

Government Deleveraging and Corporate Distress

Jiayin Hu^{1,2} Songrui Liu³ Yang Yao^{1,2} Zhu Zong¹

¹National School of Development, Peking University

²China Center for Economic Research, Peking University

³School of Applied Economics, Renmin University of China

NBER Conference on the Chinese Economy

Chinese University of Hong Kong, Shenzhen

December 16, 2023

Outline

- 1 Introduction
- 2 Data and Methodology
- 3 The Impact on Accounts Receivable
- 4 Financial Distress of Procurement Bid-winners
- 5 The Real Impact of Government Deleveraging
- 6 Conclusion

A World of Public Debt

- **An indebted government entails significant risks to economic development and financial stability**
 - ▶ Global public debt reached a record 92 trillion USD in 2022, and a total of 52 countries (almost 40% of the developing world) are in “serious debt trouble”
 - ▶ IMF projects global public debt to rise again in 2023, with EM economies and low-income countries especially affected by elevated debt vulnerabilities
- **Understanding the complexity of government deleveraging and its potential impact is of great value to both scholars and policymakers**
 - ▶ Existing literature has investigated the downsides of government debt
 - ▶ Few examines the impact of government deleveraging, which may bring unintended consequences and amplify financial distortions despite potential long-run benefits

Late Payment by Governments is a Worldwide Problem

- Public authorities are large buyers of goods and services in many countries
- Government arrears affect firms negatively, esp. during crisis time



English

Business, Economy, Euro

Internal Market, Industry, Entrepreneurship and SMEs

Home | Single market and standards | Industry | Entrepreneurship and SMEs | Access to finance | Se

Home > Entrepreneurship and SMEs > SME strategy > Late Payment Directive

Late Payment Directive

The entire European economy is negatively affected by late payment. To protect European businesses, particularly SMEs, against late payment, the EU adopted Directive 2011/7/EU on combating late payment in commercial transactions in February 2011.

Each year across Europe thousands of small and medium-sized enterprises (SMEs) go bankrupt waiting for their invoices to be paid. Jobs are lost and entrepreneurship is stifled. Late payment causes administrative and financial burdens, which are particularly acute when businesses and customers are in different EU countries. Cross-border trade is inevitably impacted.

China to clear arrears owed to SMEs, ensure wage payment to migrant workers

Updated: December 2, 2021 00:16 Xinhua

BELING — China will take measures to clear arrears owed to small and medium-sized enterprises (SMEs), and ensure migrant workers' wages are paid on time and in full, the State Council's Executive Meeting chaired by Premier Li Keqiang decided on Dec 1.

The meeting noted the relatively fast increase in the accounts receivable of SMEs and rising incidences of delinquent payment this year due to the complex and challenging circumstances at home and abroad, sporadic COVID-19 cases in multiple places and other factors.

The invisible burden: How arrears could unleash a banking crisis

Rita Ramalho, Carmen Reinhart, Erica Bosio / 22 Mar 2021

In sub-Saharan Africa, the government is one of the biggest purchasers of works and services in the economy. Countries in sub-Saharan Africa are also the least efficient when it comes to paying outstanding invoices. This column estimates that the size of government arrears in sub-Saharan Africa was 4.26% of GDP in 2019, and likely increased by an average of 1.92 percentage points of GDP across the region in 2020. Financing the COVID relief and recovery programmes by delaying payments is negatively affecting suppliers and contractors at a time when liquidity is crucial for firm survival, which in turn burdens the banking sector and increases the likelihood of a banking crisis.

Preview of this paper

- **We examine the unintended consequences of local gov. deleveraging**
 - ▶ Policy shock: China's top-down deleveraging campaign in 2017
 - ▶ Unique data on local government procurement (GP) contracts to identify the impact of government deleveraging on supplier firms through trade credit
- **We find more severe financial distress among private supplier firms, consistent with the selective payment delay hypothesis**
 - ▶ The delay in payment is equivalent to financing from suppliers
 - ▶ Private firms with GP contracts experience larger accounts receivable increases, larger cash holdings reductions, and higher share-pledging activities
 - ▶ They also experience greater likelihoods of ownership changes (more share-pledging by controlling shareholders) and deteriorated performance
- **Deleveraging amplifies existing financial distortions favoring SOEs**
 - ▶ Distress effects are muted for SOEs, which already enjoy funding privileges
 - ▶ Local gov. shift financing burdens to POEs, exacerbating credit misallocation

