

Note: Panel A is for all MCBs issued during 2011-2023. Panel B is based on LGFVs' financial statements during 2010-2023. Panel C presents the dummy indicating LGFVs' default (`default`) and the number of default events (`defaultn`) during 2016-2023. Panel D presents the lawsuit win rate of LGFVs during 2014-2021. Panel E is based on our sample VAT invoices during 2016-2023 – the first two rows report LGFVs' purchase invoices and the remaining report aggregated values at the LGFV-year level. Panel F reports the residential land supply and land price at the city-year level.

reform, we also estimate the following event study model:

$$winrate_{icnt} = \sum_{\tau \neq -1} \beta_\tau \cdot \mathbf{1}_{t-T_c=\tau} \cdot \text{Reform}_{ct} + \alpha_n + \theta_t + \epsilon_{icnt}, \qquad (2)$$

where T_c represents the semi-year when city c completed the reform and β_τ represents the treatment effect τ periods away from the reform.

Throughout this paper, we account for heterogeneous treatment effects following Sun and Abraham (2021). The patterns remain the same for the conventional unadjusted event study estimates and for estimates based on other methods proposed in the recent literature (e.g., Borusyak et al., 2021; and Callaway and Sant'Anna, 2021). We present different versions of event studies when discussing the robustness of our findings.

4.2 Baseline Results

Table 2 presents the baseline DID results obtained from estimating Equation (1) using case-level data. As the cases are handled by courts in defendants' cities, Columns (1)-(5) focus on cases with LGFVs as defendants to ensure that local courts handle the cases. Column (1) reveals a notable post-reform shift: local courts demonstrate a significant decrease in favorable rulings toward LGFV defendants, with their average win rate against plaintiffs dropping by 14.0% – a 25.4% decline from the pre-reform baseline win rate.

We then split the sample into cases involving external and local plaintiffs in Columns (2) and (3), respectively. Given that pre-reform local court protectionism disadvantages external plaintiffs more than local plaintiffs, we anticipate that the reduction in LGFVs' win rates against external plaintiffs is greater than that against local plaintiffs. The coefficient estimates shown in Column (2) and (3) support this hypothesis. Furthermore, as shown in Columns (4) and (5), the effect of the reform is more pronounced in high-stakes cases (i.e., with disputes are over construction contracts) than in other low-stakes cases.[15]

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[15]Disputes over construction contracts represent the most frequently observed cases with higher economic stakes, featuring an average monetary damage claims of 5 million RMB.

Table 2: Judicial Centralization Reform and LGFVs' Win Rate

LGFVs as	(1)	(2)	(3)	(4)	(5)	(6)
	Defendants					Local PLTF
	All	External Plaintiffs	Local Plaintiffs	High-stakes	Low-stakes	All Cases
Reform	-0.140***	-0.172***	-0.116***	-0.268***	-0.084**	-0.078
	(-4.67)	(-3.74)	(-3.52)	(-8.93)	(-2.33)	(-1.39)
Mean of Outcome	0.55	0.55	0.55	0.55	0.55	0.60
Court FE	Y	Y	Y	Y	Y	Y
Semi-year FE	Y	Y	Y	Y	Y	Y
Observations	45,681	14,389	31,292	14,355	31,326	16,951
R-Squared	0.231	0.322	0.254	0.263	0.301	0.279

Notes: This table reports the baseline DID estimates on judicial outcomes in commercial lawsuits involving LGFVs. Columns (1)-(5) focus on the win rates of LGFVs as defendants in cases against both local and external plaintiffs (PLTF) tried in local courts. Column (6) investigates the LGFVs' average win rates as local plaintiffs in cases against local defendants tried in local courts. Standard errors clustered by cities. Robust t-statistics in parenthesis. *** p < 0.01, ** p < 0.05, * p < 0.1.

Column (6) investigates the changes in LGFVs' win rates in cases against local defendants, which are still handled by local courts. Here, we observe a negative but statistically insignificant impact on LGFVs' win rates. This weaker significance may be due to strategic adjustment by LGFVs in response to the reform; LGFVs may now be more selective in pursuing litigation, favoring cases with stronger legal grounds and potentially opting for alternative dispute resolution methods, such as settlements, for weaker cases.

Figure 2 shows the dynamics of the treatment effect by plotting the event study coefficients obtained from estimating Equation (2). For the baseline specification, we observe a flat pre-trend before the reform, validating the parallel trend assumptions for the DID specification. We observe a salient reduction in local defendants' win rate immediately after the reform. The reform's impact has been persistent for more than three years since the reform. Similarly, the event study estimates for cases in which LGFVs act as plaintiffs filing lawsuits against local defendants show consistent patterns. Although the point estimates in the DID regression are not statistically significant, there is indeed a clear downward trend in LGFVs' win rates after the reform. For robustness, Appendix Figure A.2 presents alternative event study estimates following Borusyak et al. (2021), and our
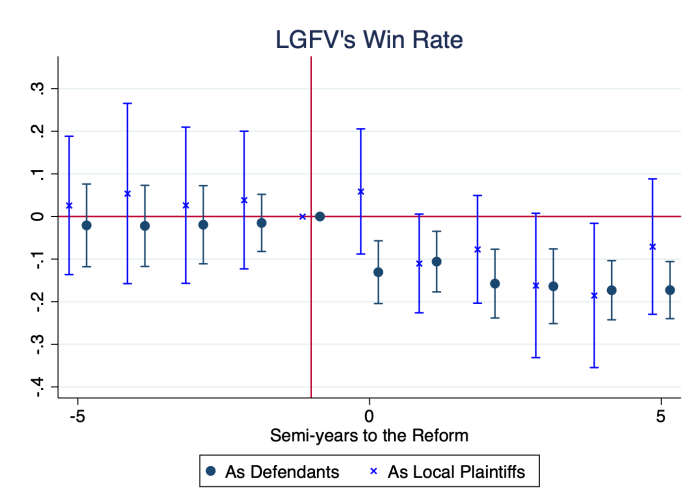
Figure 2: Judicial Centralization Reform and LGFV's Win Rate: Event Study

Note: In this figure, we plot the event study coefficients (and the corresponding 95% confidence intervals) for the baseline results in Columns (1) and (6) of Table 2, respectively. All event studies are estimated following the approach suggested by Sun and Abraham (2021).

results remain robust.

4.3 Placebo Tests

We interpret the effect of the reform on LGFVs' win rates as causal. One concern is that there could exist some local economic shocks that are both correlated with the status of the reform and affect LGFVs' win rates. To provide sharper evidence to address this concern, we delve into two placebo tests by focusing on two specific subsamples: a) cases involving financing vehicles controlled by a provincial or the central government and b) cases in which LGFVs are plaintiffs filing lawsuits against external defendants (and hence are handled by courts in their counterparties' jurisdictions).

For cases involving provincial or central-level financing vehicles, we anticipate two potential effects of the reform: on the one hand, these high-level financing vehicles are likely unaffected by the reform because, unlike locally-controlled LGFVs, they are not directly connected to local governments; on the other hand, the reform increases provincial governments' control over local courts, potentially pressuring them to provide biased
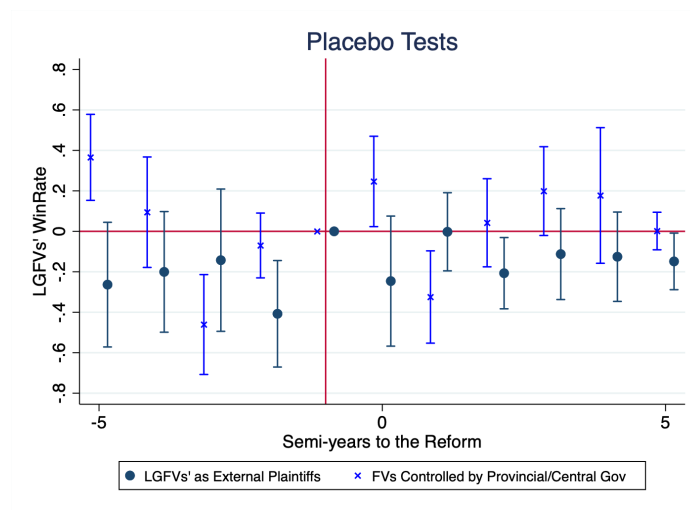
Figure 3: Placebo Tests

Note: In this figure, we plot the event study coefficients (and the corresponding 95% confidence intervals) for: a) cases involving LGFVs controlled by provincial or central government; and b) cases where LGFVs are plaintiffs filing lawsuits against external defendants, which are handled by courts in the counterparts' jurisdiction. All event studies are estimated following the approach suggested by Sun and Abraham (2021).

rulings favoring these financing vehicles even more post-reform. For cases handled in external courts, the reform in the LGFVs' cities should not have any impact on the lawsuit outcomes. Note that the alternative explanation based on local economic shocks should predict similar effects for these two subsamples.

Figure 3 shows the dynamics of the treatment effect for these two samples by plotting the event study coefficients obtained from estimating Equation (2). There are no changes in the win rates of provincial- or central-level financing vehicles after the reform, or in cases handled by external courts. This finding indicates two things. First, the baseline result is specific to the reduction in courts' protectionism, which favors local governments, rather than other factors affecting all plaintiffs and defendants. Second, despite granting more power to provincial-level governments, the reform does not seem to result in greater protectionism toward these provincial-level LGFVs.

4.4   Intensive and Extensive Margin

Our baseline findings regarding the win rates of LGFV defendants using case-level data represent a mixture of intensive and extensive margin adjustments. First, on the intensive margin, the judicial centralization reform may alter incentives of judges, leading to a scenario where identical cases are adjudicated differently pre- and post-reform. Second, on the extensive margin, after noting the effects on the intensive margin, plaintiffs may adjust their litigation strategies (e.g., firms may become more inclined to file lawsuits against LGFVs), thus shifting the composition of LGFV-related lawsuits. In this section, we delve into these two aspects separately and find that the intensive margin predominantly influences our baseline findings. Changes in case composition appear to counteract our baseline results, as the reform has emboldened plaintiffs who were previously less likely to win the case to initiate litigation.

