The Value of Bankruptcy Enforcement in Financial Distress

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PKU & UIBE

ABFER Capital Market Development

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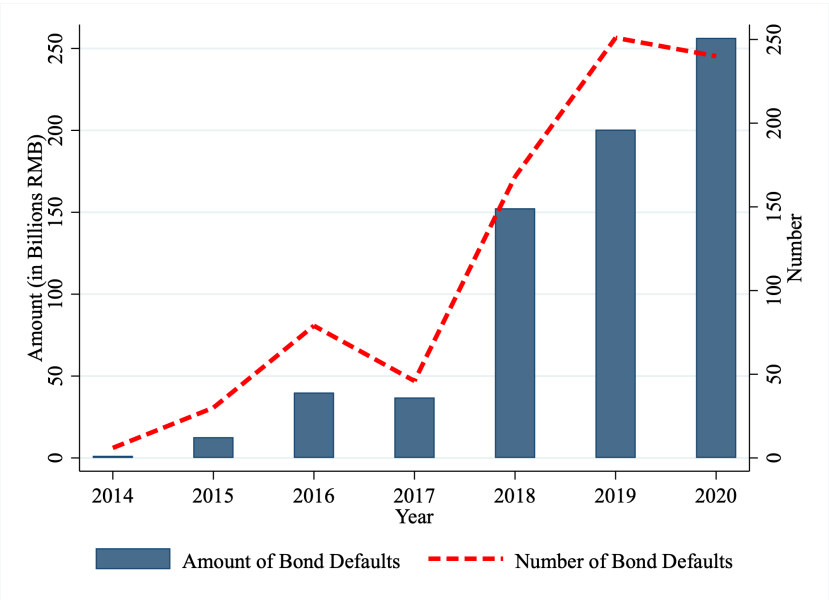
Motivation

- Legal institutions play an important role in financial market development and the allocation of resources (La Porta et al., 1997; Djankov et al., 2007)
- Developing countries introduce written laws to protect creditor rights
- However, numerous frictions in judicial enforcement
  - congested courts, lack of specialization, high bankruptcy costs
  - lack of judicial independence in China, where government interference is pervasive (Allen et al., 2005; Fan et al., 2013)
- The efficiency of bankruptcy enforcement affects debt recovery in distress and has broader implications for domestic and foreign creditors