Contribution to the literature

- **Novel empirical evidence on the impact of government deleveraging**
 - ▶ Previous literature on household (e.g., Justiniano et al., 2015; Di Maggio et al., 2017) and corporate deleveraging (e.g., DeAngelo et al., 2018; Andres et al., 2020)
 - ▶ Local gov. debts in China: Chen et al. (2020); Huang et al. (2020)
 - ▶ Our paper examines the deleveraging of local governments, where the overborrowing is rooted in soft budget constraints (Kornai, 1986; Bai and Wang, 1998; Qian and Roland, 1998; Maskin, 1999)
- **Trade credit channel using procurement contract data**
 - ▶ Financial contagion through inter-firm supply chains: Boissay and Gropp (2013); Jacobson and von Schedvin (2015); Costello (2020)
 - ▶ Ex-ante bidding and contracting features of procurement contracts: Mironov and Zhuravskaya (2016); Lewis-Faupel et al. (2016); Palguta and Pertold (2017); Coviello and Gagliarducci (2017); Decarolis et al. (2020); Brogaard et al. (2021)
 - ▶ Our paper highlights the risks of doing business with indebted governments regarding ex-post payments

Contribution to the literature II

• Financial distortions and credit misallocation

- ▶ Corporate political connections are pervasive worldwide (Faccio, 2006)
- ▶ China features a market-based economy with a heavy government presence (Xiong, 2018; Brunnermeier et al., 2022)
- ▶ Financial distortions favoring less-productive SOEs (Song et al., 2011)
- ▶ The gap between SOEs and non-SOEs in China has even widened recently
 - ★ Geng and Pan (2019): the financing premium enjoyed by SOEs relative to their non-SOE counterparts increases amid government-led credit tightening, deepening the segmentation in China's bond markets
 - ★ Fang et al. (2022): China's anti-corruption campaign may contribute to the recent resurgence of SOEs and the retreat of private firms in the real estate sector
 - ★ Huang et al. (2020) find that the crowding-out impact of local government debts is only pronounced for private firms but not SOEs
- ▶ Our findings show that financially constrained local governments contribute to the financial distress of private government contractors while leaving SOEs unscathed, amplifying existing financial distortions

Outline

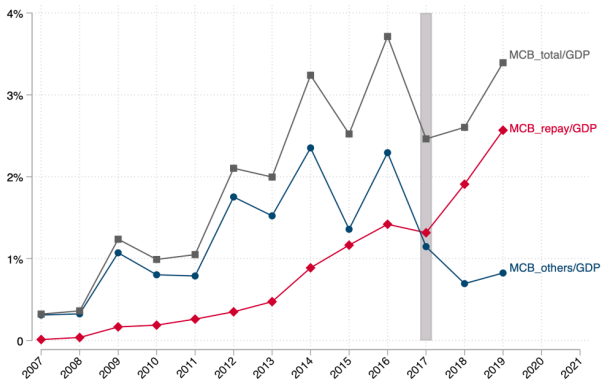
- 1 Introduction
- 2 Data and Methodology**
- 3 The Impact on Accounts Receivable
- 4 Financial Distress of Procurement Bid-winners
- 5 The Real Impact of Government Deleveraging
- 6 Conclusion

Local Government Debts in China

- **Local governments in China have greatly expanded their borrowing capacity since the 4 trillion stimulus package in 2009**
 - ▶ Several papers (e.g., Bai et al., 2016; Chen et al., 2018, 2020) on the connection between the 4 trillion yuan stimulus package and local governments' debt
 - ▶ Local governments accumulate a debt balance of 34.4 trillion yuan by 2016 (IMF estimates) and a staggering 94 trillion yuan by 2022 (Goldman Sachs estimates)
- **Local government financing vehicles (LGFVs) provide off-budget funding for various government projects and activities**
 - ▶ Data on municipal corporate bonds (MCBs) issued by LGFVs are publicly available
- **A massive top-down deleveraging campaign to contain local debts**
 - ▶ Politburo Meeting in July 2017: “Resolutely curb the increase of hidden debts”
 - ▶ President Xi Jinping stated at the National Financial Work Conference on July 14, 2017, that local party secretaries and gov. officials, who would be “held accountable for a lifetime”, should “strictly control the increases in local gov. debt”

