

Bankruptcy Court Establishment and Corporate Risk-Taking

Yue Zhang^a and Kai Wu^{*a}

^a*Central University of Finance and Economics*

August 2023[†]

Abstract

This study examines the influence of bankruptcy courts on the risk-taking behavior of listed firms in China between 2002 and 2019. The establishment of bankruptcy courts discourages listed firms from taking excessive risk. This effect is more pronounced in firms with financing constraints, high market valuations, and those operating in regions with a weaker rule of law. Overall, our findings indicate that establishing bankruptcy courts benefits creditors' rights and restrains corporate risk-taking.

JEL Classification: G31, G32, G33

Keywords: bankruptcy court, judicial practice, risk-taking

*Corresponding author. Email: wukai8759@cufe.edu.cn

[†]Kai Wu acknowledges financial support from the National Natural Science Foundation (No. 72103217). All remaining errors are our own.

1 Introduction

In China, Bankruptcy liquidation is advantageous in clarifying the debts and claims of bankrupt enterprises and minimizing creditor losses. 83% of Chinese bankruptcy cases are subject to liquidation, and most insolvency proceedings are initiated by unsecured creditors.(Li and Ponticelli, 2022) Moreover, a bankruptcy system encourages entrepreneurs to become more aware of the risk and to manage their firms more effectively, ultimately improving their economic benefits.

On June 1, 2007, the Chinese government enacted the Enterprise Bank Rupture Law. However, the introduction of the Bankruptcy Law in the judicial system did not go as planned. A survey of The judicial status of bankruptcy law revealed that three years after the law was implemented, the number of firms leaving the market had increased, yet the number of bankruptcy cases filed had decreased (Li and Wang, 2011). This problem was attributed to various causes, such as local government interference, an inadequate judiciary system, and costly bankruptcy costs for firms (Li, 2019). Against this background, the government has begun establishing bankruptcy courts, promoting the efficiency of bankruptcy liquidation, and advancing the legal process of market withdrawal. Consequently, the number of bankruptcy courts in municipalities increased rapidly after 2014 ¹.

Prior to the establishment of bankruptcy courts, bankruptcies were adjudicated in local civil courts, which could be inefficient and subject to local interference (Henderson, 2007; Li and Rao, 2022). Academics and the World Bank have noted that the bankruptcy process for Chinese companies is 50 percent longer than in the United States (Li and Ponticelli,

¹We added a graph A1 showing the number of bankruptcy courts established each year and provided a list of the prefecture-level cities where the bankruptcy courts were established A2.

2022). The 2007 insolvency law aimed to expedite the insolvency process and increase creditor recovery from non-viable companies, yet this situation clearly does not align with that objective. Two primary factors lead to delays in insolvency proceedings in civil courts: judges who lack the professional and relevant training to handle bankruptcy cases, and local officials who tend to protect financially troubled companies from bankruptcy Fan, Huang, and Zhu (2013). To ensure a more reliable and expedient process, bankruptcy courts are now presided over by newly appointed judges. Many of these judges possess the specialized training necessary to handle bankruptcy cases. This limits local government intervention to some degree. Compared to ordinary civil courts, bankruptcy courts have achieved a 36% reduction in the duration of cases heard (Li and Ponticelli, 2022).

The establishment of bankruptcy courts significantly influenced local firms. They may beneficially liquidate bankrupt businesses to protect creditors, thus removing control from the owners' hands (Castro Martins, 2020). Hence, the existence of bankruptcy courts has perceptibly altered the management awareness of business owners. Furthermore, the establishment of bankruptcy courts has significantly transformed the business environment, including the accessibility of corporate capital (Singh, Chauhan, and Jadiyappa, 2023).

This study investigates the effect of establishing bankruptcy courts on corporate risk-taking. We employ data from listed firms in China from 2002 to 2019 and demonstrate that establishing a bankruptcy court decreases corporate risk-taking, particularly in firms with financing constraints and high market valuation and those located in regions with a weaker rule of law.

Our study contributes to the existing literature in three ways. First, it is closely related to the government's evaluation of the effectiveness of judicial practices. Previous literature

focused on the impact of bankruptcy courts on the structure of corporate assets (Li and Rao, 2022), whereas our research broadens the impact of bankruptcy courts on enterprises. Second, in previous research, liquidation was considered inefficient, and we studied the impact of high-efficiency liquidation (Acharya, Amihud, and Litov, 2011; Singh, Chauhan, and Jadiyappa, 2022; Vig, 2013). Finally, unlike previous research revealing that bankruptcy law reforms in India have effectively established the balance between creditor and debtor rights (Singh, Chauhan, and Jadiyappa, 2022), our study focuses on bankruptcy courts that strengthen creditors' rights.²

2 Related Literature and Hypothesis Development

Efficient bankruptcy courts reduce the probability of corporate default and capital shortages (Camacho-Miñano, Pascual-Ezama, and Urquía-Grande, 2013), thus promoting economic vitality (Chemin, 2012). In terms of corporate capital structure, bankruptcy courts can help promote the reduction of the corporate debt ratio and achieve the goal of deleveraging (Li and Rao, 2022). Furthermore, enhanced legal protection for creditors prompted by bankruptcy reform reduces corporate financing costs and improves the capital structure (Wang and Xue, 2022; Rodano, Serrano-Velarde, and Tarantino, 2016).