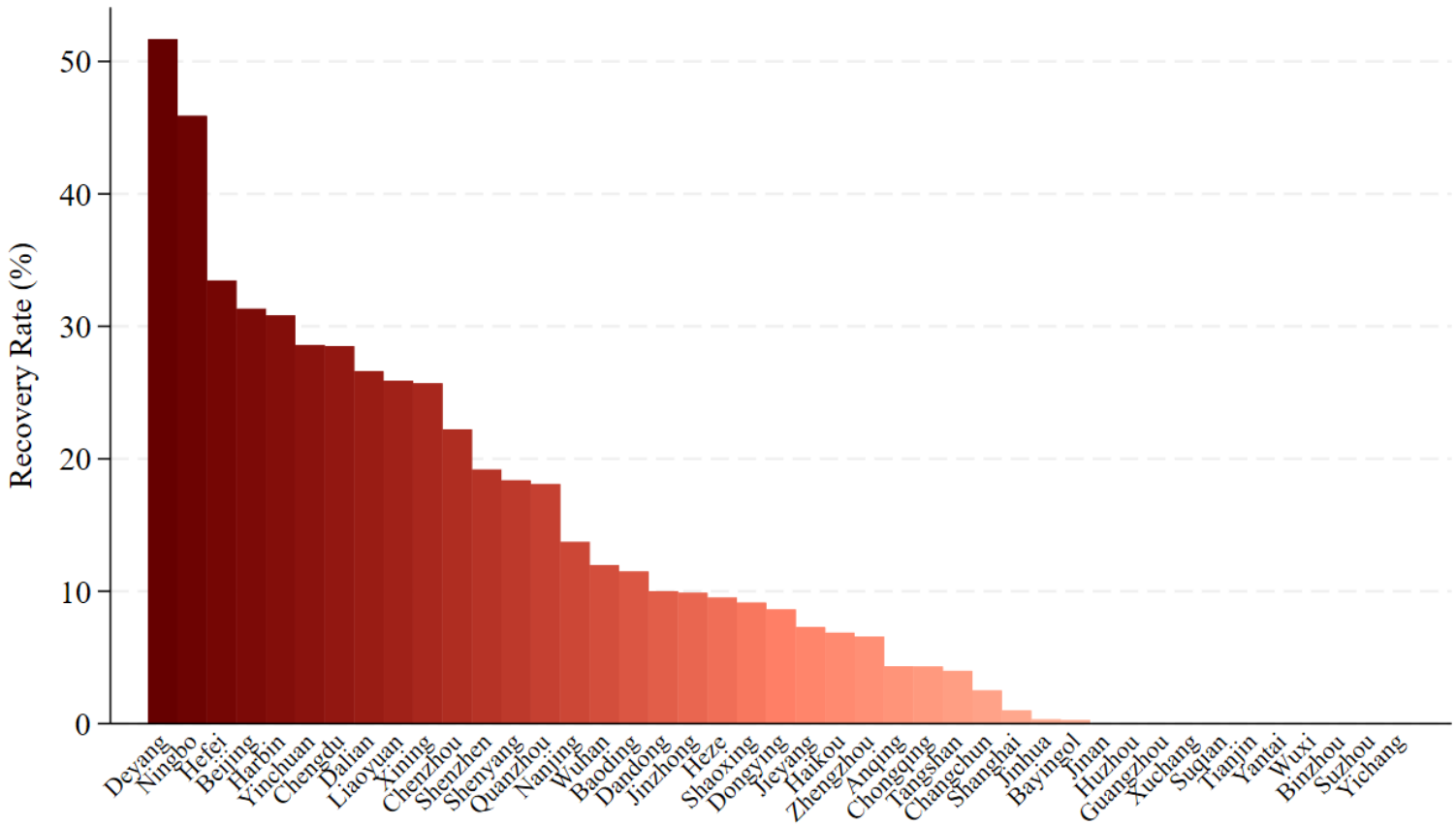
Stylized Facts

- The Chinese debt market has experienced booms and busts in the last two decades (Amstad and He, 2020)
- Barriers to bankruptcy
  - ultra-low corporate bankruptcy rate – 1/5 of the U.S.
  - gov./banks/firms desire to avoid bankruptcies through court
  - hiding major risks → enormous costs from banking crisis (Japan)
  - consequences: stifle productivity, prolong economic stagnation
- Surge in debt defaults totaled 120 billion USD, calling for bankruptcy reform to improve court enforcement



Stylized Facts

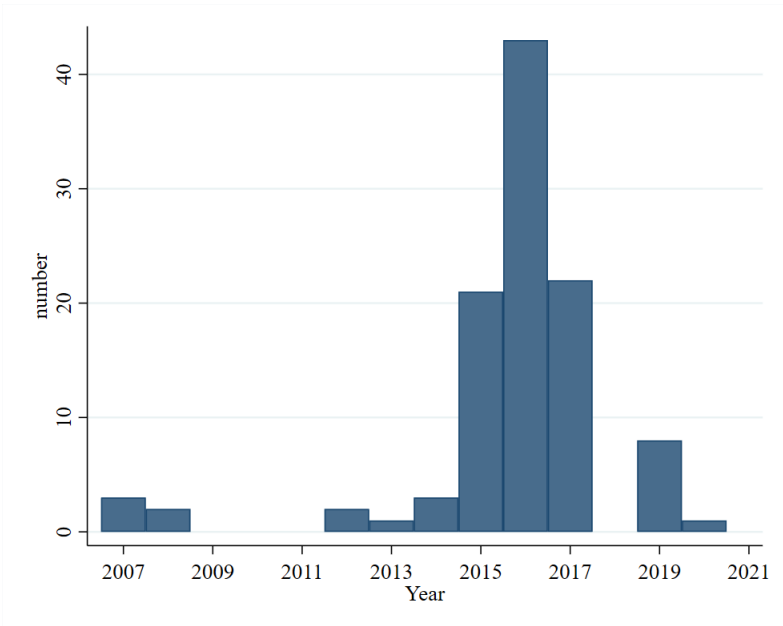
- Chinese judicial districts are highly heterogeneous in court efficiency
- Recovery rate: 22.2% (top quartile), 0% (bottom quartile)
  - US: 30% (median) for senior unsecured bonds



Institutional Setting

- 2007 New Enterprise Bankruptcy Law
  - covers private firms, strengthens creditors' rights, introduces reorganization
  - weak court enforcement under political interference
- Specialized courts to improve efficiency in bankruptcy resolutions
  - select judges with specialized training
  - 2007-2017: Specialized tribunals in existing courts (97)
  - 2019-2020: New specialized courts (9)

Beijing Bankruptcy Court, 2019/01/30



This paper

- Research question: how does bankruptcy enforcement in China affect the credit market?
- Empirical setting: exploit the staggered introduction of specialized courts compared to civil courts
  - better-trained judges/subject to less political influence (Li and Ponticelli, 2022)
  - unsecured bondholders price the securities in response to the expected value of their claims in bankruptcy state
  - local court to file for bankruptcy is pre-determined, which affects creditors to recover (no forum shopping)
  - focus on the role of bankruptcy enforcement: creditor recovery rate from resolution plans

Main Findings

- The specialized courts lead to reductions in bond spread
  - $\downarrow$ 17.9 bp, 7.6 % of the average trading spread
  - a $\uparrow$ 10% in bankruptcy enforcement decreases bond spread by 33 bp
  - court enforcement explains 47% of bond spread variation at the city level
- Mechanisms
  - improve bankruptcy efficiency
    - $\uparrow$ reorganization, $\downarrow$ time in bankruptcy, $\uparrow$ debt recovery by 11%
  - $\downarrow$ government interference in bankruptcies
  - no significant change in bond default probability
- Who benefits from the bankruptcy court
  - lower-rated bonds and riskier issuers
  - privately-owned enterprises (POEs)
  - cities with higher government debt, and local SOE default
  - amplified after a major SOE default: Yongmei event
- Real impacts: debt capacity ($\uparrow$ 4.6%) and investment ($\uparrow$ 14%) for a $\uparrow$ 10% in recovery rate

Related Literature

- The impact of law and creditor protection on the capital market
  - Haselmann et al. (2010), Becker and Josephson (2016), Rodano et al. (2016), Cerqueiro et al. (2017), Campello et al. (2018), Gao et al. (2019), Iverson et al. (2020), Müller (2022)
  - our paper quantifies pricing implications associated with bankruptcy courts
- Chinese bond market and the role of government on pricing
  - Ang et al. (2016), Bai et al. (2016), Liu et al. (2017), Amstad and He (2019), Chen et al. (2020), Jin et al. (2022), Li et al. (2023), Geng and Pan (2023)
  - we study the resolution outcomes of bond defaulters
- The role of bankruptcy enforcement
  - Qian and Strahan (2007), Bae and Goyal (2009), Lilienfeld-Toal et al. (2012), Gopalan et al. (2016), Ponticelli and Alencar (2016), Ivashina et al. (2016)
  - we focus on the variation in court enforcement