Government Deleveraging in 2017

- **MCB issuance** dropped significantly and mainly for **repaying existing debt**
- Reduce the off-budget borrowing capacity of local governments



Data - Government procurement (GP) contracts

- 2.5 million bid-winning announcements on official websites (www.ccgp.gov.cn)
 - ▶ Machine learning algorithms to subtract procuring governments (identified from the titles) and bid-winner firms (identified using word string)
- 130 thousand (5%) matched to listed companies and their subsidiaries

▶ Geographical distribution of raw and matched contracts

新加坡第一级政府网站网络稳定性保障，国家政府采购专业网站 服务热线：400-810-1899

中国政府采购网
中国政府购买服务信息平台
www.ccgp.gov.cn

首页 政府采购 购买服务 监督检查 信息公告 GPA专栏 PPP频道

当前位置： 首页 > 政府采购 > 中标公告 > 中标公告

阳江市消防救援支队消防车辆及消防器材项目中标公告

2022年03月04日 18:03 来源：中国政府采购网 [打印] [信息公开指南]

一、项目编号：1210-2141YDZB4531 (招标文件编号：1210-2141YDZB4531)

二、项目名称：阳江市消防救援支队消防车辆及消防器材项目

三、中标（成交）信息

供应商名称：上海金盾特种车辆装备有限公司

地址：上海市浦东新区川沙路1915号

三、中标（成交）信息

供应商名称：上海金盾特种车辆装备有限公司 → Word string to identify firm names

供应商地址：中国（上海）自由贸易试验区临港新片区正阳路1515号

中标（成交）金额：270.0000000 (万元)

供应商名称：上海格拉曼国际消防装备有限公司 → Word string to identify firm names

供应商地址：上海市松江区申港路332号

中标（成交）金额：194.0000000 (万元)

供应商名称：上海格拉曼国际消防装备有限公司 → Word string to identify firm names

供应商地址：上海市松江区申港路332号

中标（成交）金额：214.0000000 (万元)

Word string to identify bid values

Matching Government Contractors with Listed Companies

Table 1: An Example of Fuzzy Matching

	Procurement Firms		Listed Firms
Original	沃森生物技术有限公司	云南沃森生物技术股份有限公司	
Segmentation	沃森生物技术 \ 有限公司	云南沃森生物技术 \ 股份有限公司	
Core Part	沃森生物技术	云南沃森生物技术	
Similarity Score	Former in Latter	Latter in Former	
83.86	1	0	

- The majority of government contractors are small- and medium-sized enterprises (SMEs); e.g., 77.3% of the GP amount was granted to SMEs in 2016
 - ▶ SMEs are smaller, more financially constrained, and more vulnerable to risks
 - ▶ Potential unmatched listed companies also bias our results downward
 - ▶ Hence, our results using the listed firm sample should be interpreted as a lower bound of the actual adverse effect

Data and Summary Statistics

- Sample: 2,013 non-financial firms listed in China's A-share stock market btw. 2014-2019, with 1,413 POEs and 600 SOEs from 17 industries and 31 provinces
 - ▶ We exclude first-time government contractors in 2017-2019 ($\approx 10\%$)
 - ▶ Among the 945 bid-winner firms, 663 are POEs and 282 are SOEs
 - ▶ Financial statement variables from CSMAR and WIND, winsorized at 1% & 99%

	N	Mean	Sd	Min	P50	Max
<i>Panel A: Firm characteristics (in 2014)</i>						
$GPfirm_i$	11744	0.472	0.499	0.000	0.000	1.000
SOE_i	11744	0.296	0.457	0.000	0.000	1.000
<i>Panel B: Dependent variables</i>						
$Receivable_t$ (asset ratio)	11744	0.118	0.105	0.000	0.093	0.480
$Payable_t$ (asset ratio)	10386	0.088	0.066	0.002	0.072	0.324
$Inventory_t$ (asset ratio)	11612	0.143	0.140	0.000	0.106	0.720
$Cash_t$ (asset ratio)	11744	0.164	0.112	0.013	0.135	0.566
ROA_t	11744	0.024	0.087	-0.487	0.031	0.191
$Pledgeratio_t$	8543	0.387	0.380	0.000	0.319	1.000
$Controlratio_t$	8579	0.317	0.142	0.049	0.298	0.704
$Stateratio_t$	11744	0.025	0.157	0.000	0.000	1.000