First, to examine the effect on the intensive margin, we focus on a subset of lawsuits initiated within six months prior to the implementation of the reform. We then compare the outcomes of these cases based on whether the rulings were issued before or after the reform. As indicated in Table A.1, this approach ensures a consistent case composition: the characteristics of plaintiffs and defendants in cases adjudicated before and after the reform are well balanced. Thus, by comparing these two groups of cases, we can effectively eliminate the influence of the extensive margin. As presented in Table 3, for the identical court and judge, decisions rendered immediately before the reform were significantly more favorable toward LGFV defendants than those made shortly after the reform. The magnitude of this effect is considerably greater than that observed in our baseline DID analysis, supporting the conclusion that the changes in judges' incentives are the primary driver of the observed baseline outcomes.[16]

Second, we delve into the extensive-margin impact of the reform on the case composition. Column (1) of Table 4 shows that lawsuits involving LGFV defendants have

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[16]This analysis of changes in judges' behavior aligns conceptually with Ash et al. (2022).

Table 3: Intensive Margin - Conditional on Case Composition

Dep Var: win rate	(1)	(2)
Reform	-0.159**	-0.189**
	(-2.24)	(-2.33)
Mean of Outcome	0.55	0.55
Court FE	Y	N
Semi-Year FE	Y	Y
Judge FE	N	Y
Observations	1,588	1,554
R-Squared	0.579	0.615

Notes: This table focuses on the subset of cases that were filed within six months before the local court adopted the reform and compares the rulings made before and after the reform. Standard errors are clustered by cities. Robust t-statistics in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

seen a 4.2% increase post-reform.[17] This finding aligns with the notion that the reduced judicial protection of LGFVs has emboldened plaintiffs to pursue legal action against LGFVs. Beyond the sheer volume of cases, the characteristics of the plaintiffs involved in these lawsuits against LGFVs have also noticeably shifted. As detailed in Columns (2)-(4) of Table 4, after the reform, the plaintiffs are characterized by 25.4% less registered capital, 55.4% fewer employees, and 7.5% younger in terms of firm age. These findings suggest that before the reform, many smaller plaintiff firms may have been deterred from suing LGFV firms due to the low perceived likelihood of success. The reform has encouraged such firms to initiate lawsuits, leading to a significant shift in the case composition.

The extensive margin effect results in more lawsuits featuring weaker plaintiffs against LGFV defendants. Given that these cases typically exhibit lower win rates for the plaintiffs—a factor contributing to their reluctance to initiate such lawsuits prior to the reform—the inclusion of these cases in the overall composition introduces a downward bias in our baseline estimates. This observation aligns with the finding that the intensive margin effect, which is not influenced by this shift in case composition, is significantly more pronounced than the baseline effect which represents both intensive and extensive margin effects.

The effect of the judiciary not only depends on the court decisions per se, but also on

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[17]On average, LGFVs are defendants in 76% of the cases involving either LGFVs as defendants or plaintiffs.

Table 4: Extensive Margin - Changes in Case Compositions After Reform

	LGFV's lawsuits	Plaintiff's Characteristics		
	percentage of being sued	Regis. Capital (M)	# of Employees	Firm Age
	(1)	(2)	(3)	(4)
Reform	0.042***	-18.196**	-87.370**	-0.983*
	(3.50)	(-1.99)	(-1.99)	(-1.91)
Mean of Outcome	0.76	71.29	157.74	12.18
Court FE	Y	Y	Y	Y
Seimi-year FE	Y	Y	Y	Y
Observations	16,773	16,133	17,602	17,857
R-Squared	0.608	0.260	0.272	0.264

Notes: This table reports the impacts of the judicial organizational reform on the composition of commercial lawsuits against LGFVs. Column (1) presents the DiD estimate for the share of LGFV defendant lawsuits over all cases involved LGFVs in each court for each semi-year period. Columns (2), (3), and (4) present the DiD estimates on plaintiffs' registered capital, number of employees, and firm age, respectively. Standard errors are clustered by cities. Robust t-statistics in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

the trial process and the enforcement of court decisions. We provide further analysis about potential side effects of the reform on trial speed and court order enforcement in Appendix B. Regarding the trial process, we calculate the case duration as the time from filing to verdict and find no significant changes in the duration of LGFVs' cases after the reform. This suggests that although the reform encourages more plaintiffs to initiate lawsuits against previously protected defendants, there is no material impact on judicial congestion. For the enforcement of court decisions, using a unique dataset from Credit China which records every instance of non-compliance with court orders, we do not find significant changes in the non-compliance after the reform. It seems that lifting the leverage of local governments over local courts has not weakened the enforcement of court decisions.

4.5 Responses of Contracting Prices and Contractors

As the final exercise, we investigate whether the judicial reform that affects the lawsuit outcomes ex post would affect the contracts ex ante. From the perspective of LGFVs' counterparties, the extent of judicial independence or court capture can be thought of as

affecting the ex-post transfer between them and LGFVs, with a greater degree of judicial independence shifting less transfer to or more transfer from LGFVs. Given higher expected payoff ex post, contractors and suppliers may be willing to offer lower prices ex ante, and those previously unwilling to do business with LGFVs may be open to it post-reform.

To investigate the price effect and control for any factors on the seller side that may affect contracting prices, we use prices paid by non-LGFVs for the same products as the benchmark and calculate the relative price paid by LGFVs.[18] That is, we scale the price paid by LGFVs by the average prices paid by all non-LGFVs for the product with the same name and specification from the same seller in the same year. We then investigate whether the relative price decreases by more for LGFVs in cities with the judicial reform than for LGFVs in cities without the reform. If the non-LGFVs serving as the benchmark are in the same city as LGFVs and the judicial reform also affects the lawsuits and hence the prices paid by these non-LGFVs in the same way as it affects LGFVs, this relative price measure underestimates the price impact of the judicial reform. [19]

Formally, we define the relative price paid by LGFVs as follows:

$$rp_{i,j,k,t} = P_{i,j,k,t} \Big/ \sum_{i' \notin \mathbf{L}} P_{i',j,k,t} \frac{Q_{i',j,k,t}}{\sum_{i' \notin \mathbf{L}} Q_{i',j,k,t}} \qquad (3)$$

, where $P_{i,j,k,t}$ denotes the price paid by firm i to seller j for product k in year t, $Q_{i,j,k,t}$ the corresponding quantity, and $\mathbf{L}$ the set of LGFVs. We then estimate the price impact of the judicial reform via the following DID model and take into account heterogeneous treatment effect following Sun and Abraham (2021):

$$rp_{i,j,k,t} = \beta \cdot Reform_{c(i),t} + \alpha_i + \theta_t + \varepsilon_{i,j,k,t} \qquad (4)$$

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[18]Note that the sample only includes manufacture products such as elevators and we have to exclude construction projects as there are no well-defined prices.

[19]An alternative strategy is to conduct within-product analysis. That is, for the same product from the same seller, we can check whether LGFVs receive lower prices after the judicial reform as compared to LGFVs located in cities that have not experienced the judicial reform. This exercise requires us to observe the transaction prices for the same product from the same seller to both the treated and control LGFVs in both the pre- and post-treatment periods. However, in our data there are no such observations.

Table 5: Impact of Judicial Reform on Ex-ante Contracts

Panel A: Price Effect

Dep Var: relative price, %	(1)	(2)	(3)
Sample: price variation <	0.2	0.15	0.25
Reform	-0.0947***	-0.0862***	-0.109***
	(-5.991)	(-3.654)	(-2.712)
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	2623	2330	2962
Contract Value	0.9108	0.9264	0.8911

Panel B: Change in Contractors and Suppliers

Dep Var:	supexternal	log(supregistercap)	log(supage)
	(1)	(3)	(4)
Reform	0.0366*	0.019	0.0131
	(1.671)	(0.184)	(0.513)
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	4,493	4,477	4,492
R-squared	0.7726	0.4968	0.6441

Note: This table shows how a more favorable legal environment for LGFVs' counterparties after the reform affects their contracts ex ante. Panel A shows that LGFVs can purchase inputs at lower prices, and Panel B shows that they buy more from external suppliers and contractors. Standard errors are clustered by cities. Robust t-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The results are shown in Panel A of Table 5. To ensure uniform quality and variety of products, we calculate the price variation as the standard deviation scaled by the average prices for products with the same name and specification from the same seller in the same year. We restrict the sample to products with price variation smaller than the median, which is about 0.2. The average rp conditional on this sample is about 1.029 as shown in Table 1. Column (1) shows that the prices paid by LGFVs decrease significantly by 0.09% after the reform. In Column (2)-(3) we check the robustness of the results with different threshold for the price variation. Overall, contractors and suppliers are willing to offer lower prices to LGFVs after the reform, despite the small magnitude of the effect.

In addition to the price effect, the reform may also attract contractors and suppliers previously unwilling to do business with LGFVs to do it now. As shown in Table 2, the

reform benefits external counterparties more than local ones. Thereby, we expect external contractors and suppliers to increase their business with LGFVs more than local ones.

To test this prediction, we aggregate the VAT invoices to the LGFV-year level and calculate the share of invoices from external contractors and suppliers in terms of transaction value. We then run the following DID model:

$$y_{i,t} = \beta \cdot \text{Reform}_{c(i),t} + \alpha_i + \theta_t + \varepsilon_{i,t} \tag{5}$$

Panel B of Table 5 shows the results. In Column (1), we find that after the reform, LGFVs significantly increase their purchases from external sellers by approximately 3.7%, which is consistent with our prediction. In Column (2)-(3), we look at the average size (measured with contributed capital) and age of the suppliers and contractors and do not find statistically significant changes after the reform.

In addition to affecting ex-ante contracting prices through ex-post lawsuit outcomes, the judicial reform may also affect contract prices indirectly through LGFVs' debt capacity. As we will show in the next section, alleviating local court capture has undermined local governments' borrowing capacity. The tightened financial constraints of LGFVs may further cause them to ask for lower prices from their contractors and suppliers.

The analysis on the ex-ante contracts serves two purposes. First, it lends further support to the hypothesis that the reform has benefited the counterparties of LGFVs. In fact, the evidence in this section suggests that the counterparties have anticipated such benefit when initiating the contract. Second, and mostly importantly, the magnitude of the price impact is very small and unlikely to fully offset the increased lawsuit losses, not to mention better information production of the court, after the reform. We will compare the magnitude of the price advantages with the lawsuit losses in Section 5.2.