Data

- Timing on the introduction of specialized courts: the Supreme People's Court, the Ministry of Justice, and local courts
- Case-level data on bankruptcies from National Corporate Bankruptcy Information Disclosure Platform from 2012 to 2021
  - information on bankrupt firms (name, location, sector, size, ownership)
  - bankruptcy filings: dates (acceptance, completion), case type, court name, judges, bankruptcy trustees
  - resolution outcomes: reorganization/liquidation, duration, recovery rate, government interference
- Bond-level data from WIND
  - Time period: 2012Q1-2021Q4
  - Corporate bond: medium-term notes (MTN), exchange-traded corporate bonds (CB), and enterprise bonds (EB)
  - Bond characteristics: yield, maturity, issuance amount, rating, issuer ownership, location, sector, and financial conditions

Data

江苏省南京市中级人民法院
民事裁定书

The reorganization plan of China Electric Equipment Group is approved by Nanjing Intermediate People's Court

（2019）苏01破24号、（2020）苏01破15-21号之五

本院认为，合并重整计划制定、表决程序合法，内容符合法律规定，公平对待债权人，方案具有可行性。依照《中华人民共和国企业破产法》第八十六条第二款之规定，裁定如下：

一、批准中电电气集团有限公司、中电电气（南京）特种变压器有限公司、江苏中电输配电设备有限公司、中电电气（南京）新能源有限公司、中电电气（江苏）股份有限公司、中电电气（南京）光伏有限公司、中电电气（南京）半导体有限公司、江苏中电变压器制造有限公司合并重整计划；

二、终止中电电气集团有限公司、中电电气（南京）特种变压器有限公司、江苏中电输配电设备有限公司、中电电气（南京）新能源有限公司、中电电气（江苏）股份有限公司、中电电气（南京）光伏有限公司、中电电气（南京）半导体有限公司、江苏中电变压器制造有限公司合并重整程序。

本裁定自即日起生效。

合并重整计划（草案）

四、债权受偿方案

（一）清偿比例测算及清偿时间

分配顺序和金额如下表：

编号	项　目	清偿金额（元）	备　注
可分配现金总额		**807,054,552.13**	
1	有财产担保债权	326,157,243.66	按评估价值清偿
2	破产费用	25,000,000.00	含管理人报酬、预留税款
3	职工债权	78,716,938.93	100%清偿，含预留部分
4	税款债权	17,248,148.39	100%清偿
普通债权可分配余额		**359,932,221.15**	
5	普通债权 10万元以下部分	75,010,469.22	100%清偿，含预留部分，含担保财产价值不足清偿抵押优先债权部分，含高管人员普通债权部分，及税款债权普通债权部分
6	普通债权 10万元以上部分	285,807,951.93	**清偿比例3.64%**，含预留部分，含担保财产价值不足清偿抵押优先债权部分，含高管人员普通债权部分，及税款债权普通债权部分

The unsecured debt is recovered by 359 mn

The recovery rate of the part of unsecured debt that exceeds 100k is 3.64%

Model Specification

$$y_{bfct} = \beta \times SpecialCourt_{ct} + \gamma \times Z_{bcft} + \alpha_{pt} + \alpha_{st} + \alpha_f + \epsilon_{bfct}$$

- $SpecialCourt_{ct}$ equals 1 after a specialized court is introduced in city c
- b bond, f issuer, c registration city, t quarter, p province, s sector
- y_{bfct} represents spread over benchmark rate, i.e. yield of treasury bond with similar maturity
- Z_{bcft} includes:
  - city: log GDP, govt. deficit-to-GDP ratio
  - firm: log assets, leverage ratio, ROA, tangibility
  - bond: log issuance amount, remaining years to maturity
  - issuer's ownership×time FEs: LGFV, SOE, POE
  - bond characteristics×time FEs: bond rating (AAA, AA+, others), trading market (exchange, interbank)

Balance Test

- Local characteristics do not predict court introduction

	Cox model estimation	
	(1)	(2)
provincial capital city	0.764	0.906
	(0.555)	(0.773)
log(GDP)	0.691	0.364
	(0.526)	(0.611)
government deficit/GDP	-1.389	-4.688
	(5.258)	(7.294)
credit/GDP	0.192	-0.072
	(0.471)	(0.690)
log(population)	0.057	0.376
	(0.479)	(0.591)
% of manufacturing	0.078	0.093
	(0.059)	(0.073)
% of service	0.082	0.083
	(0.060)	(0.075)
% of zombie firms	-0.379	-0.322
	(0.666)	(0.678)
num. of defaults	0.185	0.059
	(0.319)	(0.347)
num. of bankruptcy cases	0.008	0.010
	(0.014)	(0.017)
business environment	-0.039	0.037
	(0.095)	(0.114)
province FEs	No	Yes
N	2907	2907