According to a previous study, the perception that avoiding financial distress is impossible

²Specifically, there are several reasons why an analysis focused on China would be a meaningful contribution. First, China's economy and capital markets have unique features, such as high state intervention, relationship-based financing, and political concerns, that may lead to different outcomes compared to other markets on which most prior literature focuses (Li and Ponticelli, 2022). Second, the staggered adoption of specialized bankruptcy courts across China provides an interesting quasi-natural experiment to study the effects of legal institutions on firm behavior. Third, the scale and growth of China's economy mean these bankruptcy system impacts have major aggregate implications for resource allocation and economic development. Lastly, China's bankruptcy system is still developing, and studying this context can provide insights useful for further reforms.

is negatively associated with the willingness to invest in projects, leading to underinvestment. (Myers, 1977). Simultaneously, shareholders are more motivated to invest in high-risk projects to shift the risk (Jensen and Meckling, 1976). However, this willingness to assume risk is detrimental to creditors.

Studies have drawn different conclusions regarding its impact on corporate risk-taking. Some studies show that effective bankruptcy laws encourage financially distressed firms to maximize their value, motivating shareholders to make high-risk investments to avoid or delay liquidation (Hart, 2000; Bose, Filomeni, and Mallick, 2021; Singh, Chauhan, and Jادیappa, 2022). In contrast, strengthening the creditors' rights will effectively curb the risk-taking that harms the interests of the creditors mentioned above (Acharya, Amihud, and Litov, 2011), reducing their investment behavior (Favara et al., 2017). Considering the establishment of bankruptcy courts in China was intended to expedite the liquidation process, thus enhancing the rights of creditors, our main hypothesis is that the establishment of bankruptcy courts leads to a decrease in corporate.

3 Data and Methodology

3.1 Data and Sample

This study draws data from various sources. First, we manually collected data on the establishment of bankruptcy courts from The People's Court's official website, local government documents, and related news sources.³ The financial data on listed firms in China were obtained from the CSMAR and WIND databases.

Our initial sample begins with all the listed firms in China from 2002 to 2019. For

³In order to ensure data quality, we conduct cross-validation on the information obtained from the above three channels. When there is a conflict among the data, it is selected according to the priority of the official website of the People's Court, government documents, and news reports.

convention, we exclude firms in the finance industry and those designated as special treatment or particular transfers. During our sample process, we remove 5,306 firm-year observations for firms with missing values for the key variables of interest. The final sample comprised 30,906 firm-year observations of 2,889 firms in 232 cities.⁴ To avoid the impact of extreme values on the primary findings, we winsorized all continuous variables at the 1st and 99th percentiles.

3.2 Empirical Design

Since bankruptcy courts have been established at various times and locations, we used a staggered difference-in-difference model to assess this quasi-natural experiment. This equation is formulated as follows:

$$Risk_{i,t} = \alpha_0 + \beta BC_{i,t} + \gamma X_{i,t} + \theta_i + \eta_t + \mu_{i,t}, \quad (1)$$

where i denotes firm and t denotes year, θ_i and η_t represent the firm and year fixed effects, respectively. Standard errors are clustered at the city level.

We selected corporate risk-taking as a dependent variable. Because higher risk-taking implies increased uncertainty about future cash flows, earnings volatility is widely used to determine the degree of risk-taking (John, Litov, and Yeung, 2008). In this study, we adjust the annual return on assets (ROA) of the enterprise based on the industry average⁵, subsequently using a three-year window as an observation period to compute the rolling standard deviation of the ROA (Faccio, Marchica, and Mura, 2011). The calculation employs

⁴For a comprehensive overview of the filtering procedure, please refer to Table A1.

⁵The industrial classification refers to the Industry Classification Standard of the CSRC in 2012, using the secondary industry classification for the manufacturing industry, and the primary classification for others.

the following equation:

$$Risk_{i,t} = \sqrt{\frac{1}{N-1} \sum_{n=1}^N (ADJ.ROA_{i,n} - \frac{1}{N} \sum_{n=1}^N ADJ.ROA_{i,n})^2} | N = 3 \quad (2)$$

$$ADJ.ROA_{in} = \frac{EBITDA_{in}}{ASSET_{in}} - \frac{1}{X_n} \sum_{k=1}^X \frac{EBITDA_{kn}}{ASSET_{kn}}, \quad (3)$$

where the bankruptcy court indicator BC is a dummy variable that equals one if the city where the firm locates has established the bankruptcy court and zero otherwise. In China, bankruptcy cases are filed under the jurisdiction of the debtor's registration location. In China's financial system, listed firms mainly access external financing from financial institutions, such as banks. Local and foreign financial institutions can sue through the bankruptcy courts where listed firms are located. In subsequent robustness tests, we attempted to modify the definitions of the explanatory and dependent variables.⁶

We perform a series of robustness checks to validate the accuracy of our findings. First, we adopted another definition determining when a bankruptcy court is established. If a bankruptcy court was established before June of a given year, it was deemed to have been established in that year. This new variable was named $BC2$. We also used alternative measures of risk-taking behavior as a dependent variable. We extended the observation period to compute profit fluctuations to five years, facilitating rolling calculations. **In addition, We use stock volatility $RISK3$ as a proxy to measure corporate risk-taking.** Second, we used propensity score matching to rematch the samples to address the self-selection bias generated in the regression. Third, we used a sampling criterion to reduce potential bias caused by sample composition. We excluded four directly controlled municipalities from the sample because of their superior levels of judicial and business development.

⁶For further information on control variables, please refer to Table A3 for their definitions.

3.3 Summary Statistics

Table 1 presents the descriptive statistics of the principal study variables. This table reveals a marked disparity in the level of risk-taking among businesses, as indicated by the dependent variable. Furthermore, regarding the control variables, considerable variations were observed in financial and internal management indicators among enterprises, highlighting the heterogeneity of firms across industries and regions.

(Insert Table 1 about here)

Table 2 presents the correlation among the observations. Most variables showed significant correlations.