5 LGFVs' Debt Capacity and Spending

In this section, we study whether and to what extent alleviating local court capture affects the financing and operating activities of LGFVs. Since about 93.67% of the lawsuits involving LGFVs are against their business partners (the rest against finance companies and few against banks)[20], the creditors of LGFVs do not directly benefit from the reform but can be indirectly affected by the judicial reform. We start by discussing the identification assumptions and the channels through which the reform could affect the financing of LGFVs. We then show the impact of the reform on LGFVs' credit default, debt capacity and spending. We provide evidence on the real effect in the end.

5.1 Identification Assumptions

There are two types of concerns when we interpret the effect of the judicial centralization reform on LGFVs' debt capacity and spending as due to less court favoritism towards LGFVs. The first concern is reverse causality. That is, city governments with tightened budget constraints may be more willing to implement the reform so as to save the money that would be allocated to the local courts without the reform. However, this argument is unlikely to be relevant because, in the data, court expenditure is a negligible fraction of city governments' budgetary expenditure. According to the government fiscal report in 2014, total local court expenditure is 0.69% of total city government budgetary expenditure. The reform barely has any direct effect on city governments' financial conditions and cannot be driven by the city governments' financial conditions in the first place. [21]

The second concern involves omitted variables or confounding shocks that may be related to both the reform and the local fiscal conditions. In the following analysis, we

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[20]The debt contracts are much simpler and more standard than the procurement and construction contracts, leaving less room for disputes, which may explain why disputes over procurement and construction contracts are much more common than over debt contracts.

[21]Yang and Li (2023) argue that provincial-government financial conditions may have some effect on the decision to implement the reform since the reform makes court expenditure their burden. In 2014, total court expenditure was approximately 4.37% of total provincial-government budgetary expenditure, with substantial variations across provinces.

Table 6: Judicial Reform and City/LGFV Characteristics

Dep Var	(1) $\frac{\text{NetIssue}}{\text{FisRev}}$	(2) MCB Yield	(3) log(Asset)	(4) borrowing rate	(5) $\frac{\text{Bond}}{\text{Asset}}$	(6) $\frac{\text{ResLand}}{\text{Pop}}$
Reform	-0.0403	-0.0478	0.122	0.153	0.00119	12.96
	(-1.057)	(-0.520)	(1.206)	(0.648)	(0.371)	(0.937)
Constant	0.199***	7.014***	4.405***	2.631***	0.0389***	189.5***
	(5.775)	(98.50)	(69.42)	(14.25)	(14.89)	(17.96)
Observations	266	264	1,760	1,042	1,740	312
R-squared	0.005	0.001	0.002	0.001	0.000	0.002

Note: This table shows the correlation between judicial reform status with the city's and LGFVs' characteristics in 2013. Robust t-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

conduct event study analysis and find that there is no significant difference in time trends between treated and control cities before the reform along all the outcome variables examined in this paper. This finding partially mitigates the concern that some persistent differences between treated and control cities are underlying the treatment effect that we find. Moreover, in Table 6, we regress all the important outcome variables measured in 2013 and to be examined in this section on cities' reform status until 2020. None of these variables are significantly correlated with the cities' reform status. This result ensures that the major driving forces for the reform do not stem from the fiscal sector.

5.2 Mechanism

In this section, we discuss channels through which the reform that reduces local court favoritism towards LGFVs could affect their financing and operation.

5.2.1 Lawsuit Losses

The first direct effect is to increase the LGFVs' lawsuit losses, either by increasing transfer from LGFVs to plaintiffs or decreasing transfer from defendants to LGFVs. We conduct a back-of-the-envelope calculation to gauge the magnitude of the increased lawsuit losses.

Specifically, the dollar value of the lawsuit losses per LGFV can be calculated using the

following equation:

Dollar value of lawsuit losses per LGFV

$= \Delta$ LGFVs' Win Rate $\times$ No. of lawsuits per LGFV $\times$ Average Disputed Amount

Recall that the win rate that we define in Section 3.2 is based on the split of court fees, which is roughly proportional to the split of the disputed amount. For example, if the LGFV's win rate decreases by 20%, it pays more or receives less of 20% of the disputed amount. Therefore, the dollar value of the lawsuit losses should equal the effect of the reform on the LGFV's win rate, which we estimate in Table 2, times the number of lawsuits and the average disputed amount.

As defendants, we calculate the dollar value of lawsuit losses per LGFV to be 9.03 million RMB (= 0.140 $\times$ 19.36 $\times$ 3.33 million RMB). Since the effect on LGFVs' win rate is larger for high-stakes than low-stakes cases, we calculate the lawsuit losses per LGFV of high-stakes cases to be 7.73 million RMB (= 0.268 $\times$ 6.22 $\times$ 4.64 million RMB) and of low-stakes cases to be 2.70 million RMB (= 0.084 $\times$ 13.14 $\times$ 2.45 million RMB). As local plaintiffs, we calculate the dollar value per LGFV to be 3.94 million RMB (= 0.078 $\times$ 7.18 $\times$ $ 7.03 million RMB). Therefore, the total dollar value of the lawsuit losses per LGFV due to the reform is 14.37 million RMB, which is about 0.18% of the LGFV's accumulated cash paid for goods, services, fixed assets, intangible and other long-term investment during 2014-2021. Recall that in Section 4.5, we find that the prices paid by LGFVs for manufacturing products will be slightly lower by about 0.09% after the reform, which is quantitatively smaller than the direct lawsuit losses.

However, the lawsuit losses must be smaller than the total dispute losses of LGFVs as many disputes do not reach the court and could be similarly affected by the reform. The most common lawsuits of LGFVs revolve around payment delay of LGFVs. In a typical construction project, the LGFV contracts with Firm A. Firm A may then subcontract part of the work to Firm B, who could further delegate part of its work to Firm C, and so on.

When the LGFV fails to make full payments in time, Firm A might sue the LGFV, or more commonly, Firm B or C might sue all the downstream firms, including the LGFV.[22] In this case, the disputed amount is part of the contracting value between Firm B or C with its direct downstream firm, which is a small part of the total disputed amount. In case no one sues others, the disputed amount is not recorded. The reform may also affect the negotiation over disputes outside the court by affecting the outside option value if the negotiation outside the court fails. Therefore, we expect the total dispute losses of LGFVs due to the reform to be much larger than 0.18% of its accumulated cash paid.

The increased losses over disputes must have some adverse impact on the LGFVs' ability to meet its debt obligations. We do not take a stance on how large or important this channel is. Below we highlight a different channel which we believe to be quantitatively more important.

5.2.2 Information Production of Courts

Information disclosure by the LGFVs has been quite limited. The LGFVs' debts are typically secured by illiquid land collaterals. The repayment of LGFVs' debts heavily relies on the financial support of local governments, whose financial positions are even more opaque. Court verdicts offer valuable information about the LGFVs' financial conditions.

In the data, a large fraction of the lawsuits with LGFVs as defendants revolve around payment delays by LGFVs. In general, payment delays can stem from two primary sources: liquidity constraint of the LGFVs and misconduct of the contractors. When the LGFVs delay payment due to its liquidity constraint, they can defend themselves with various excuses. For example, the project quality does not meet the contractual standards, auditing of the project's actual cost and workload (which determines the payment) is not finished, the subcontracting by the contractor is illegal, and the contractor has not provided enough documents (e.g., value-added tax invoices, legitimate proof of its cost) to process the

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[22]Legally, LGFV is accountable for payments to all firms falling within its liability to Firm A.

payment. In case the defense is not supported by the court, outside creditors observe the court decision and will perceive the LGFVs to be more likely to be liquidity constrained. The creditors will then respond by cutting lending, and difficulty in rolling over debt may in turn exacerbate the credit risk and increase default rates of LGFVs.

More rigorously, we can think of LGFVs as being of either good or bad type. The good type has enough endowment or financial support from the local governments to meet its obligations, while the bad type does not. The good type will only delay payment when the contractors misconduct, while the bad type always attempts to delay payment. Therefore, those that win the lawsuits are more likely to be of good type and investors are willing to extend credit, and those that lose are more likely to be of bad type and investors will respond by tightening lending. The reform decreases the LGFVs' win rate and reveals more bad types to the investors, leading to a reduction in overall credit. We formally show this argument with a model in Section C of the appendix.

To provide direct evidence on the information production role of the court, we examine whether, after losing a lawsuit around its payment delays, the LGFV is more likely to experience credit rating downgrading within the following one year. Importantly, such patterns only exist for lawsuits involving LGFVs' payment delays, as other types of lawsuits do not inform investors about the financial conditions of LGFVs.

To this end, we first select LGFV-year pairs such that the LGFV has at least one lawsuit case in that year featuring its payment delays and calculate $winrate_{ict}$, the average win rate of the LGFV i for all such cases in year t. We then estimate the following equation:

$$\text{Downgrading}_{ic,t+1} = \beta \cdot winrate_{ict} + \alpha_i + \theta_t + \epsilon_{ict}, \tag{6}$$

where $\text{Downgrading}_{ic,t+1}$ is a dummy that equals one if the LGFV i experienced credit rating downgrading in year $t+1$ and zero otherwise.

We first estimate Equation (6) using OLS estimation. As shown in Column (1) of Table 7, losing lawsuits featuring LGFV payment delays is significantly correlated with the

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probability of credit rating downgrading within the next year.

The OLS estimation, however, does not necessarily suggest a causal effect through in-formation production of the court because financial analysts could also obtain information about the LGFVs' credit risk from other sources. To address this concern, we conduct the 2SLS IV estimation by instrumenting $winrate_{ict}$ with the city's reform status, $reform_{ct}$. As long as information collection from other sources is not affected by the judicial reform, the IV estimator captures whether changes in win rates induced by the reform, holding other information sources constant, can affect the credit rating downgrading. Column (2) shows a significant and negative effect of the win rate on the probability of downgrading within the next year, providing strong support for the information production hypothesis.

To interpret the magnitude of the effect, we multiply the IV estimate with the effect of the reform on LGFVs' win rate, as reported in Column (1) of Table 2. We find that the reform increases the probability of rating downgrading by 2.38% ($= 0.171 \times 0.14$), which is economically important compared to the average downgrading probability of 2.1%.