Baseline Results

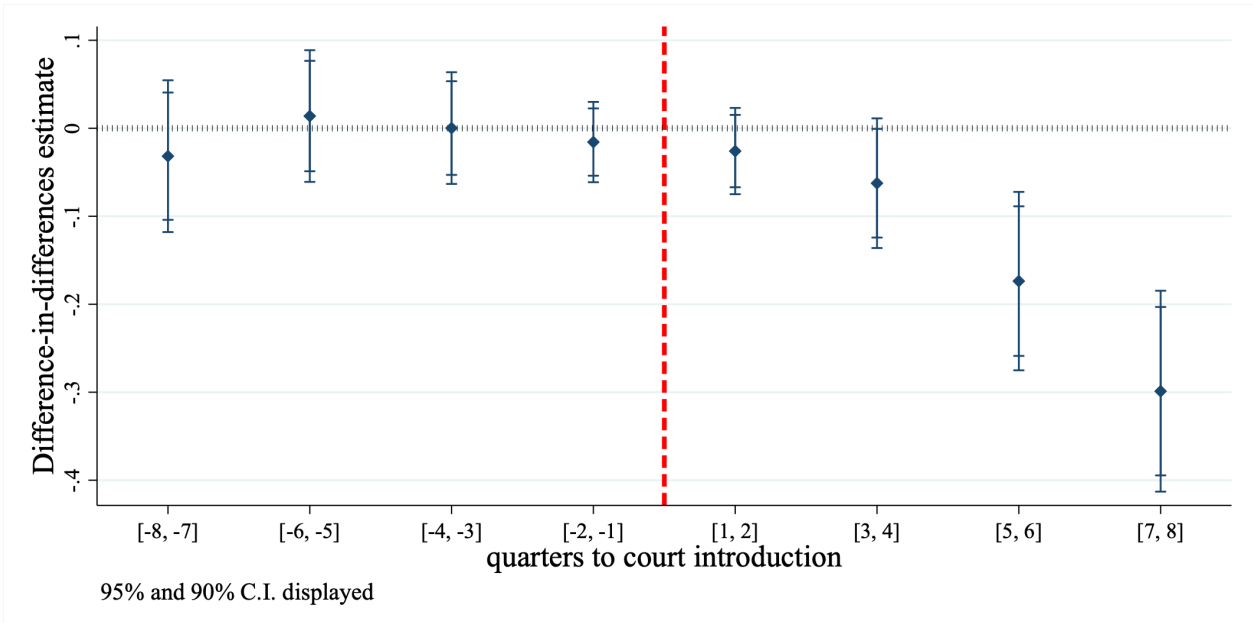
	Bond Spread				
	(1)	(2)	(3)	(4)	(5)
SpecialCourt	-0.179***	-0.218***	-0.185***	-0.189***	-0.190***
	(0.058)	(0.053)	(0.052)	(0.053)	(0.053)
log(GDP)			-0.292	-0.139	-0.140
			(0.246)	(0.237)	(0.237)
govt. deficit/GDP			2.469**	2.421**	2.417**
			(1.110)	(1.093)	(1.093)
size				-0.249***	-0.249***
				(0.064)	(0.063)
leverage				0.367**	0.364**
				(0.165)	(0.164)
ROA				-0.097***	-0.097***
				(0.011)	(0.011)
tangibility				-0.047	-0.047
				(0.188)	(0.188)
log(issuance amount)					0.011
					(0.024)
remaining maturity					-0.011
					(0.007)
bond issuer FEs	Yes	Yes	Yes	Yes	Yes
province×time, sector×time FEs	Yes	Yes	Yes	Yes	Yes
issuer's ownership×time FEs	No	Yes	Yes	Yes	Yes
bond characteristics×time	No	Yes	Yes	Yes	Yes
R^2	0.548	0.581	0.580	0.583	0.583
N	166935	166935	165001	163455	163455

- The courts decrease the bond spread by 17.9 bp (7.6%)
- bond characteristics: rating, trading market

Parallel Trend

- no pre-trend before the court introduction
- a sizable reduction after 4 quarters, and remains significant after 8 quarters

$$y_{bfct} = \sum_n \beta_n \times D_n SpecialCourt_{ct} + \gamma \times Z_{bcft} + \alpha_{pt} + \alpha_{st} + \alpha_f + \epsilon_{bfct}$$

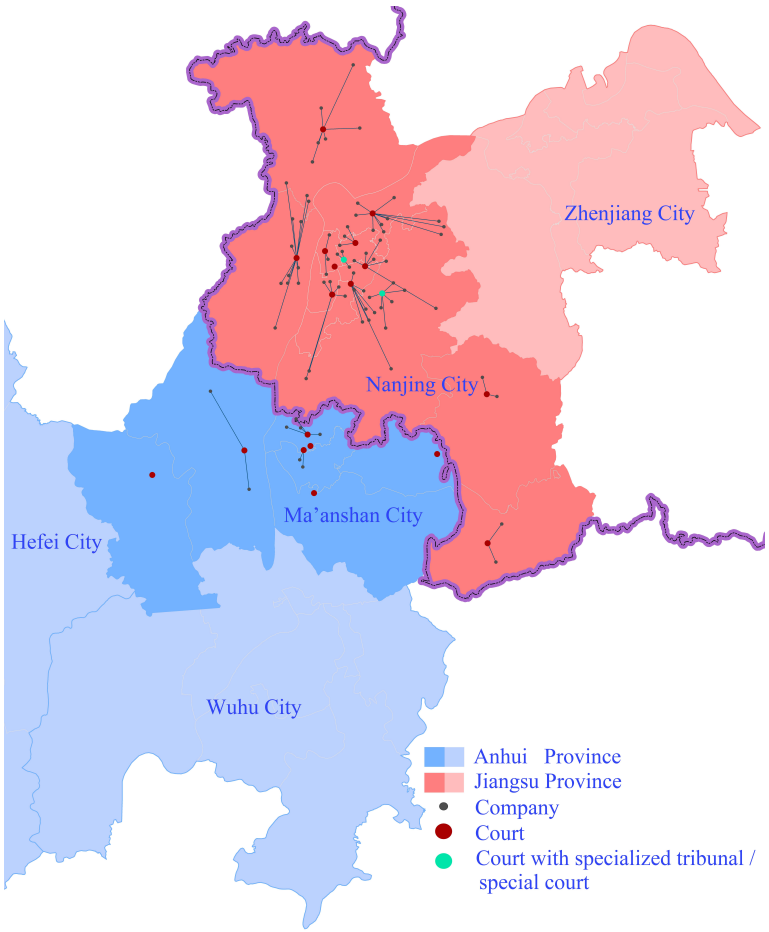


- robust to alternative methods (Borusyak et al., Sun and Abraham, Cengiz et al.)