Difference-in-Differences (DID) Framework

$$y_{it} = \alpha + \beta GPfirm_i \times After2017_t + \delta X_{it-1} + \pi_i + \gamma_t + \epsilon_{it} \quad (1)$$

- y_{it} : dependent var. (A/R, cash, share-pledging, etc.) of firm i in year-end t
- $After2017_t$: =1 since the top-down deleveraging in 2017 and = 0 otherwise
- Treatment group ($GPfirm_i = 1$): firms that won GP bids between 2014-2016
- Local SOEs vs. private firms: subsample analysis, triple differences (DDD)
 - ▶ Control variables X_{it-1} : lagged values of firm size ($SizeL$), leverage ($LevL$), fixed asset ratio ($FixedassetL$), total revenue ratio ($RevenueL$), the annual growth rate of total revenue ($RevGrowthL$), the share ratio of top 10 major shareholders ($Top10ShareL$), and the fraction of independent directors ($IDPdirectorL$)
 - ▶ γ_i : firm F.E.; γ_t : year F.E.; province-by-year F.E. γ_{pt} and industry-by-year F.E. γ_{dt}
 - ▶ Standard errors are clustered at the firm level

Outline

- 1 Introduction
- 2 Data and Methodology
- 3 The Impact on Accounts Receivable**
- 4 Financial Distress of Procurement Bid-winners
- 5 The Real Impact of Government Deleveraging
- 6 Conclusion

A/R Increases among Government Contractors

- Compared to non-contractors, GP firms experience increases in A/R amounts and collection time, implying an intensified usage by their clients

<i>Dependent var.</i>	Accounts Receivable (divided by assets)				A/R (by revenue)	A/R Turnover (days)
	(1)	(2)	(3)	(4)	(5)	(6)
GPfirm × Post2017	0.007*** (0.002)	0.007*** (0.002)	0.006*** (0.002)	0.006** (0.002)	0.015** (0.007)	5.744** (2.493)
Controls		YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES				
Province-by-Year FE			YES	YES	YES	YES
Industry-by-Year FE				YES	YES	YES
Mean of depvar.	0.118	0.118	0.118	0.118	0.265	97.08
Observations	11,735	11,735	11,735	11,735	11,734	11,696
Adjusted R-squared	0.841	0.846	0.849	0.852	0.783	0.784

Selective Payment Delays? Subsample Analysis

- Private GP firms experience significant increases in A/R after 2017 compared to their non-GP counterparts; no such impacts among SOEs

<i>Dependent var.</i>	Accounts Receivable (divided by assets)				A/R (by revenue)	A/R Turnover (days)
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: POE Subsample</i>						
GPfirm × Post2017	0.009*** (0.003)	0.009*** (0.003)	0.008*** (0.003)	0.008*** (0.003)	0.016* (0.008)	6.400** (3.086)
Mean of depvar.	0.135	0.135	0.135	0.135	0.307	112.4
Observations	8261	8261	8261	8261	8260	8230
Adjusted R-squared	0.816	0.821	0.826	0.830	0.769	0.770
<i>Panel B: SOE Subsample</i>						
GPfirm × Post2017	0.002 (0.003)	0.003 (0.003)	0.001 (0.003)	0.002 (0.003)	0.011 (0.010)	3.933 (3.773)
Mean of depvar.	0.0783	0.0783	0.0783	0.0783	0.166	60.68
Observations	3474	3474	3468	3466	3466	3458
Adjusted R-squared	0.880	0.886	0.886	0.887	0.790	0.790
<i>Both Panels:</i>						
Controls		YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES				
Province-by-Year FE			YES	YES	YES	YES
Industry-by-Year FE				YES	YES	YES