The IV estimate is much larger than the OLS estimate. This is probably due to the spillover effect of other LGFVs in the same city. As all LGFVs in the same city are ultimately supported by the same local government, liquidity constraint of one LGFV would imply similar conditions of other LGFVs in the same city. The judicial reform status would capture the effect of information production about all LGFVs in the same city. [23]

To check if the negative effect of losing lawsuits on credit rating only exists for cases informative of government financial conditions and is not driven by the lawsuit losses per se, we also construct LGFV-year pairs such that there are no lawsuit cases featuring the LGFV's payment delays in that year and calculate $winrate_{ict}$ as the average win rate for all cases for the LGFV i in year t. As reported in Columns (3)-(4), we do not

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[23]Formally, suppose there are two LGFVs, $i \in \{1, 2\}$, in the same city, and $downgrading_1 = \beta_1 winrate_1 + \beta_2 winrate_2 + \epsilon$, $winrate_i = \gamma_i reform + \epsilon_i$ and $Cov(\epsilon, winrate_i) = Cov(\epsilon_i, reform) = 0$ for any $i \in \{1, 2\}$. Then:

$$\beta_1^{OLS} = \beta_1 + \beta_2 \frac{\gamma_2}{\gamma_1 + \sigma_1^2/(\gamma_1 \sigma_z^2)}, \quad \beta_1^{IV} = \beta_1 + \beta_2 \frac{\gamma_2}{\gamma_1}$$

Therefore, when $\beta_1 \beta_2 > 0$ and $\gamma_1 \gamma_2 > 0$, we have $|\beta_1^{IV}| > |\beta_2^{OLS}|$.

Table 7: Response of Credit Rating to LGFV's Win Rate

Cases with LGFV Payment Delays:	Yes	Yes	No	No
Spec:	OLS	IV	OLS	IV
Dep Var: Rating Downgrading	(1)	(2)	(3)	(4)
Win Rate	-0.016***	-0.171***	-0.004	0.003
	(-3.04)	(-2.37)	(-0.42)	(0.03)
		First Stage		First Stage
Reform		-0.140***		-0.160***
		(-7.43)		(-2.54)
F-statistics		14.15		2.57
Year FE	Yes	Yes	Yes	Yes
LGFV FE	Yes	Yes	Yes	Yes
Observations	6,687	6,972	8,63	1,265
Mean of Outcome	0.021	0.021	0.009	0.009

Notes: This table examines whether an LGFV is more likely to experience credit rating downgrading in the next year after losing lawsuits around its payment delays. Columns (1) and (2) focus on LGFVs with payment delay cases, while Columns (3) and (4) focus on LGFVs without payment delay cases. We report results of a two-way fixed effect model using both OLS and IV estimation with the judicial reform status as the instrumental variable. Standard errors are clustered at LGFV level. Robust t-statistics in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

find any significant effect on the LGFV's future credit rating after the LGFV loses in these non-informative cases. This result provides strong support for the information production hypothesis of court rulings, rather than that the lawsuit losses per se lead to future downgrading.

We conjecture that as the judicial centralization reform reveals the LGFVs' credit risk and increases their lawsuit losses, creditors will respond by cutting lending, and the difficulty in debt rollover will increase their default risks. We examine the LGFVs' default rates and debt capacity in the following sections.

5.3 LGFVs' Default on Debt

Although LGFVs have not defaulted on MCBs, they have done so on less standardized and more opaque debt obligations such as trust products. Compared with MCBs issued in the interbank market or traded on exchanges, these non-standardized (*feibiao* in Chinese)

debt securities are subject to less strict regulations and fewer information disclosure requirements. Hence, defaulting on *feibiao* debt securities is less costly for LGFVs than is defaulting on other types of securities. This selective default on *feibiao* debt securities by LGFVs has been widely reported in the news and indicated in LGFVs' announcements.[24]

By looking at the raw data, in 2023 there are 34 LGFV default events, among which 29 come from cities that have experienced the reform, suggesting significant correlation between the reform and LGFVs' default. Formally, we study the impact of the reform on LGFVs' default on these non-standardized *feibiao* debt securities by estimating the following DID specification:

$$Y_{ict} = \beta \cdot \text{Reform}_{ct} + \alpha_i + \theta_t + \varepsilon_{ict}, \tag{7}$$

where i denotes the LGFV, c denotes the city, and t denotes the year. We use two variables to capture LGFVs' default. The first is a dummy, default_{ict}, which equals one if the LGFV i has at least one default event in year t and zero otherwise. The second is defaultn_{ict}, the number of default events of the LGFV i in year t. As in the previous sections, we control for heterogeneous treatment effect following Sun and Abraham (2021).

Table 8 reports the results. In Column (1), the reform has significantly increased the LGFVs' default by 0.51%, which is economically important compared to the mean of 0.3% reported in Table 1. In Column (2) when we use the number of default events as the dependent variable, we find similar results. Overall, the significant and positive effect on LGFVs' default suggests an important adverse impact of the reform on LGFVs, which is consistent with our conjecture.

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[24]For instance, Zunyi Daoqiao, the largest LGFV in Zunyi city in the southwestern province of Guizhou in China, reorganized its bank loans by expanding its maturity to 20 years and reducing its loan interest to 3-4.5%. At the same time, Zunyi Daoqiao indicated that it would not default on its outstanding bonds in the open market. Zunyi Daoqiao's official announcement was made on ChinaBond on December 30, 2022. Another example is the bankruptcy cases filed by a trust company against two LGFVs in Guizhou in August 2023, which mentioned that these LGFVs delivered principal and interest payments to bonds but not to trust products. See the report here.

Table 8: Effect on LGFVs' Defaults

	(1)	(2)
Dep Var:	default	defaultn
Reform	0.00511**	0.00918**
	(2.237)	(2.408)
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	24,381	24,381
R-squared	0.2779	0.2175

Note: This table presents the city-level DID estimation results of the judicial reform's impact on LGFVs' default on *feibiao* debt obligations. The dependent variable $default$ is a dummy indicating whether the LGFV has defaulted on *feibiao* debt in that year, and $defaultn$ is the number of default events of the LGFV in that year. Standard errors are clustered by cities. Robust t-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.4 LGFVs' Debt Capacity

Issuance and Yield of MCBs. To study the effect on LGFVs' debt capacity, we start by analyzing the MCBs as there is more detailed information (such as yield) of bonds. We first aggregate the individual MCBs to obtain the city-level MCB outstanding balance at the end of each year since 2010. We then calculate the net MCB issuance, $NetIssue_{ct}$, as the change in the MCB balance from year $t-1$ to year t, scaled by city c's fiscal revenue in 2013, right before the earliest judicial reform year. We also calculate the city-year level average MCB yield, $AveYield_{c,t}$, using all MCBs issued by government units in city c and year t and weighted by the issuance amount of each bond.[25]

We then conduct the event study analysis with the following specification:

$$Y_{ct} = \sum_{\tau \neq -1} \beta_\tau \cdot \mathbf{1}_{t-T_c=\tau} \cdot Reform_{ct} + \alpha_c + \theta_t + \varepsilon_{c,t}, \tag{8}$$

where T_c is the reform year in the city c and $Reform_{ct}$ is a dummy that equals one if the

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[25]If the city governments did not issue any MCBs in year t, we first fill $AveYield_{ct}$ with previous non-missing values and then with future non-missing values. We end up with a balanced city panel dataset for 2011-2023.

city has experienced the judicial reform in year t and zero otherwise. The coefficient β_τ captures the effect of the judicial reform τ years away from the reform year. We follow Sun and Abraham (2021) to account for heterogeneous treatment effects.

Figure 4 plots the 95% confidence intervals of the β_τ estimates for NetIssue_{ct} and AveYield_{ct}. In Panel A, there is no significant difference in the change in net MCB issuance between the treated and control cities before the judicial reform. The treated and control cities begin to diverge three years after the reform. In the third year, net MCB issuance in the treated cities is significantly lower by more than 10%, and the magnitude of the effect increased to approximately 15% in the next three years. There is no evidence of a reversal at least six years after the reform.

Panel B reports the results for the average MCB yield. Similarly, the treated and control cities exhibit parallel trends before the reform. One year after the reform, the average MCB yield for the treated cities is significantly higher by 0.15%. The magnitude of the effect further increases to 0.25% and remained stable over the next four years.

The decline in net issuance and increase in yield suggest a decrease in investors' demand for MCBs after the judicial reform, consistent with our conjecture.

LGFVs' Balance Sheets. As shown in Table 1, bond financing accounts for about 8.1% of LGFVs' assets on average. Other creditors may be affected in the same way as bond creditors. Otherwise, LGFVs may substitute bond financing with other credit sources, leading to a smaller effect on LGFVs at the firm level.

In this section, we investigate the overall effect on LGFVs at the firm-level.[26] We start

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[26]We do not aggregate the firm-level information to the city level and conduct the analysis at the city level because we can only observe financial information for those bond-issuing LGFVs. The number of all LGFVs published by the CBRC is approximately four times the number of LGFVs in our sample, meaning that a large fraction of LGFVs do not issue bonds.
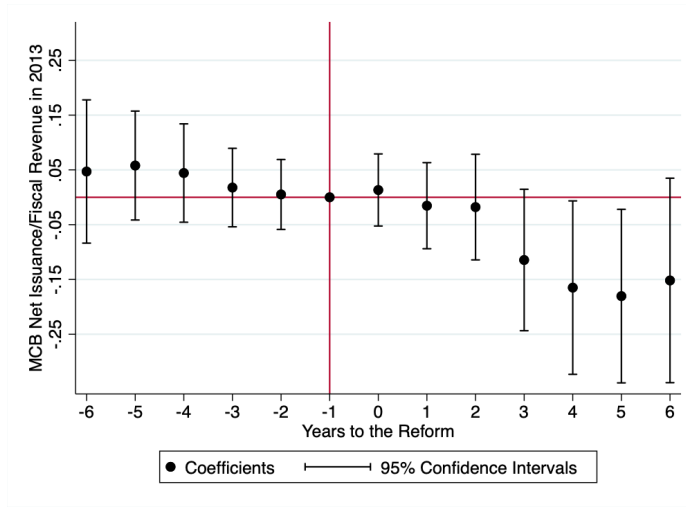
(a) Net Issuance/Budgetary Revenue
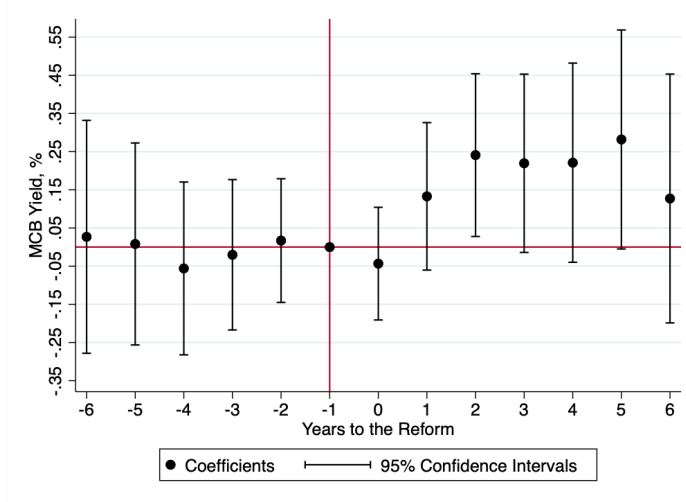
(b) Average Yield, %