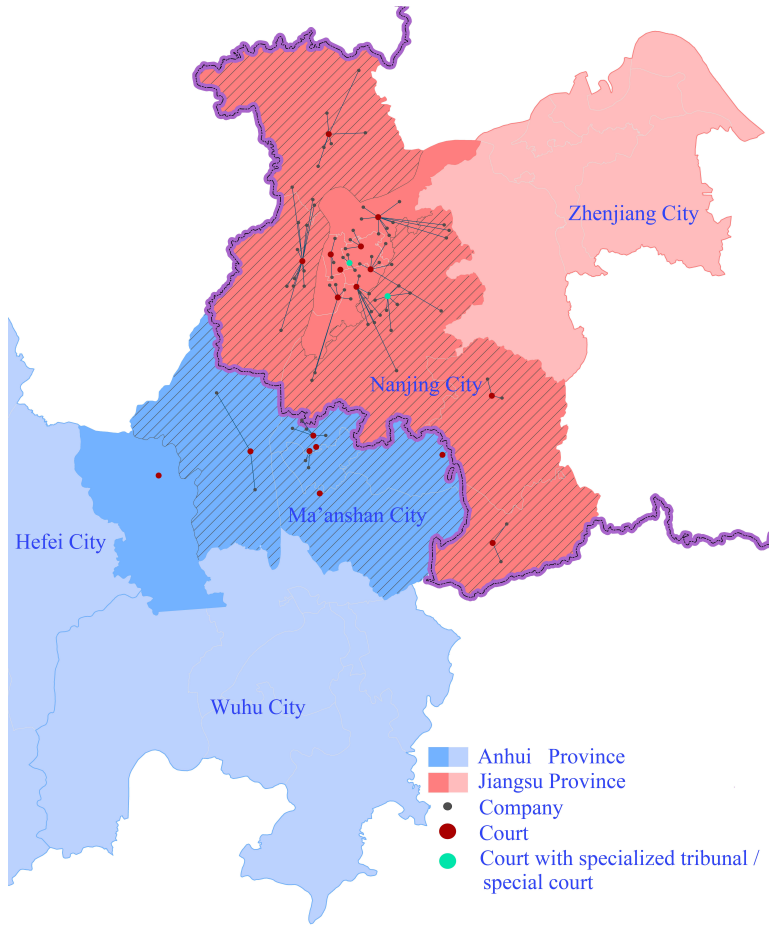
Identification

- Our identification strategy exploits the timing of the introduction of the specialized court and differences in the jurisdiction of courts dealing with bankruptcy cases
- The potential court dealing with bankruptcy cases is predetermined according to Article III of *The Enterprise Bankruptcy Law*, which states that "*bankruptcy cases shall be under the jurisdiction of the People's Court where the debtor is domiciled*"
- Neighboring county regression
  - To establish the direction of causality, we compare bond spreads between counties that are adjacent to each other but belong to jurisdictions that are different in court enforcement
  - Because of the geographic proximity, any differences in spreads between counties on either side of the border can be plausibly attributed to the effect of the specialized court
  - We further keep issuers whose distances to the nearest court are within 10 km

Neighboring Jurisdictions



(a) Neighboring cities



(b) Neighboring counties

Neighboring Jurisdiction Regression

- the subsample of bond issuers located in neighboring cities or counties along provincial borders

	Neighboring Cities		Neighboring Counties	
	(1)	(2)	(3)	(4)
SpecialCourt	-0.167**	-0.175**	-0.208**	-0.211**
	(0.068)	(0.071)	(0.080)	(0.087)
bond issuer FEs	Yes	Yes	Yes	Yes
province×time, sector×time FEs	Yes	Yes	Yes	Yes
issuer's ownership×time FEs	Yes	Yes	Yes	Yes
bond characteristics×time FEs	Yes	Yes	Yes	Yes
city, issuer, bond controls	No	Yes	No	Yes
R^2	0.597	0.596	0.715	0.711
N	86013	84197	18901	18163

Conceptual Framework

- Creditor protection can be driven by either loss given default or default probability
- Chen, Collin-Dufresne, and Goldstein (2009) shows that bond spread y is

$$y = -\frac{1}{T}\ln\{1-(1-c)\mathcal{N}[\mathcal{N}^{-1}(\pi)+\theta\sqrt{T}]\}$$

where

  - T: bond maturity
  - θ: asset Sharpe ratio
  - π: default probability
  - c: debt recovery rate