(Insert Table 2 about here)

4 Empirical Results

4.1 Baseline Regression

Table 3 represents the outcomes of the baseline regression. By implementing 1, we evaluate the influence of the establishment of bankrupt courts on corporate risk-taking. Column (2) shows the result of adding firms' financial control variables, and Column (3) shows the result of adding firms' internal management control variables based on Column (2). Column (4) adds *INSTHOLD* to measure the impact of external supervision on corporate risk-taking. After gradually adding the control variables, the coefficients of *BC* remained negative and statistically significant at the 1% level. The regression analysis findings suggest

that establishing bankruptcy courts mitigates the level of risk adopted, thereby encouraging more conservative investment strategies in enterprises and supporting our hypotheses.⁷

Regression analysis of the control variables reveals that the scale of firm assets is negatively correlated with corporate risk-taking. Boosting cash reserves and the asset-liability ratio can considerably increase the risk-taking level of listed firms (Acharya, Almeida, and Campello, 2007; Denis and Sibilkov, 2010; Fresard, 2010).

(Insert Table 3 about here)

Table 4 represents shows the results of a series of robustness checks. Columns (1),(2) and (3) in Table 4 show that the establishment of bankruptcy courts still significantly reduces corporate risk-taking in the alternative variable definitions. However, there is an evident change in the coefficient in Column (2). Column (4) reports the results after eliminating unmatched samples and performing a regression. It can be found that the results are still significant. Column (5) of Table 4 shows that excluding these observations produces quantitatively similar results.

(Insert Table 4 about here)

4.2 Cross-sectional Heterogeneity

We conducted a heterogeneity analysis based on firm and regional characteristics using the annual median of the KZ Index, Tobin’s Q, and the level of local rule of law.

The KZ index measures a firm’s financing constraint function (Kaplan and Zingales, 1997). The higher the KZ index, the stronger the financing constraints faced by the listed

⁷The results continue to hold when standard errors are clustered at the firm level. Furthermore, we included corporate management characteristics, such as the number of female executives, the degree of separation, and the corporate ownership, in our baseline regression. The results remained robust.

firm and the more difficult it is to obtain the funds needed for operations. Constrained by financing, firms are often forced to engage in high-risk investments for various reasons (Whited, 1992). A dearth of steady funding sources often encourages these firms to explore alternative but risky investment options to foster their growth or sustainability. In addition, the potential for higher returns is often synonymous with higher risks (Chen, 2003).

From our perspective, the market valuation of enterprises has a profound effect on their investment and financing behavior, ultimately resulting in the establishment of bankruptcy courts having varying effects on firms. We used Tobin's Q to distinguish market valuations. High-Q firms are typically more innovative and growth-oriented and may be more likely to take on risky projects without a bankruptcy court (Ambad and Wahab, 2016). Furthermore, high-Q firms are more susceptible to potential losses in bankruptcy, thus incentivizing them to be more cautious in their risk-taking activities when a bankruptcy court is in place (Ji, Shi, and Zhang, 2022).

Moreover, the role of bankruptcy courts in reducing the level of corporate risk-taking may also depend on the level of the local rule of law, which is defined as the number of closed cases over accepted cases. One study revealed that firms in countries with more efficient bankruptcy procedures are less likely to engage in excessive risk-taking. This is because efficient bankruptcy procedures increase creditors' chances of recovering their investments if the firm enters bankruptcy, thus discouraging firms from taking unnecessary risks (Davydenko and Franks, 2008). Meanwhile, as suggested by Acharya, Amihud, and Litov (2011), firms in regions with weaker rules of law might be more prone to risk-taking due to less stringent regulatory oversight and weaker enforcement of corporate governance norms. Establishing a bankruptcy court in such regions could provide a stronger institutional

framework for dealing with corporate insolvency, discouraging excessive risk-taking.

Table 5 presents the results of the heterogeneity analysis, which examines how the relationship between bankruptcy court establishments and corporate risk-taking varies in different contexts. All three groups of results have passed the intergroup difference test. Column (2) shows that the coefficient of BC in the sample of firms with financial constraints is significantly negative, suggesting that the link between bankruptcy court establishment and corporate risk-taking is more pronounced in firms with greater financing constraints. Columns (3) and (4) show that the coefficient of BC is statistically significant at the 1% level for samples with a high firm value. However, this is insignificant for samples with low Tobin's Q values. Columns (5) and (6) report that the coefficient of BC is significant only in the sample of firms in regions with a weaker rule of law, highlighting the importance of the regional rule of law in shaping the impact of bankruptcy courts on corporate risk-taking.

(Insert Table 5 about here)

4.3 Discussion

Compared with the results of India's bankruptcy law reform on corporate risk-taking (Singh, Chauhan, and Jadiyappa, 2022), the establishment of China's bankruptcy court significantly reduced corporate risk-taking behaviors. We speculate that there may be a fundamental difference in the direction of these two measures. India's bankruptcy law reform focuses on providing solutions for firms deeply mired in bankruptcy, such as corporate restructuring, to avoid entering inefficient bankruptcy liquidation procedures, mainly considering the balance between creditor and debtor rights. The purpose of establishing bankruptcy courts in China is to improve the efficiency of bankruptcy liquidation

and protect the rights and interests of creditors. However, concerning the protection of creditors' interests, the establishment of China's bankruptcy court and Brazil's bankruptcy law reform have had similar impacts on corporate risk-taking ([Castro Martins, 2020](#)).

5 Conclusion

The staggered difference-in-difference model results suggest that the establishment of bankruptcy courts is associated with a decrease in corporate risk-taking. Our empirical findings remained quantitatively similar after robustness checks, including alternative variable definitions and sampling criteria.

Despite its merits, our study had certain limitations. Future research should incorporate the investigation of corporate investment and R&D behavior to study the impact of decreased risk-bearing by corporations resulting from the establishment of bankruptcy courts on corporate management.

In summary, our findings demonstrate that bankruptcy courts are favorable to creditor rights. Moreover, it helps to avoid excessive investment by firms and enhances financial stability in the corporate sector.