Figure 4: MCB Issuance and Yield after the judicial reform

Note: This figure plots the 95% confidence interval of the effect of the judicial reform on the city-level MCB net issuance and yield over time. Standard errors are clustered by cities.

by looking at firms' asset size using the following event-study specification:

$$\log(\text{Asset}_{ict}) = \sum_{\tau \neq -1} \beta_\tau \cdot \mathbf{1}_{t - T_c = \tau} \cdot \text{Reform}_{ct} + \alpha_i + \theta_t + \varepsilon_{ict} \tag{9}$$

Figure 5 shows the 95% confidence intervals of the β_τ estimates. There is no significant difference in asset growth between treated and control LGFVs before the judicial reform.
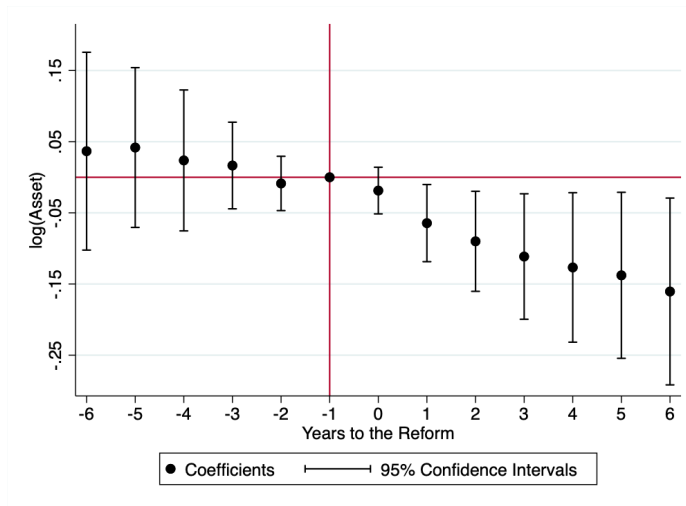
Figure 5: LGFV asset size after the judicial reform

Note: This figure plots the 95% confidence interval of the effect of the judicial reform on the LGFV's asset over time. Standard errors are clustered by cities.

After the judicial reform, the treated LGFVs start to experience significantly slower asset growth than those untreated LGFVs. The gap increases from approximately 5% in the first year to 15% in the sixth year after the reform.

We now look at the firms' balance sheet by estimating the DID specification in Equation (7) for various firm-level variables. Column (1) of Table 9 confirms that on average, the judicial reform reduced LGFVs' asset size by about 9.3%. Column (2) shows that the average borrowing rates also increased by about 0.32% after the reform. The decrease in asset growth and increase in borrowing rates suggest that at the firm level, LGFVs have suffered from higher borrowing costs and slower growth.

Moreover, the magnitude of the impact on asset growth and borrowing rates suggests that other creditors are affected in the same way as the bond investors. This is because bond financing accounts for only 8.1% of LGFVs' assets, and that the judicial reform reduces the net bond issuance (bond yields) by no more than 15% (0.25%) as shown in Figure 4. If other credit sources are not adversely affected, then we will not observe a decrease in asset growth by as large as 9.3% or an increase in borrowing rates by as

Table 9: Effect on LGFVs' Balance Sheet

	(1)	(2)	(3)	(4)	(5)
Dep Var:	log(Asset)	borrowing rate	Bond/Asset	leverage	AccPayable/COGS
Reform	-0.0934**	0.325**	-0.0116**	0.00981	0.0237**
	(-2.147)	(2.442)	(-2.376)	(1.029)	(2.319)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	27,967	21,692	27,884	27,884	27,627
R-squared	0.8664	0.6257	0.5833	0.7153	0.5193

Note: This table shows how the judicial reform has affected LGFVs' balance sheets, including total asset size, borrowing rate, bond financing, leverage, and trade credit. Standard errors are clustered by cities. Robust t-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

large as 0.32%. Note that our sample is restricted to bond-issuing LGFVs. The estimates suggest that LGFVs which have never issued any bonds must have also experienced similar negative impacts to those observed in our sample LGFVs.

In Table 9 we further examine different components of LGFVs' liabilities. In Column (3), we find that even when scaled by firms' asset size, there is still a statistically significant and negative effect on the use of bond financing. This suggests that bond financing is affected slightly more than other credit sources as a whole.

Column (5) of Table 9 shows that LGFVs use more trade credit after the reform. There are two explanations. First, unlike other creditors, contractors and suppliers are more willing to offer trade credit because if LGFVs attempt to default, they are more likely to recover the loss through lawsuits after the reform. Second, the greater use of trade credit may also reflect the substitution of bond and loan financing for trade credit.

5.5 Further Discussion

General Equilibrium Effect. In addition to affecting lawsuits involving LGFVs, one may be concerned that the judicial centralization reform has multiple effects on the local economy, some of which may be related to the financing of LGFVs or explain our findings. In particular, Liu et al. (2022) shows that alleviating court capture can increase investment

from external cities. First, more private investments should increase the demand for local infrastructure and public facilities, thereby increasing demand for services provided by LGFVs. This should predict more issuance of MCBs and higher growth in LGFV asset size, which is to the opposite of our findings. Second, a larger number of firm entries may increase the demand for credit and crowd out the credit supply to LGFVs. This may adversely affect LGFVs' bank loans but not likely their bond issuance because the bond market is highly integrated as most bond investors are national financial institutions. In general, alleviating court capture typically leads to economic advantages, which is unlikely to undermine LGFVs' borrowing capacity.

Responses of Contracting Prices. As alleviating local court capture not only increases LGFVs' lawsuit losses but also decreases their contracting prices, one natural question is why the decrease in contracting prices cannot offset the ex-post increase in lawsuit losses. In particular, without the information production channel of the court, would the LGFVs still be adversely hurt by the reform? We think the answer is yes for the following reasons.

First, entrepreneurs and creditors have different discount rates and degree of risk aversion. On the one hand, entrepreneurs have a higher discount rate than creditors such as bond investors and banks because the marginal borrowing rates of entrepreneurs must be much higher than the bond yield and LGFVs' loan interest rates. As a result, contractors and suppliers discount the future lawsuit gains by a greater amount and reduce the ex-ante contracting prices by less. On the other hand, bond investors choose to invest in bonds because they are more risk averse, and they may greatly disvalue the high risks of LGFVs after the judicial reform. Both of these two factors predict that a shift in future transfer from LGFVs toward contractors and suppliers induced by the reform cannot be offset by the response of ex-ante contracting prices.

Second, alleviating local court capture may have worsened moral hazard problems of contractors. Project contracting involves many details on the contractor side, such as the construction structure, materials to be used, the construction timeline, and whether certain

parts can be outsourced, whereas on the contractee side, only the rescheduling of payments needs to be specified. A greater action space on the contractor's side leads to more room for potential moral hazard problems, which is why disputes over project contracts are among the most common types of civil lawsuits. As the court cannot always make the contractors fully responsible for losses arising from their misconduct, alleviating court capture in favor of these contractors may then encourage more moral hazard problems on the contractor side, lower the net return of LGFVs' projects and thereby reduce their borrowing capacity.

To identify disputes involving contractor's moral hazard, we conduct searches in the case verdicts for keywords such as quality, illegal outsourcing, and project delay. During our sample period, we identify in about 40% of lawsuits against project contractors, the contractors exhibit behaviors featuring moral hazard problems. The empirical evidence supports increased contractor moral hazard after the reform. As shown in Figure A.4 of the Appendix, we find that among all cases with LGFVs as defendants, the share of cases involving counterparty moral hazard issues increases significantly after the reform.

5.6 Real Effect

Finally, we provide some evidence on the real impact of the reform through the LGFVs. The reform has multiple effects on the real economy through various channels as we discuss above. In this section, we focus on the activities of LGFVs which are directly linked to their financing and unlikely to be driven by the general equilibrium effect through other channels.

We first investigate how the judicial reform affects LGFVs' spending. We measure their spending with cash paid for goods, services and investment. We then estimate Equation (7) using the LGFVs' spending as the outcome variable.

Table 10 shows that following the reform, LGFVs' annual spending decreases significantly by about 22.2%. This effect is more pronounced for spending on goods and services

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Table 10: Effect on LGFVs' Spending

	All	Goods&Services	Investment
Dep Var: log(Cash Paid)	(1)	(2)	(3)
Reform	-0.222***	-0.229***	-0.122**
	(-3.574)	(-3.094)	(-2.051)
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	27,884	27,365	27,865
R-squared	0.7065	0.6407	0.6743

Note: This table shows how the judicial reform has affected LGFV-level spending measured with its annual cash paid for goods&services and investment. Standard errors are clustered by cities. Robust t-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

than for investment. Figure A.5 in the appendix presents results of the event study analysis, which shows parallel trends between treated and control LGFVs before the reform and a significantly negative and gradually increasing effect over time post-reform. This result implies that the judicial reform has either undermined local governments' capacity to offer public goods or curtailed inefficient excessive government investment, depending on the productivity of the marginal government investment during our sample period.

One of the most important roles played by LGFVs is as "land banks." LGFVs typically invest in producing land inventories, especially residential land inventories, for local governments to sell. Specifically, they will take either unoccupied or occupied land parcels (after compensation to incumbents), level the ground, and connect the land to main roads and services (such as drainage, water supply pipelines, electricity, gas, telecommunications, and the Internet) to prepare it for sale on the market. The production of land inventories is costly and LGFVs play an important role in transforming urban landscapes.