- We have two testable predictions from this framework
  1. An increase in debt recovery rate reduces the bond spread

$$\frac{\partial y}{\partial c} < 0$$

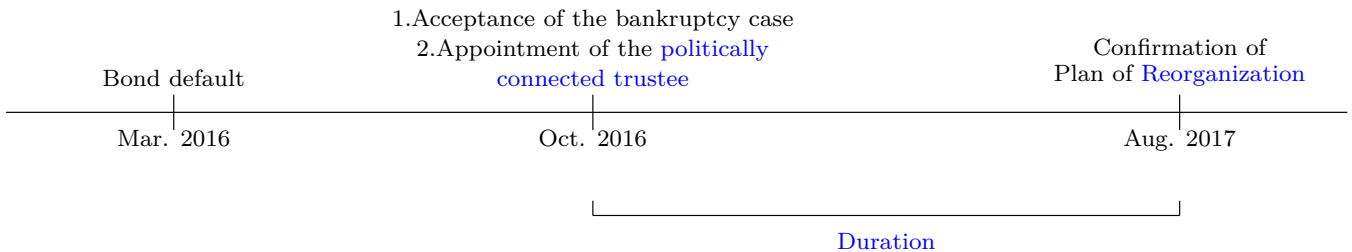
  2. The effect of debt recovery rate on bond spread is stronger when default probability is higher

$$\frac{\partial^2 y}{\partial c \partial \pi} < 0$$

Mechanism: Bankruptcy Outcomes

For issuers who defaulted between 2012 and 2021, we construct

- liquidation/reorganization
- duration: from case acceptance to plan confirmation
- recovery rate (Ivashina et al., 2016):
  - in reorganizations: the estimated market value of the assets repaid to the unsecured creditors over the value of total unsecured debts
  - in liquidations: the estimated sale proceeds over the value of total unsecured debts reported at filing



Claims (in order of seniority)	Repayment under the Plan
A.Secured creditor claims	secured debt will be fully repaid in 10 years
B.Labor claims	get a one-time cash payment of 100% of wages and benefits
C.Tax claims	get a one-time cash payment of 100% of tax claims
D.Unsecured creditor claims	
D1.Creditors owed less than 500,000 RMB	receive a one-time cash payment of 100% of the claims
D2.Creditors owed more than 500,000 RMB	
i. Bondholders and non-financial creditors	elect for a one-time cash payment of **22.09%** of the debt claims, or convert the debt claims into equity
ii. Financial creditors	convert the debt claims into equity

Mechanism: Bankruptcy Outcomes

- ↑ **bankruptcy efficiency**: ↓ 28% liquidation, ↓ 509 days time in bankruptcy, ↑ 11% debt recovery
- ↓ 44% **government interference** in bankruptcy through politically connected trustees

	Liquidation		Duration		Recovery Rate		Government Interference	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SpecialCourt	-0.293**	-0.278**	-5.520***	-5.645***	0.077**	0.109**	-0.433**	-0.441**
	(0.134)	(0.108)	(2.027)	(1.869)	(0.034)	(0.054)	(0.199)	(0.193)
city FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
sector FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
province×year of default	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
control variables	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.927	0.963	0.915	0.936	0.786	0.817	0.945	0.964
N	363	363	363	363	363	363	363	363

- controls: firm size, leverage, yield at issuance, log issuance amount
- A 11% increase in recovery rate from the median (7%) reduces a 3-year bond spread from 2.49% to 2.19% (↓ 30 bp)

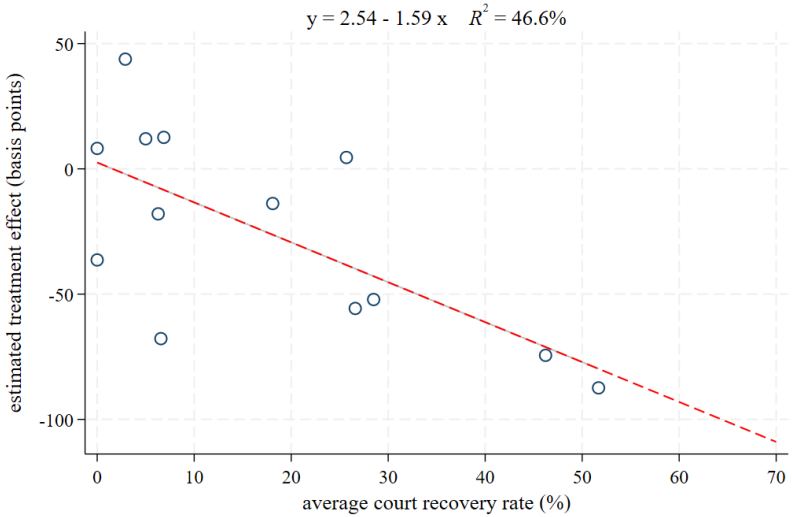
Sensitivity to Local Court Enforcement

- How do bond investors value the local debt enforcement outcomes after the bankruptcy court?
- CourtEnforcement: average recovery rate of defaulted bonds in a city
- A 10% increase in court enforcement reduces spread by 33 bp
  - high enforcement ($> 30\%$): decrease spread by additional 134 bp