References

- Acharya, V. V., Almeida, H., Campello, M., 2007. Is cash negative debt? a hedging perspective on corporate financial policies. *Journal of Financial Intermediation* 16, 515–554.
- Acharya, V. V., Amihud, Y., Litov, L., 2011. Creditor rights and corporate risk-taking. *Journal of Financial Economics* 102, 150–166.
- Ambad, S. N. A., Wahab, K. A., 2016. The relationship between corporate entrepreneurship and firm performance: evidence from malaysian large companies. *International Journal of Business and Society* .
- Bose, U., Filomeni, S., Mallick, S., 2021. Does bankruptcy law improve the fate of distressed firms? the role of credit channels. *Journal of Corporate Finance* 68, 101836.
- Camacho-Miñano, M.-d.-M., Pascual-Ezama, D., Urquía-Grande, E., 2013. On the efficiency of bankruptcy law: Empirical evidence in Spain. *International Insolvency Review* 22, 171–187.
- Castro Martins, H., 2020. The brazilian bankruptcy law reform, corporate ownership concentration, and risk-taking. *Managerial and Decision Economics* 41, 562–573.
- Chemin, M., 2012. Does court speed shape economic activity? evidence from a court reform in india. *The Journal of Law Economics, & Organization* 28, 460–485.
- Chen, M.-H., 2003. Risk and return: Capm and ccapm. *The Quarterly Review of Economics and Finance* 43, 369–393.
- Davydenko, S. A., Franks, J. R., 2008. Do bankruptcy codes matter? a study of defaults in france germany, and the uk. *The Journal of Finance* 63, 565–608.
- Denis, D. J., Sibilkov, V., 2010. Financial constraints, investment, and the value of cash holdings. *The Review of Financial Studies* 23, 247–269.
- Faccio, M., Marchica, M.-T., Mura, R., 2011. Large shareholder diversification and corporate risk-taking. *The Review of Financial Studies* 24, 3601–3641.
- Fan, J. P., Huang, J., Zhu, N., 2013. Institutions, ownership structures, and distress resolution in china. *Journal of Corporate Finance* 23, 71–87.
- Favara, G., Morellec, E., Schroth, E., Valtà, P., 2017. Debt enforcement, investment, and risk taking across countries. *Journal of Financial Economics* 123, 22–41.
- Fresard, L., 2010. Financial strength and product market behavior: The real effects of corporate cash holdings. *The Journal of Finance* 65, 1097–1122.
- Hart, O. D., 2000. Different approaches to bankruptcy.
- Henderson, K., 2007. The rule of law and judicial corruption in china: half-way over the great wall. *Global Corruption Report 2007: Corruption in Judicial Systems* .
- Jensen, M. C., Meckling, W. H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics* 3, 305–360.
- Ji, Y., Shi, L., Zhang, S., 2022. Digital finance and corporate bankruptcy risk: Evidence from china. *Pacific-Basin Finance Journal* 72, 101731.

- John, K., Litov, L., Yeung, B., 2008. Corporate governance and risk-taking. *The journal of finance* 63, 1679–1728.
- Kaplan, S. N., Zingales, L., 1997. Do investment-cash flow sensitivities provide useful measures of financing constraints? *The quarterly journal of economics* 112 169–215.
- Li, B., Ponticelli, J., 2022. Going bankrupt in China. *Review of Finance* 26, 449–486.
- Li, S., 2019. The constitutional value and the market-based economic value of the bankruptcy law. *Journal of Peking University (in Chinese)* 56, 149–157.
- Li, S., Wang, Z., 2011. The gap between expectation of legislation and judicial practice and its resolution: Empirical analysis of bankruptcy law’s three-years implementation. *Journal of China University of Politics and Law (in Chinese)* 22, 58–79+159.
- Li, X., Rao, P., 2022. Insolvency regimes, deleveraging and capital structure dynamic adjustment: Evidence from the establishment of bankruptcy courts. *Economic Science (in Chinese)* 249, 95–111.
- Myers, S. C., 1977. Determinants of corporate borrowing. *Journal of financial economics* 5, 147–175.
- Rodano, G., Serrano-Velarde, N., Tarantino, E., 2016. Bankruptcy law and bank financing. *Journal of Financial Economics* 120, 363–382.
- Singh, R., Chauhan, Y., Jادیappa, N., 2022. Bankruptcy reform and corporate risk-taking: Evidence from a quasi-natural experiment. *Finance Research Letters* 47, 102679.
- Singh, R., Chauhan, Y., Jادیappa, N., 2023. Does an effective bankruptcy reform increases collateralized borrowing? evidence from a quasi-natural experiment in india. *Journal of Regulatory Economics* 63 74–86.
- Vig, V., 2013. Access to collateral and corporate debt structure: Evidence from a natural experiment. *The Journal of Finance* 68, 881–928.
- Wang, Y., Xue, X., 2022. Law and high-quality financial development: Evidence from bonds market in china. *Economic Research Journal (in Chinese)* 57, 95–111.
- Whited, T. M., 1992. Debt, liquidity constraints, and corporate investment: Evidence from panel data. *The journal of finance* 47, 1425–1460.