To study whether decreased spending affects the role of LGFVs as land banks, we use land auction data from the Ministry of Natural Resources and aggregate them at the city level to calculate the annual land supply and average land price (weighted by the land parcel size) for each year. We then estimate Equation (8) using the annual land supply per capita and land price scaled by GDP per capita as the dependent variables.
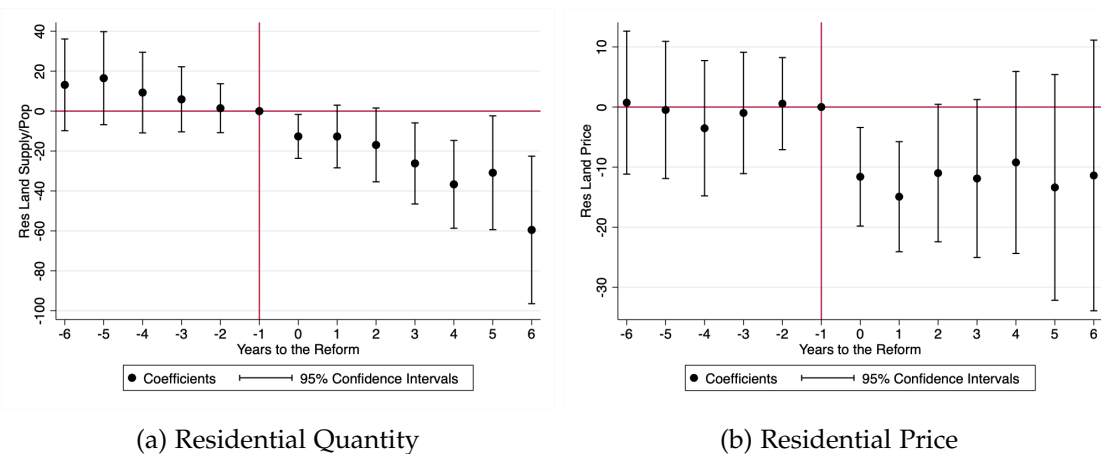
(a) Residential Quantity   (b) Residential Price

Figure 6: LGFVs' Debt Capacity and Residential Land Supply

Note: This figure plots the 95% confidence interval of the effect of the judicial reform on the city-level residential land supply per capita (square meters per 100 urban residents) and land price scaled by GDP per capita. Standard errors are clustered by cities.

Figure 6 present the event study results for residential land.[27] The judicial reform has gradually decreased the city's new residential land supply over time. Five years after the reform, the annual residential land supply decreased by 30 square meters per 100 urban residents, which is economically important compared to the mean of 147 square meters per 100 urban residents. Meanwhile, the average residential land prices also dropped significantly after the reform. Translating the coefficient estimates into dollar value, we find that the average residential land prices decrease by about 310 RMB per square meter after the reform, representing approximately a 10% decrease in the average prices.

The simultaneous reduction in quantity and price represents both a shift in the quantity of land supply and a shift in the quality of land parcels. That is, with reduced spending induced by the reform, LGFVs not only cut the production of land inventories but also reduce the amount of investment on facilities for each land parcel, which lowers of quality of land parcels. Accordingly, the local governments respond by both reducing land supply and accepting lower prices for transacted land parcels.

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[27]We present the results for commercial and industrial land in Section B of the Appendix. Consistent with the fact that the LGFVs' role is mainly in producing residential land inventories, we do not find significant impact on the supply of commercial and industrial land.

6 Conclusion

In this paper, we provide novel evidence on how local court capture at the grassroots level affects municipal financing and spending. In contrast to high-level courts with substantial power of judicial interpretation, courts at the grassroots-level must respect existing contract terms. Political influences over local courts are best modelled as affecting how local courts support local governments' claims and defense in scenarios not specified in the contract, which affects not only the local government lawsuit losses but also the information production of the court. That is, the court may help conceal the local government liquidity constraint by supporting their defense for payment delays. Under this conceptual framework, we provide comprehensive analysis about the effect of local court capture on municipal financing and spending. The analysis takes into account the heterogeneity of government counterparties, the ex-ante responses of contracting prices, information asymmetry, as well as real impacts on the local economy.

We find that the judicial centralization reform in China has reduced the borrowing and spending of local governments. The efficiency implication of this effect is, though, not clear. To the extent that local governments have strong incentive to over-spend (Xiong, 2018), the reform is likely to have put a harder constraint on local government borrowing and improved efficiency of government spending. In this sense, the reform has improved the role of market forces to discipline the government debt use behavior.

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Online Appendix

A Data

Figure A.1 presents the time trend for the number of court cases involving LGFVs as local plaintiffs (in black) and defendants (in blue) on the CJO website between 2014 and 2021.
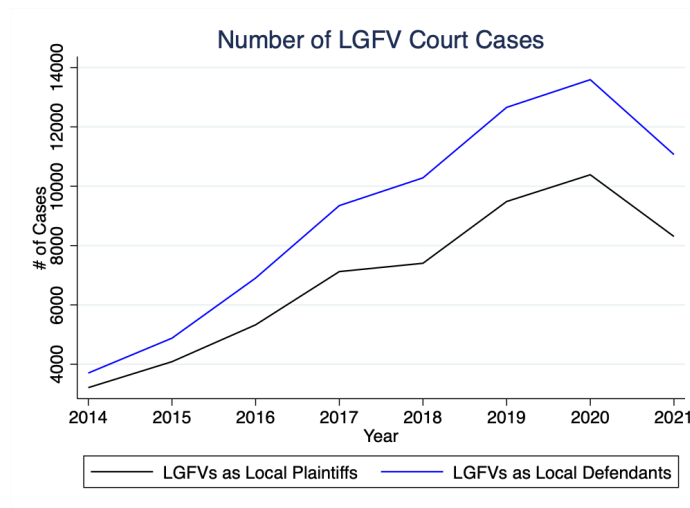

Figure A.1: Number of Court Cases Involving LGFVs Overtime

B Supplementary Empirical Results

B.1 LGFVs' Win Rates

Figure A.2 presents alternative event-study estimators for the effect of the reform on local LGFVs' win rates as defendants and local plaintiffs following the approach suggested by Borusyak et al. (2021).

Table A.1 ensures a consistent composition of cases for the intensive margin estimates shown in Table 3: conditional on cases initiated within six months prior to the implementation of the reform, the characteristics of plaintiffs and defendants are well balanced between those adjudicated before and after the reform.
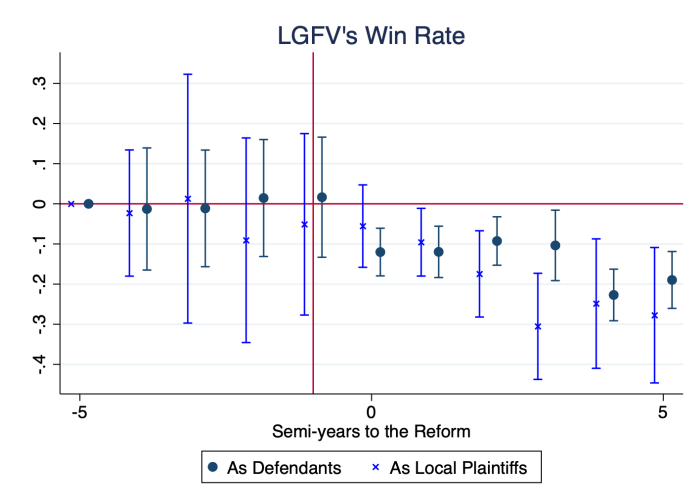
Figure A.2: Alternative Event Study Estimation

Note: In this figure, we plot the event study coefficients (and the corresponding 95% confidence intervals) for the baseline results in Columns (1) and (6) of Table 2 following the approach suggested by Borusyak et al. (2021).

Table A.1: Composition of Cases Received Rulings Before and After Reform

	Regis. Capital (Million CNY)		# of Employees		Age	
	Plaintiff	Defendant	Plaintiff	Defendant	Plaintiff	Defendant
	(1)	(2)	(3)	(4)	(5)	(6)
Ruling After Reform	-18.923	18.385	91.895	327.533	-5.574	-0.697
	(-0.499)	(0.093)	(0.311)	(0.578)	(1.637)	(0.528)
Court FE	Y	Y	Y	Y	Y	Y
Semi-year FE	Y	Y	Y	Y	Y	Y
Observations	426	1,554	467	1,789	480	1,798
R-Squared	0.754	0.757	0.677	0.678	0.723	0.695

Notes: Standard errors are clustered by cities. Robust t-statistics in parenthesis. * significant at 10% ** significant at 5% *** significant at 1%.

B.2 Potential Side Effects

In this section, we investigate other effects of the reform beyond the court decisions. In particular, we assess whether the reform has (a) led to prolonged delays in issuing rulings (Section B.2.1); or (b) diminished the rate of compliance with court orders (Section B.2.2).

B.2.1 Delays in Court Decisions?

Despite a notable decrease in favoritism toward local governments, the reform may have led to slower judicial decisions if judges encountered a trade-off between the quantity and quality of case handling. To explore this possibility, we estimate the changes in the duration of a case (number of days from filing to verdict) in response to the reform. As illustrated in Figure A.3, the duration of the trials involving LGFVs has not changed significantly. This finding suggests that local judges have managed to enhance the quality of judicial decisions without compromising quantity.
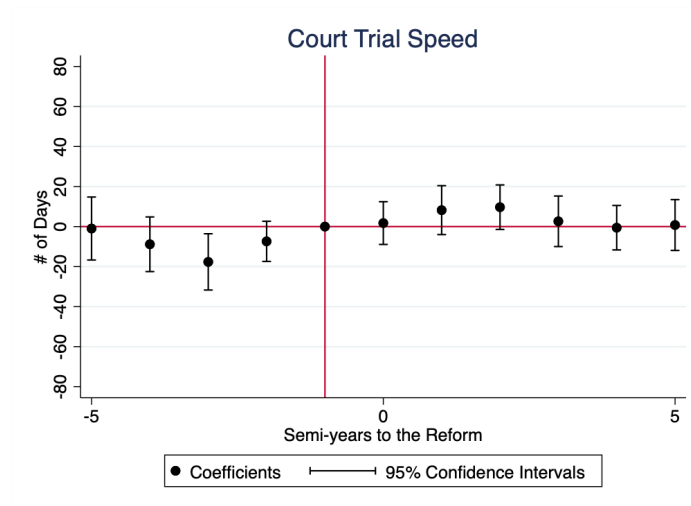

Figure A.3: Judicial Centralization Reform and Trial Speed

Note: In this figure, we estimate the event study specification (Eq. 2) using the number of days taken for each case from start to finish as the outcome variable. We plot the event study coefficients (and the corresponding 95% confidence intervals), respectively. All event studies are estimated following the approach suggested by Sun and Abraham (2021).