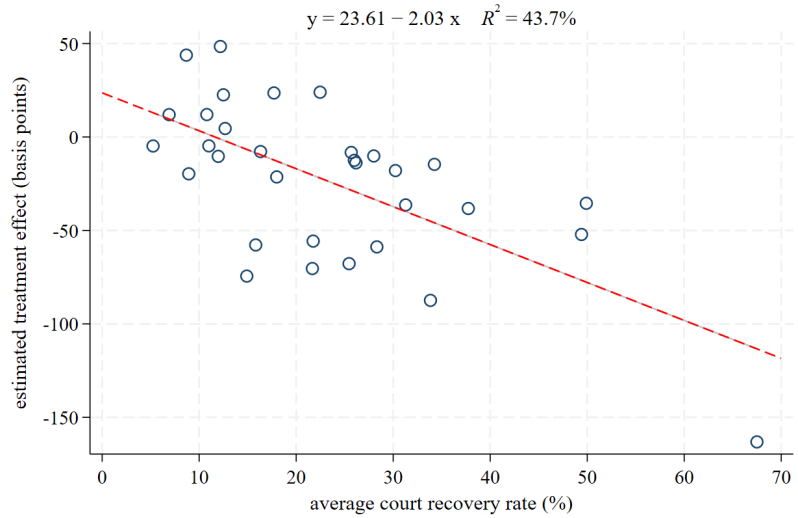
	Bond Spread			
	(1)	(2)	(3)	(4)
SpecialCourt	0.091	0.311*	0.028	0.234
	(0.208)	(0.168)	(0.206)	(0.149)
SpecialCourt×CourtEnforcement	-3.258**	-3.261***		
	(1.381)	(1.100)		
SpecialCourt×CourtEnforcement $\in (10\%, 30\%]$			-1.230**	-1.273***
			(0.524)	(0.373)
SpecialCourt×CourtEnforcement $\in (30\%, 100\%]$			-1.389***	-1.344***
			(0.502)	(0.391)
bond issuer FEs	Yes	Yes	Yes	Yes
province×time, sector×time FEs	Yes	Yes	Yes	Yes
issuer's ownership×time FEs	Yes	Yes	Yes	Yes
bond characteristics×time FEs	Yes	Yes	Yes	Yes
city, issuer, bond controls	No	Yes	No	Yes
R^2	0.635	0.643	0.636	0.643
N	40115	39581	40115	39581

Sensitivity to Local Court Enforcement

- How can court enforcement explain the pricing of corporate bonds?
  - estimate the city-level treatment effects
  - court enforcement explains 40% of the variation in bond spreads



(a) Bond Defaulters



(b) Bankrupt Firms

Heterogeneity, Real Outcomes, and Robustness

- Who benefits from bankruptcy court?
  - issuers with higher financial risks
  - privately owned enterprises (POEs) with higher bankruptcy costs
  - cities with high government debt and SOE defaults
  - after a major SOE default event
- Real impacts on bond issuers
  - debt capacity and investment
  - unsecured and secured creditors
  - sensitivity of investment to court enforcement
- Robustness tests

State Ownership

	Bond Spread	
	(1)	(2)
SpecialCourt	-0.097***	-0.055**
	(0.023)	(0.023)
SpecialCourt×D(SOE)	-0.138***	-0.153***
	(0.020)	(0.021)
SpecialCourt×D(POE)	-0.234***	-0.261***
	(0.067)	(0.065)
bond issuer FEs	Yes	Yes
province×time, sector×time FEs	Yes	Yes
issuer's ownership×time FEs	Yes	Yes
bond characteristics×time FEs	Yes	Yes
city, issuer, bond controls	No	Yes
R^2	0.581	0.583
N	166935	163455

	POE	SOE	Diff.
Bond Spread (%)	3.551	2.214	1.336***
Implied Default Probability (%)	3.757	1.455	2.301***
Rating Grade ($AAA = 1$)	2.316	1.943	0.373***

- The reduction in the bond spread is stronger in POEs

Heterogeneous Effects across Local Government Debt

- Local government debt totaled 69% (30%) of GDP in 2020 (2012)
- in cities with higher government debt and local SOE defaults
- after a major SOE default: Yongmei