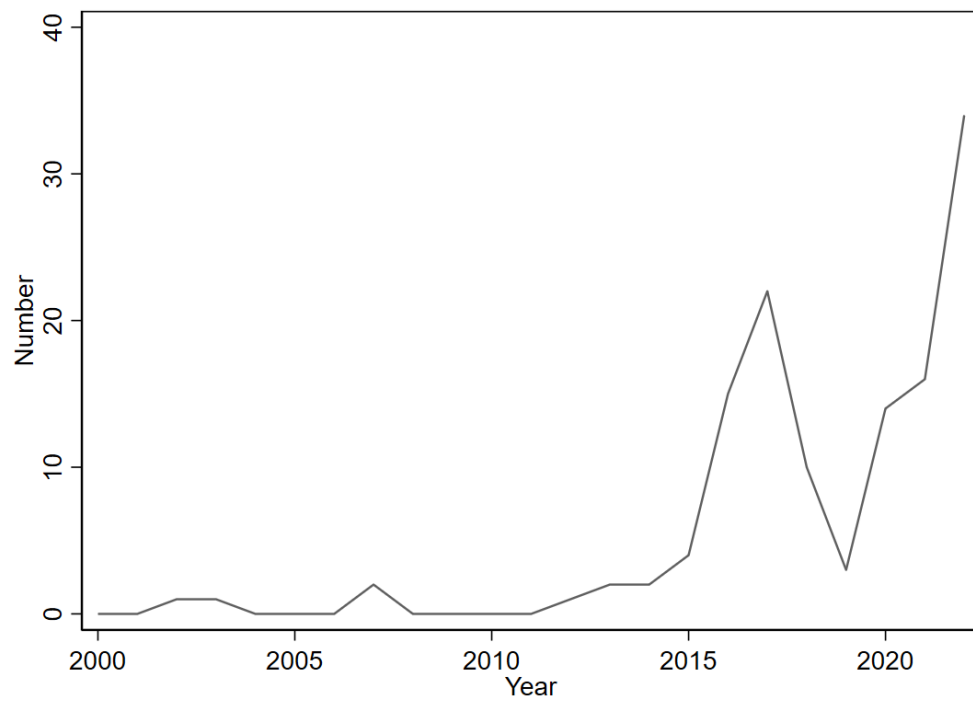


Figure 1: The Annual Establishment of Bankruptcy Courts in China

Table 1: Descriptive Statistics

This table presents the descriptive statistics for a sample of financial data of listed companies in China from 2002 to 2019.

Panel A. Summary Statistics						
	Mean	S.D.	Q25	Median	Q75	N
RISK	0.210	1.138	0.012	0.025	0.058	30,906
RISK2	1.681	16.972	0.018	0.035	0.063	30,906
BC	0.256	0.436	0.000	0.000	1.000	30,906
SIZE	21.921	1.321	20.973	21.743	22.648	30,906
MB	0.644	0.240	0.462	0.656	0.834	30,906
TANG	0.388	0.184	0.252	0.377	0.516	30,906
CASH	0.194	0.144	0.093	0.153	0.252	30,906
AGE	1.981	0.874	1.386	2.197	2.708	30,906
LEV	0.440	0.216	0.271	0.433	0.593	30,906
ROA	0.039	0.066	0.015	0.038	0.068	30,906
MER	0.048	0.032	0.026	0.041	0.061	30,906
INSTHOLD	0.415	0.235	0.239	0.413	0.594	30,906
KZ	1.801	3.099	0.013	1.706	3.367	30,906
TOBINC	2.657	85.672	1.199	1.524	2.167	30,906
LAWRULE	0.996	0.043	0.985	0.997	1.008	30,906

Table 2: Correlation Matrix

This table presents the correlation coefficient among the observations using a sample of 2889 listed firms in China from 2002 to 2019. The robust t -statistics clustered by the cities are reported in parentheses. ***, **, and * denote the significance at the 1%, 5%, and 10% levels, respectively.

	RISK	BC	SIZE	MB	TANG	CASH	AGE	TL	ROA	MER	INSTHOLD
RISK	1.00										
BC	-0.08***	1.00									
SIZE	-0.11***	0.12***	1.00								
MB	-0.03***	-0.01*	0.43***	1.00							
TANG	0.01	-0.18***	0.15***	0.24***	1.00						
CASH	0.02***	0.04***	-0.22***	-0.18***	-0.49***	1.00					
AGE	-0.01	0.00	0.36***	0.05***	0.20***	-0.36***	1.00				
TL	0.05***	-0.05***	0.35***	0.30***	0.33***	-0.42***	0.37***	1.00			
ROA	-0.05***	0.01**	0.04***	-0.16***	-0.14***	0.27***	-0.20***	-0.40***	1.00		
MER	0.11***	-0.04***	-0.35***	-0.33***	-0.12***	0.11***	-0.07***	-0.08***	-0.06***	1.00	
INSTHOLD	-0.04***	0.02***	0.41***	0.08***	0.11***	-0.07***	0.22***	0.17***	0.09***	-0.08***	1.00

Table 3: Bankruptcy Court Establishment and Risk-taking Behavior

This table presents the association between bankruptcy court establishment and firm risk-taking behavior using a sample of 2889 listed companies in China from 2002 to 2019. All regressions include firm and year fixed effects. The robust t -statistics clustered by the cities are reported in parentheses. ***, **, and * denote the significance at the 1%, 5%, and 10% levels, respectively.

	(1) RISK	(2) RISK	(3) RISK	(4) RISK
BC	-0.084*** (-3.30)	-0.081*** (-3.17)	-0.081*** (-3.14)	-0.086*** (-3.25)
SIZE	-0.087*** (-2.94)	-0.106*** (-3.54)	-0.093*** (-2.96)	-0.106*** (-3.27)
AGE	-0.070*** (-2.64)	-0.016 (-0.65)	-0.021 (-0.82)	-0.015 (-0.57)
LEV	0.515*** (3.19)	0.592*** (3.57)	0.579*** (3.56)	0.463*** (3.13)
ROA	-0.278 (-1.53)	-0.279 (-1.47)	-0.212 (-1.13)	-0.153 (-0.86)
MB		0.152*** (2.72)	0.164*** (2.99)	0.185*** (3.39)
TANG		-0.099 (-1.12)	-0.101 (-1.14)	-0.077 (-0.86)
CASH		0.322*** (2.89)	0.325*** (2.94)	0.353*** (2.98)
MER			1.052 (1.57)	0.944 (1.40)
INSTHOLD				0.290*** (3.21)
Observations	30,906	30,906	30,906	30,906
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Number of Cities	232	232	232	232
Adjusted R^2	0.23	0.23	0.23	0.23

Table 4: Robustness Checks

This table presents the association between bankruptcy court establishment and corporate risk-taking using a sample of 2889 listed firms in China from 2002 to 2019. All regressions include firm and year fixed effects. The robust t -statistics clustered by the cities are reported in parentheses. ***, **, and * denote the significance at the 1%, 5%, and 10% levels, respectively.