B.2.2 Weakened Enforcement of Court Orders?

Given the greater political distance between provincial governments and local law enforcement agencies, one concern is that the degree of enforcement of rulings against LGFV defendants may diminish. Should this occur, the significant reduction in the judicial favoritism toward LGFVs may not translate into meaningful effect on LGFVs. However,

our empirical analysis does not support this concern. We employ a unique dataset from *Credit China*, which records every instance of non-compliance with court orders and labels the non-compliant party as a "dishonest debtor subject to enforcement." By integrating these non-compliance data with all commercial lawsuits involving LGFVs in our dataset, we assess the quality of judicial enforcement before and after the reform. As indicated in Table A.2, the rate of non-compliance has remained statistically unchanged following the reform. Moreover, when we further categorize the outcome variable into "partial non-compliance" and "complete non-compliance," as classified by *Credit China*, the results still show no significant difference. These findings do not support the hypothesis of weakened enforcement.

Table A.2: Judicial Reform and Ruling Enforcement

	Non-compliance Rate	Complete Non-compliance	Partial Non-compliance
	(1)	(2)	(3)
Reform	-0.005	-0.006	0.006
	(-0.833)	(1.000)	(1.000)
Court FE	Y	Y	Y
Seimi-year FE	Y	Y	Y
Observations	53,893	53,893	53,893
R-Squared	0.170	0.167	0.167

Notes: Standard errors are clustered by cities. Robust t-statistics in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B.3 More Results on LGFVs' Default

Most LGFV default events happen in the recent years. As complementary evidence to the DID estimation results in Section 5.3, we conduct cross-sectional analysis in this section. We define the default ratio of LGFVs as the share of our sample LGFVs that default on non-standardized debt obligations during 2016-2023. The average LGFV default rates is 2.7%, with a standard deviation of 8.8%. Conditional on the cities with at least one LGFV default event, the average default ratio is 20.5%, with a standard deviation of 15%.

We then conduct the following cross-sectional regression analysis:

$$\text{Default}_c = \alpha + \beta \cdot \text{Reform}_c + \gamma \cdot X_c + \epsilon_c, \tag{10}$$

where Default_c is the number of LGFVs with feibiao debt defaults in city c divided by the total number of LGFVs in the city, and Reform_c is a dummy that equals one if a city has implemented the judicial reform by the end of 2020 and zero otherwise. The coefficient of interest is β, which captures the differences in LGFVs' default rates between cities with and without the judicial reform. Our city-level control variables include GDP per capita, population, and average LGFV leverage ($\text{leverage}_c = \frac{\Sigma_i \text{liability}_{ic}}{\Sigma_i \text{asset}_{ic}}$), all of which take the value in 2013 which is right before the reform.

Table A.3: Effect on LGFVs' Defaults

| | LGFV Default Rate, % | | | | | |
| | All cities | | | Cities with defaults | | |
	(1)	(2)	(3)	(4)	(5)	(6)
Reform	2.042**	1.961**	2.035**	9.000**	7.259**	7.242*
	(2.41)	(2.33)	(2.35)	(2.16)	(2.12)	(2.01)
GDP per capita, ln		-0.400	-0.352		-5.224**	-5.913**
		(-0.47)	(-0.32)		(-2.22)	(-2.10)
Population, ln		-0.198	-0.164		-11.163***	-11.863***
		(-0.23)	(-0.18)		(-8.84)	(-6.53)
Average LGFV leverage			-2.059			11.357
			(-0.37)			(0.52)
Constant	1.294**	3.062	3.715	13.519***	91.388***	91.698***
	(2.58)	(0.60)	(0.71)	(4.42)	(9.82)	(9.56)
Observations	310	302	295	41	39	39
R-squared	0.011	0.012	0.013	0.062	0.438	0.444

Note: This table presents the city-level cross-sectional regression results of the judicial reform's impact on LGFVs' default rate, i.e., the fraction of LGFVs with *feibiao* defaults between January 2017 and January 2024 in all LGFVs in a city. The explanatory variable, Reform, is a dummy that equals one if a city has implemented the judicial reform by 2020 and zero otherwise. We use the full sample of 310 cities in Columns (1)-(3) and the subsample with at least one LGFV default in Columns (4)-(6). Average LGFV leverage is calculated as $\text{leverage}_c = \frac{\Sigma_i \text{liability}_{ic}}{\Sigma_i \text{asset}_{ic}}$. We calculate robust standard errors and present corresponding t-statistics in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

As shown in Column (1) of Table A.3, we find the LGFVs' default rate is significantly higher in cities with the judicial reforms as compared to those without the reform by approximately 2.0%. The coefficient is economically important compared to the mean of 2.7%. The coefficient estimate is robust to various controls, such as GDP per capita, city population size, and, most importantly, the average leverage of LGFVs. In Columns (4)-(6), we restrict to cities with at least one LGFV default. The coefficients increase to 9.0% without controls and 7.2% with all the city-level controls.

B.4 Moral Hazard of Suppliers and Contractors

Figure A.4 presents the event study results of examining the changes in the share of cases related to moral hazard issues among all cases against LGFVs' suppliers and contractors before and after the reform. The analysis is at the court-semiyear level.
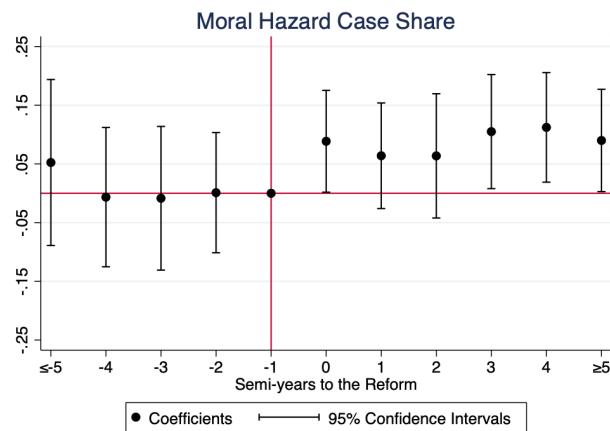

Figure A.4: Judicial Centralization Reform and Moral Hazard Cases

Note: This figure plots the event study coefficients and the corresponding 95% confidence intervals for the effect of the reform on the share of cases related to moral hazard problems of project contractors. Standard errors are clustered at the prefecture level.

B.5 More Results on the Real Effect

Figure A.5 presents the event study results for the effect of the reform on the LGFVs'
spending. Figure A.6 presents the event study results for the effect of the reform on
commercial and industrial land supply using Equation (8).
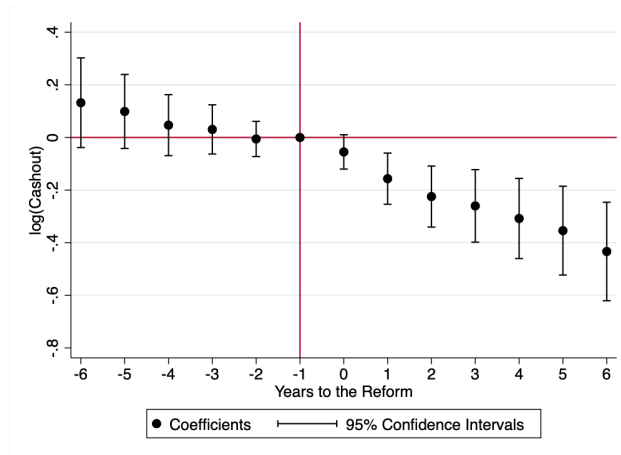
(a) All Cash Paid
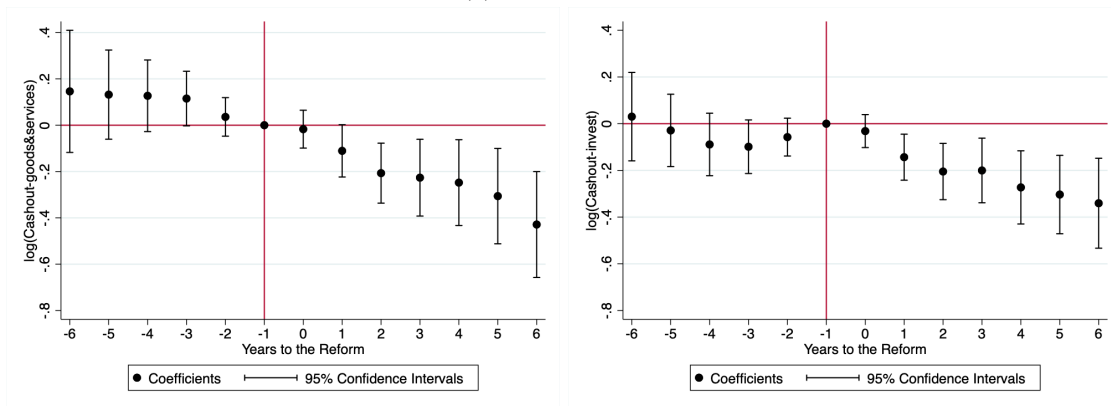
(b) Goods&Services

(c) Investment

Figure A.5: The Responses of LGFVs' Spending

Note: This figure plots the 95% confidence interval of the effect of the judicial reform on the LGFVs'
annual cash paid for goods and services, fixed asset, intangible asset and other long-term asset.
Standard errors are clustered by cities.