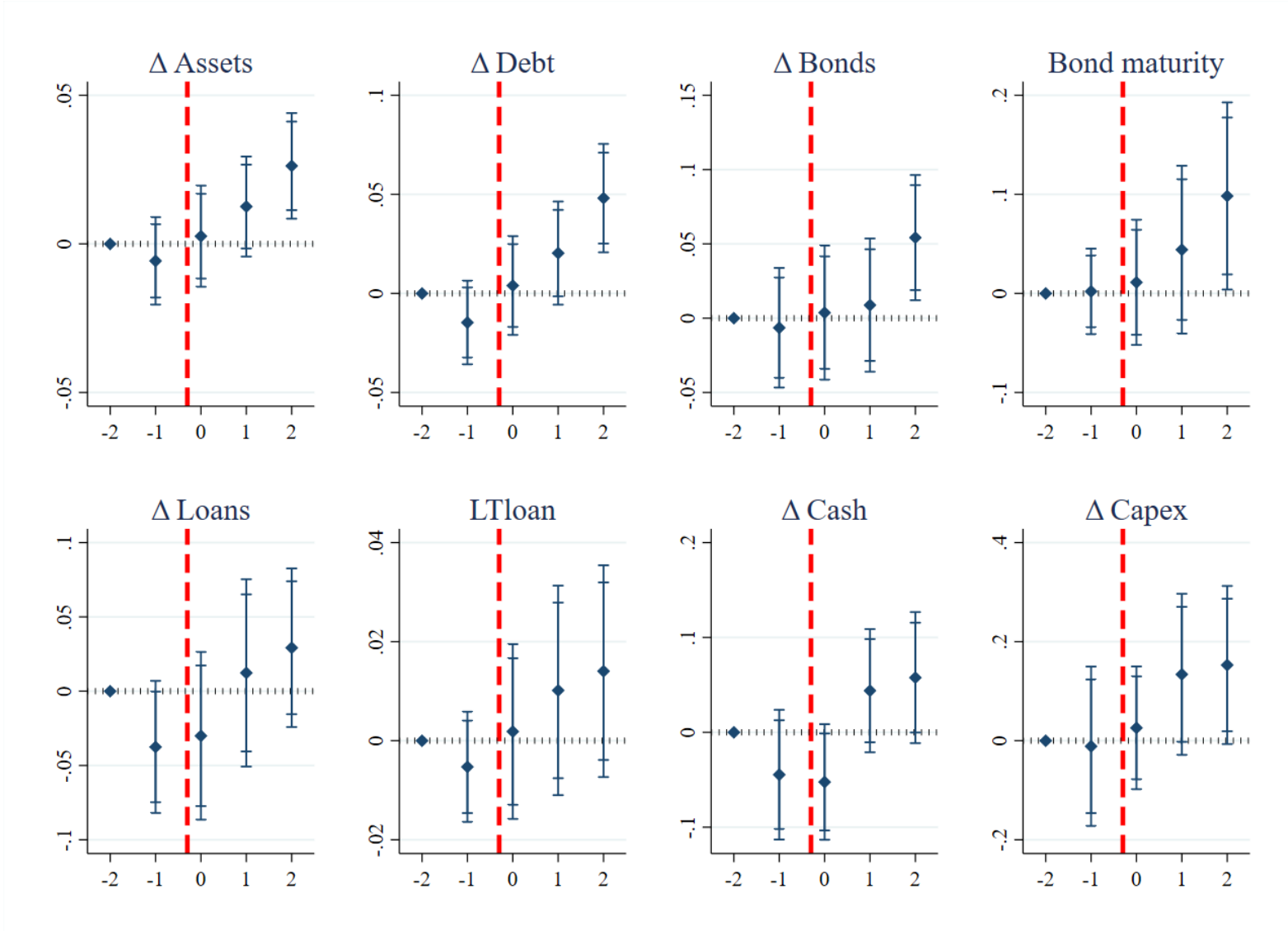
	Bond Spread			
	(1)	(2)	(3)	(4)
SpecialCourt	-0.081***	-0.119***	-0.154***	-0.156***
	(0.025)	(0.022)	(0.020)	(0.019)
SpecialCourt×D(High Gov. Leverage)	-0.195***			
	(0.032)			
SpecialCourt×D(Low GDP Growth)		-0.144***		
		(0.024)		
SpecialCourt×D(Post Local SOE Default)			-0.390***	
			(0.049)	
SpecialCourt×D(Post Yongmei Default)				-0.291***
				(0.041)
bond issuer FEs	Yes	Yes	Yes	Yes
province×time, sector×time FEs	Yes	Yes	Yes	Yes
issuer's ownership×time FEs	Yes	Yes	Yes	Yes
bond characteristics×time FEs	Yes	Yes	Yes	Yes
city, issuer, bond controls	Yes	Yes	Yes	Yes
R^2	0.584	0.584	0.583	0.584
N	163455	163415	163455	163455

Debt Structure and Firm Investment

	Δ Assets	Δ Debt	Δ Bonds	Maturity	Δ Loans	LTloan	Δ Cash	Δ CAPEX
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SpecialCourt	0.068***	0.090***	0.123**	-0.097	0.079	0.094**	0.047	0.023
	(0.012)	(0.015)	(0.048)	(0.062)	(0.051)	(0.041)	(0.132)	(0.104)
SpecialCourt×CourtEnforce.	0.452***	0.455***	0.374**	0.986***	0.225	0.002	1.267***	1.393***
	(0.036)	(0.105)	(0.164)	(0.334)	(0.396)	(0.228)	(0.383)	(0.489)
bond issuer FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
province×time FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
sector×time FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
city, issuer controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.445	0.373	0.245	0.607	0.211	0.825	0.197	0.155
N	6102	6102	6102	4860	6102	6102	6102	6070

- increase debt capacity and investment (Ponticelli and Alencar, 2016)
- longer bond maturity under stronger court enforcement (Gopalan et al., 2016)
- larger increase in bonds than bank loans
- A 10% rise in enforcement leads to increases in bond (investment) by 4% (14%)

Debt Structure and Firm Investment



Robustness Tests

- alternative measures of bond spread
- alternative estimation methods
- exclude bonds issued by central SOEs
- exclude new issuers and issuance
- by court's first case completion date
- by bond credit enhancement
- by trading market and security types
- falsification test by randomizing court introduction
- impact on the primary market
- impact on shareholders

Conclusion

- Bankruptcy institutions are key for financial and economic development
- However, characterized by friction (weak court enforcement) and political influence in China

Take home points from this paper:

- Specialized courts enhance creditor protection by expediting bankruptcy proceedings, reducing political interference, and increasing the creditor recovery rate
- Variations in local court enforcement explain 40% of bond spread
- Policy implication: stronger court enforcement is a necessary precondition for firms to benefit from judicial reform, as it favors the reallocation of resources toward POEs

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BUSINESS READY

2.2 PUBLIC OFFICIALS AND INSOLVENCY ADMINISTRATOR					
2.2.1 Specialization of Bankruptcy Courts or Bankruptcy Judges					
Specialized Courts	1	1	2	8.33	Anderson, Bernstein, and Gray (2005); Detotto, Serra, and Vannini (2019); Iverson et al. (2018); Li and Ponticelli (2020); Rodano, Serrano-Velarde, and Tarantino (2016); Visaria (2009)
Total points for Subcategory 2.2.1	1	1	2	8.33	
2.2.2 Insolvency Administrator's Expertise in Practice					
Qualification requirements	1	1	2	8.33	Fieden and Wielenberg (2017); UNCITRAL (2021); World Bank Group (2021)
Total points for Subcategory 2.2.2	1	1	2	8.33	
Total points for Category 2.2	**2**	**2**	**4**	**16.66**	
Total points for Pillar II	**12**	**12**	**24**	**100**	