	Alternative Variable Definitions			PSM-DID	Sampling Criteria
	(1) RISK	(2) RISK2	(3) RISK3	(4) RISK	(5) RISK
BC2	-0.069*** (-3.05)				
BC		-1.758*** (-2.91)	-0.022** (-2.36)	-0.484** (-2.52)	-0.086*** (-2.80)
SIZE	-0.110*** (-3.37)	-1.360*** (-3.01)	-0.005 (-0.81)	-0.156*** (-3.17)	-0.072** (-2.37)
MB	0.187*** (3.44)	1.310* (1.71)	-0.191*** (-11.99)	0.202* (1.84)	0.181*** (2.90)
TANG	-0.098 (-1.10)	-0.034 (-0.03)	0.037 (1.64)	0.050 (0.31)	-0.158 (-1.41)
CASH	0.308*** (2.85)	4.552*** (2.91)	0.046* (1.80)	0.578** (2.18)	0.198* (1.68)
AGE	-0.019 (-0.73)	0.067 (0.17)	0.059*** (7.30)	-0.042 (-1.06)	-0.026 (-0.87)
LEV	0.580*** (3.54)	5.072* (1.84)	0.131*** (5.24)	0.819*** (3.51)	0.505*** (3.41)
ROA	-0.262 (-1.39)	-0.962 (-0.33)	0.311*** (7.42)	-0.736 (-1.51)	-0.175 (-0.86)
MER	0.982 (1.45)	8.311 (0.86)	-0.039 (-0.38)	-0.079 (-0.06)	1.511** (2.19)
INSTHOLD	0.293*** (3.27)	5.953*** (3.80)	0.057*** (2.68)	0.346*** (3.00)	0.242*** (2.64)
Observations	30,906	30,906	29,651	9,832	24,215
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Number of Cities	232	232	232	216	228
Adjusted R^2	0.23	0.25	0.45	0.27	0.23

Table 5: Cross-sectional Heterogeneity

This table presents the association between bankruptcy court establishment and corporate risk-taking based on cross-sectional heterogeneity using a sample of 2889 listed firms in China from 2002 to 2019. All regressions include firm and year fixed effects. We use the median of the KZ Index, Tobin-Q, and the level of local rule of law to distinguish the sample. The robust *t*-statistics clustered by the cities are reported in parentheses. ***, **, and * denote the significance at the 1%, 5%, and 10% levels, respectively.

	Financing Constraints		Market Valuation		Law Rule	
	(1) Low	(2) High	(3) Low	(4) High	(5) Low	(6) High
BC	-0.050 (-1.19)	-0.089*** (-3.30)	-0.021 (-1.16)	-0.165*** (-4.14)	-0.103*** (-3.03)	-0.043 (-1.39)
SIZE	-0.113** (-2.38)	-0.128*** (-2.72)	0.011 (0.46)	-0.239*** (-3.62)	-0.145*** (-3.05)	-0.083** (-2.49)
MB	0.093 (1.16)	0.240*** (2.82)	0.205** (2.44)	0.111 (0.92)	0.213*** (2.67)	0.205*** (2.86)
TANG	-0.133 (-0.57)	-0.172 (-1.38)	-0.100 (-1.04)	-0.107 (-0.69)	-0.091 (-0.80)	-0.022 (-0.17)
CASH	0.217 (1.27)	0.397 (1.46)	0.049 (0.48)	0.379** (2.41)	0.400*** (3.13)	0.296 (1.63)
AGE	-0.012 (-0.33)	0.021 (0.41)	0.035 (1.21)	-0.062 (-0.99)	0.004 (0.11)	-0.050 (-1.32)
LEV	0.317* (1.75)	0.737*** (2.76)	0.055 (0.38)	0.693*** (2.63)	0.603*** (2.84)	0.563*** (3.12)
ROA	0.371 (1.41)	-0.442* (-1.69)	0.208 (0.90)	-0.362 (-1.61)	-0.357 (-1.33)	-0.236 (-1.02)
MER	1.208 (1.31)	0.783 (0.82)	0.099 (0.14)	0.489 (0.45)	1.387 (1.56)	0.177 (0.22)
INSTHOLD	0.347** (2.59)	0.341** (2.31)	-0.085 (-0.87)	0.577*** (3.17)	0.373*** (2.60)	0.163 (1.43)
Observations	15,099	15,083	15,128	15,182	16,568	13,884
Stock FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of Cities	226	215	215	218	230	227
Adjusted R^2	0.26	0.25	0.27	0.26	0.23	0.21
(1) vs. (2)		0.10				
(3) vs. (4)		0.01				
(5) vs. (6)		0.06				

Appendix to

Bankruptcy Court Establishment and Corporate Risk-Taking

Table A1: Procedure of constructing the final sample

Panel A: Procedure of constructing the final sample	
	No. of firm years
Initial sample	43016
Exclude firms designated as special treatment or particular transfers.	(6089)
Exclude firms in the finance industry	(715)
Exclude observations with the missing value in the key variables	(5306)
Total	30906