(a) Commercial Quantity

(b) Commercial Price

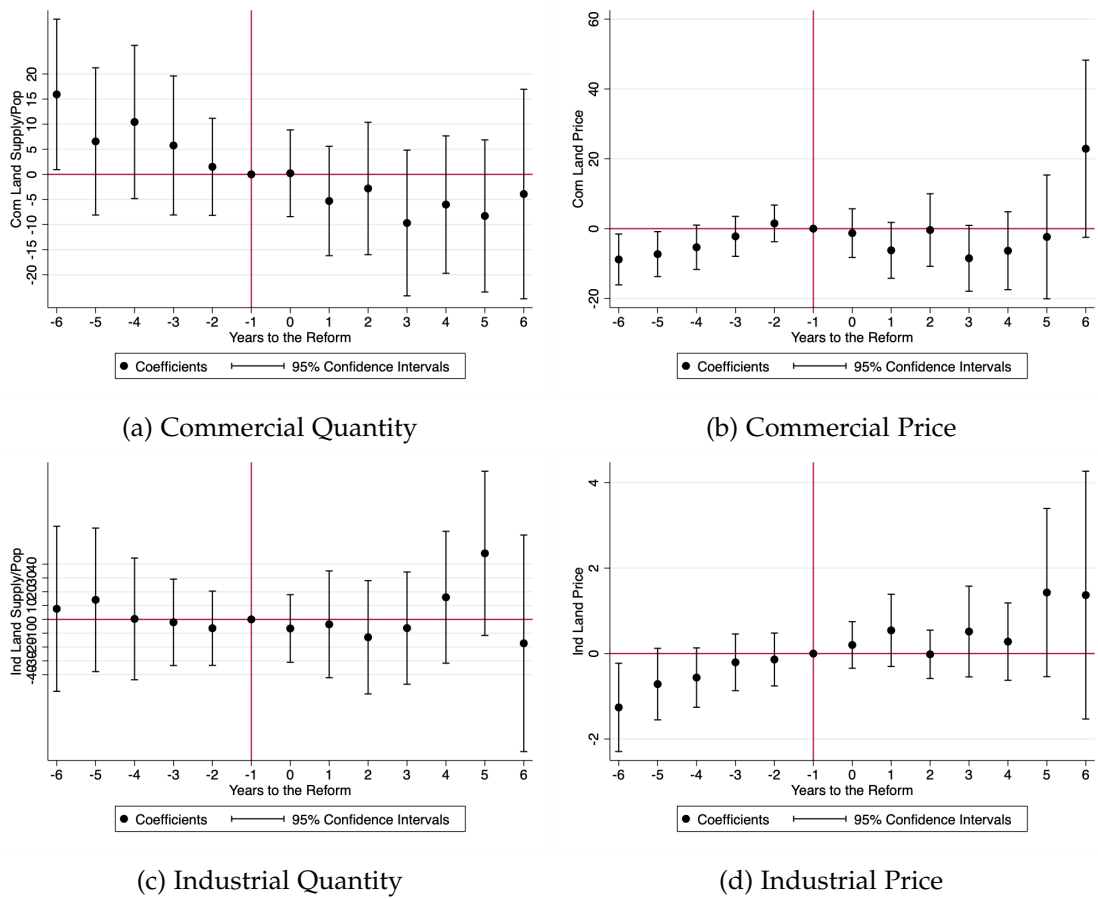(c) Industrial Quantity

(d) Industrial Price

Figure A.6: LGFVs' Debt Capacity and Land Supply

Note: This figure plots the 95% confidence interval of the effect of the judicial reform on the city-level commercial and industrial land supply per capita (square meters per 100 urban residents) and land price scaled by GDP per capita. Standard errors are clustered by cities.

C   Model

We formally show the information production role of the court in the following model. The key insight is that the delay of LGFVs' payment can be due to either the LGFVs' liquidity constraint or the contractors' misbehavior. The court's decision of supporting the contractors suggests the LGFVs are more likely to be liquidity constrained, and outside creditors respond by cutting lending to these LGFVs. In contract, LGFVs that are liquidity constrained but win the lawsuits are pooled with non-constrained LGFVs, and creditors are willing to extend credit given the average quality of this pool of LGFVs. After the

reform, the court pools fewer constrained with non-constrained LGFVs, resulting in a reduction in lending.

There are four periods: $t = 0, 1, 2, 3$. At $t = 0$, the LGFV signs a contract with one construction company (hereafter referred to as the contractor) for the construction of a public project. In the contract, the LGFV agrees to pay the contractor P at $t = 1$ when the project is finished.

There are two types of LGFVs: good and bad. The good (bad) type has W_g (W_b) available at $t = 1$ and $t = 3$. The type is the LGFVs' private information and the share of bad type is γ. We assume that $W_g > P > W_b$. As a result, at $t = 1$, the bad type always wants to delay the payment as it does not have enough money to pay the contractor. The good type can choose whether or not to delay the payment, which we will model below.

With payment delay, the LGFV and the contractor will enter a lawsuit which costs both of them k to be paid at $t = 2$. The court will then look for misbehavior of the contractor to justify the payment delay by the LGFV. Specifically, denote the degree of effort that the contractor has put in the project by $e \geqslant 0$ and its accumulative density function by $F(e)$. Denote the expected repair cost as a function of e to be paid at $t = 2$ by $v(e)$, with $v'(e) < 0$. That is, lower contractor effort causes more damage that costs v to repair. The court will decide who shall be responsible for the repair cost. Assume the court follows a threshold rule. If $e \geqslant \bar{e}$, the court decides that the contractor has put in enough effort and the LGFV shall bear the cost of $v(e)$. If $e < \bar{e}$, the contractor shall bear the cost of $v(e)$. The unconditional probability of the LGFV to win is $F(\bar{e})$. The threshold of $\bar{e}$ captures the court favoritism towards the LGFV, with higher $\bar{e}$ representing more favoritism. In addition, the LGFV also needs to pay the contractor PR where R is the interest rate, and it also earns interest of R on its saving from $t = 1$ to $t = 2$.

The good type can decide whether or not to delay the payment and enter the lawsuit. The benefit of entering the lawsuit is to make the contractor pay for $v(e)$ if the LGFV wins the lawsuit. The cost is the fixed lawsuit cost k, and in case the LGFV loses, outside

creditors will update belief about the its type and cut lending. We assume that the LGFV can observe a low signal ℓ with probability ρ and a high signal h with probability $1 - \rho$ about e, with $F(e|\ell) > F(e) > F(e|h)$ for any $e > 0$. Under some parameter assumptions, the LGFV of good type will only delay payment when receiving a low signal about e.

At $t = 2$, the LGFV has another investment opportunity with fixed cost of I. It also gets a chance to borrow against its endowment at $t = 3$. The outside creditors will update belief about the LGFV's type, after observing whether it has entered the lawsuit, and whether it wins or loses in the lawsuit. The probability of being a good type conditional on winning and losing the lawsuit is:

$$Pr(g|w) = \frac{(1-\gamma)\rho F(\bar{e}|\ell)}{\gamma F(\bar{e}) + (1-\gamma)\rho F(\bar{e}|\ell)} \tag{11}$$

$$Pr(g|l) = \frac{(1-\gamma)\rho(1 - F(\bar{e}|\ell))}{\gamma(1 - F(\bar{e})) + (1-\gamma)\rho(1 - F(\bar{e}|\ell))} \tag{12}$$

Equation (11) and (12) illustrate the information production role of the court. Due to the selection of good type that enter the lawsuit as well as the differential win rate of the good and bad type (i.e., $F(\bar{e}|\ell)) > F(\bar{e})$), the probability of being a bad type conditional on losing the lawsuit is very high. We assume that the average quality of the LGFVs that lose the lawsuit is sufficiently low enough that the creditors cannot break even if lending to them to finance the new project.

Formally, we make the following parameter assumptions. Denote the discount rate of the creditors by by R_d.

Assumption 1. *For $e \in \Psi$, assume the following conditions hold.*

- *Conditional on winning the lawsuit, the LGFV is able to borrow enough to pay the contractor and make the investment of I.*

$$PR - (Pr(g|w) \cdot W_g + Pr(b|w) \cdot W_b) + k + I < \frac{1}{R_d}(Pr(g|w) \cdot W_g + Pr(b|w) \cdot W_b)$$

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- *Conditional on losing the lawsuit, the LGFV cannot raise enough money to pay the contractor and make the investment of* I.

$$\mathrm{PR} - (\mathrm{Pr}(g|l) \cdot W_g + \mathrm{Pr}(b|l) \cdot W_b) + k + I + \min\{\nu(e)\} > \frac{1}{R_d}(\mathrm{Pr}(g|l) \cdot W_g + \mathrm{Pr}(b|l) \cdot W_b)$$

- *The good type will only delay payment when receiving a low signal about* e. *Denote the utility from being able to make the investment* I *at* t = 2 *by* Π, *then*

$$k < F(\bar{e}|\ell) \cdot E[\nu(e)|e < \bar{e}, \ell] - (1 - F(\bar{e}|\ell))\Pi$$

$$k > F(\bar{e}|h) \cdot E[\nu(e)|e < \bar{e}, h] - (1 - F(\bar{e}|h))\Pi$$

Now, consider the average funding shortage of the LGFV that shall be financed by borrowing at t = 2. First, all but those that lose the lawsuits will make the investment of I, which is $I \cdot (1 - \gamma(1 - F(\bar{e})) - (1 - \gamma)\rho(1 - F(\bar{e}|\ell)))$. Second, if the contractor expects to get $\bar{P}$, which should equal the contract price minus the expected the lawsuit and repair cost, the LGFV should then pay for the total expected cost, which is $2k \cdot (1 - (1 - \gamma)(1 - \rho)) + R\bar{P} + RE[\nu(e)]$. Third, the average endowment of the LGFV at t = 1 is $R((1 - \gamma)W_g + \gamma W_b)$. In total, the borrowing at t = 2 is then:

$$\begin{aligned} D_2(\bar{e}) = & I \cdot \big(1 - \gamma(1 - F(\bar{e})) - (1 - \gamma)\rho(1 - F(\bar{e}|\ell))\big) + 2k \cdot \big(1 - (1 - \gamma)(1 - \rho)\big) + \\ & R\bar{P} + RE[\nu(e)] - R\big((1 - \gamma)W_g + \gamma W_b\big) \end{aligned}$$

It is then straightforward to see that $\frac{\mathrm{d}D_2}{\mathrm{d}\bar{e}} > 0$. After the judicial centralization reform, the court reduces favoritism towards the LGFV, which can be captured by the decrease of $\bar{e}$. The model then predicts the decrease of D_2.

Proposition 1. *With Assumption 1, $D_2'(\bar{e}) > 0$ for $\bar{e} \in \Psi$.*