Table A2: The Establishment of Bankruptcy Courts

City	Province	Time	City	Province	Time
Shenzhen	Guangdong	1993.12	Bengbu	Anhui	1994.5
Hefei	Anhui	1993.12	Luoyang	Henan	2003.4
Taiyuan	Shanxi	2007.6	Maoming	Guangdong	2007.10
Anyang	Henan	2012.8	Shaoxing	Zhejiang	2013.4
Foshan	Guangdong	2013.4	Linyi	Shandong	2014.5
Yuncheng	Shanxi	2014.12	Wenzhou	Zhejiang	2015.5
Hengyang	Hunan	2015.7	Chengdu	Sichuan	2015.12
Xingtai	Hebei	2015.12	Anshun	Guizhou	2016.1
Xuancheng	Anhui	2016.1	Deyang	Sichuan	2016.4
Changchun	Jilin	2016.6	Yueyang	Hunan	2016.6
Jinan	Shandong	2016.7	Beijing	Beijing	2016.9
Liaoning	Shenyang	2016.9	Nantong	Jiangsu	2016.10
Hangzhou	Zhejiang	2016.11	Sanmenxia	Henan	2016.11
Shijiazhuang	Hebei	2016.12	Guangzhou	Guangdong	2016.12
Tianjin	Tianjin	2016.12	Sanming	Fujian	2017.1
Zhuhai	Guangdong	2017.2	Quzhou	Zhejiang	2017.3
Daqing	Heilongjiang	2017.3	Liuzhou	Guangxi	2017.3
Meishan	Sichuan	2017.3	Yingkou	Liaoning	2015.12
Nanjing	Jiangsu	2017.4	Neijiang	Sichuan	2017.4
Nanning	Guangxi	2017.5	Kunming	Yunnan	2017.6
Yibin	Sichuan	2017.6	Huizhou	Guangdong	2017.7
Ziyang	Sichuan	2017.7	Taizhou	Jiangsu	2017.7
Ningbo	Zhejiang	2017.7	Zhenzhou	Henan	2017.8
Huaipei	Anhui	2017.8	fushun	Liaoning	2017.10
Xuchang	Henan	2017.10	Yancheng	Jiangsu	2017.11
Xinxiang	Henan	2017.11	Jiaozuo	Henan	2018.1
Harbin	Heilongjiang	2018.1	Changsha	Hunan	2018.3
Xian	Shaanxi	2018.4	Datong	Shanxi	2018.5
Huludao	Liaoning	2018.5	Wuhu	Anhui	2018.6
Leshan	Sichuan	2018.8	Dalian	Liaoning	2018.9
Zaozhuang	Shandong	2018.10	Shanghai	Shanghai	2019.2
Wuhan	Hubei	2019.4	Chongqing	Chongqing	2019.12

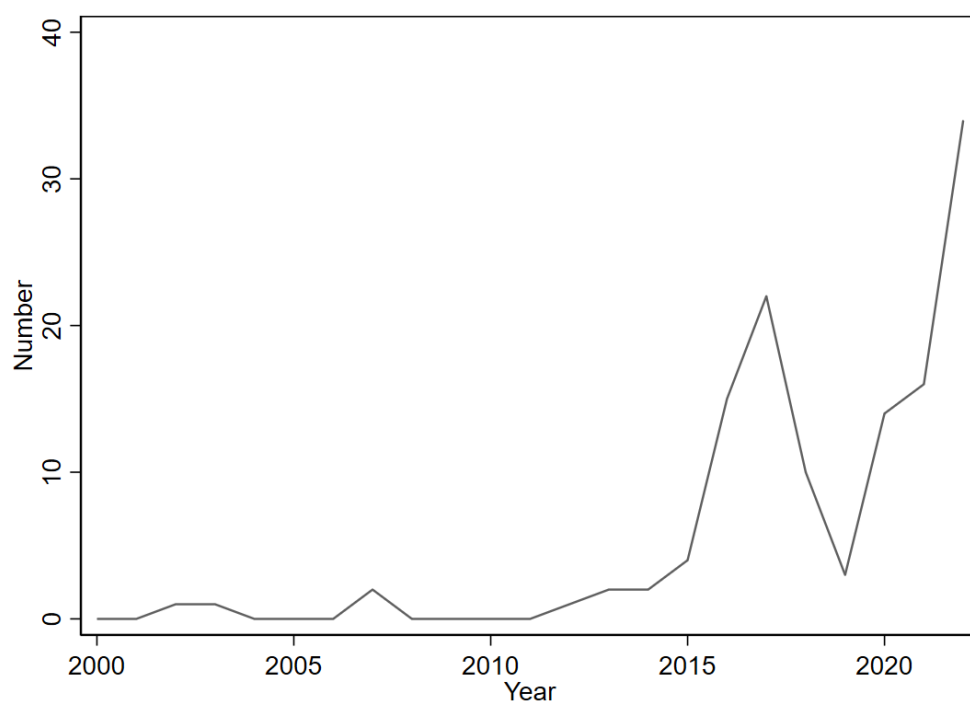


Figure A1: The Annual Establishment of Bankruptcy Courts in China

Table A3: Variable Definitions

Variable	Definition
BC	A dummy variable that equals one if the city where the firm locates has established the bankruptcy court and zero otherwise
Risk	The rolling standard deviation of the ROA
SIZE	Natural logarithm of total assets
AGE	Natural logarithm of firm age
LEV	Total liabilities over total assets
ROA	EBIT over total assets
TANG	Net fixed assets over total assets
MB	Market capitalization over book value of equity
CASH	Cash over total assets
MER	Management expense over total assets
INSTHOLD	Percentage of shares held by institutional investors
KZ	Firm's financial constraint measured by KZ index following (Kaplan and Zingales, 1997)
TOBINQ	Market value over replacement cost
LAWRULE	The number of closed cases over total cases in a city

A Parallel-trend Test

To generate Figure A2, the base period was set to one year before the establishment of the bankruptcy court. The results suggest that the impact of establishing a bankruptcy court was not significant in the four years before its implementation. However, the significance of the impact gradually increases following the establishment of the bankruptcy court, thereby passing the parallel-trend test.

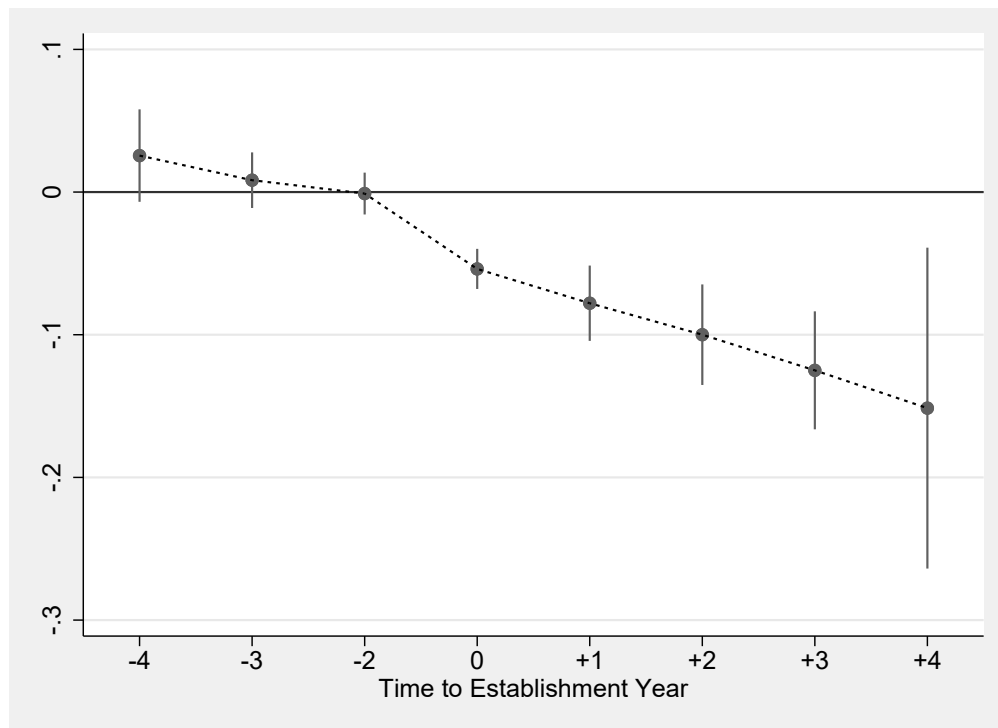


Figure A2: Dynamic Effect of Bankruptcy Courts Establishment on Corporate Risk-Taking

B Placebo Test

We used a placebo test to reduce the potential for policy-effect errors caused by subjective changes in the signals produced by the establishment of courts. Figure A3 shows the sampling test results, indicating that most of the coefficients are dispersed around zero and that the difference between the mean and true value is significant. Furthermore, most estimated coefficients are insignificant, indicating that the policy effect of establishing bankruptcy courts is not due to other unobserved factors. Therefore, our study's findings are reliable when accounting for anticipating the formation of a bankruptcy court.

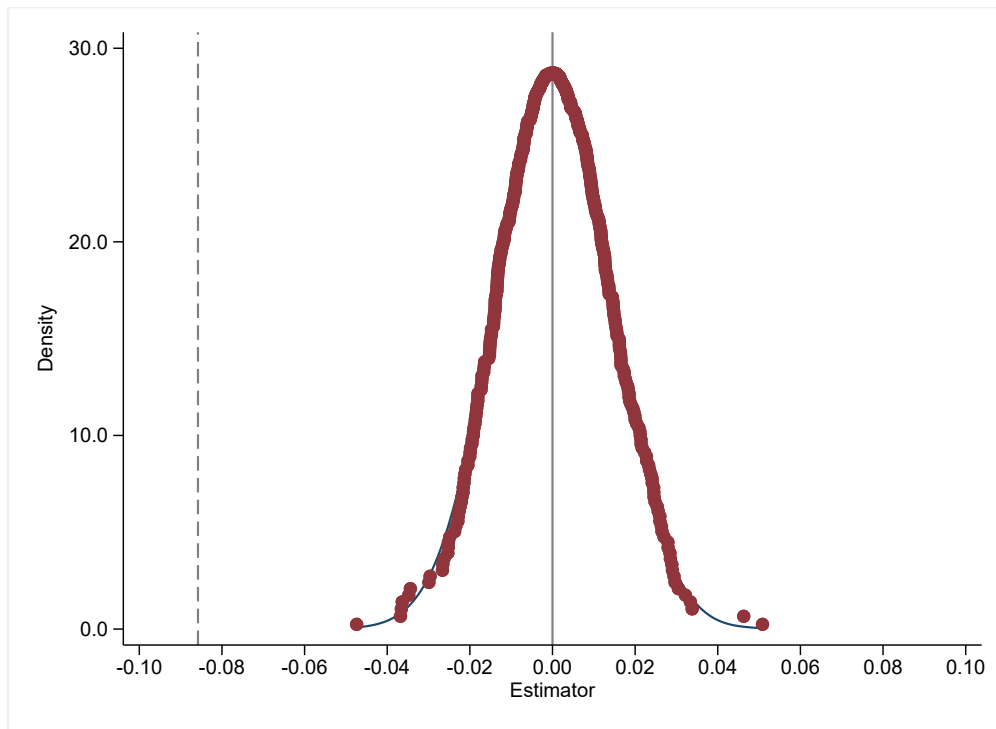


Figure A3: Placebo test