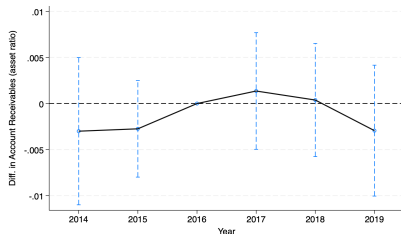
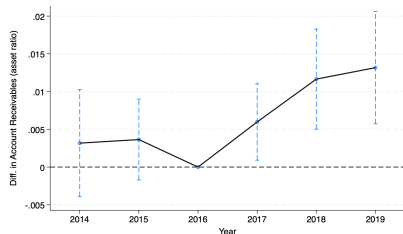
Dynamic DID and Pre-Trend Analysis

$$y_{it} = \alpha + \delta_1 GPfirm_i \times Year2014_t + \delta_2 GPfirm_i \times Year2015_t + \delta_3 GPfirm_i \times Year2017_t + \delta_4 GPfirm_i \times Year2018_t + \delta_5 GPfirm_i \times Year2019_t + \beta X_{it-1} + \pi_i + \gamma_t + \epsilon_{it}$$

- Significant A/R increases among private gov. contractors relative to non-contractors since 2017; no significant impact on SOEs

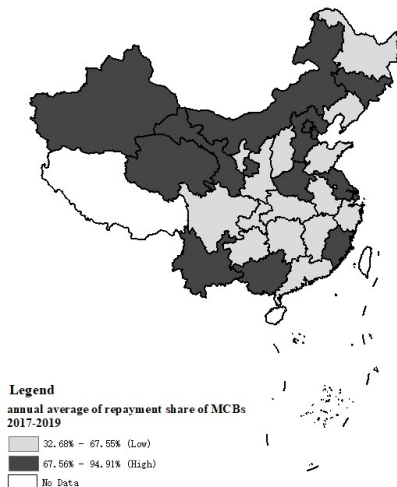
▶ Placebo tests

- ▶ 2016 as the base year; 95% confidence intervals



Mechanism: Local Governments' Borrowing Capacity

- We expect more pronounced effects in provinces more adversely affected by the deleveraging policy, proxied by local gov's **debt rollover pressure** (i.e., the fraction of newly issued MCBs for repaying existing debts)
 - ▶ We use MCB issuance to infer local gov's overall debt financing
 - ▶ The deleveraging policy emphasizes the containment of local gov. debts regardless of the financing sources
 - ▶ LGFVs may increase bank loans to compensate but are still constrained



Mechanism: Local Governments' Borrowing Capacity

- Private GP firms experience larger increases in A/R than their non-GP counterparts if in **high-debt-repayment-ratio provinces** [▶ More](#)

<i>Dependent var.</i>	Accounts Receivable (divided by assets)			A/R (by revenue)			A/R Turnover (days)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	POE	SOE	All	POE	SOE	All	POE	SOE
GPfirm × Post2017 × Repay_high	0.009* (0.005)	0.017*** (0.006)	-0.005 (0.006)	0.023* (0.013)	0.041** (0.017)	-0.016 (0.019)	8.912* (4.827)	15.376** (6.194)	-5.547 (6.825)
GPfirm × Post2017	0.003 (0.003)	0.002 (0.004)	0.005 (0.005)	0.005 (0.009)	-0.000 (0.011)	0.020 (0.014)	1.947 (3.334)	0.145 (4.122)	7.004 (5.065)
GPfirm × Repay_high	-0.027 (0.071)	-0.030 (0.071)		-0.209 (0.189)	-0.262 (0.180)		-92.489 (69.730)	-105.411 (64.955)	
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean of depvar.	0.118	0.135	0.0783	0.265	0.307	0.166	97.08	112.4	60.68
Observations	11556	8132	3413	11555	8131	3413	11525	8109	3405
Adjusted R-squared	0.853	0.832	0.888	0.786	0.771	0.791	0.786	0.772	0.791

Outline

- 1 Introduction
- 2 Data and Methodology
- 3 The Impact on Accounts Receivable
- 4 Financial Distress of Procurement Bid-winners**
- 5 The Real Impact of Government Deleveraging
- 6 Conclusion

Divergence in Corporate Cash Holdings

- Private (state-owned) GP firms reduce (accumulate) cash buffers
 - ▶ Private GP firms experience larger decreases in cash buffers
 - ▶ A/R increases nearly one-to-one crowd out cash holding
 - ▶ Private GP firms may have already negotiated favorable terms with suppliers and hence have less room to further pass down liquidity shocks

<i>Dependent var.</i>	Accounts Payable (divided by assets)			Inventory (divided by assets)			Cash (divided by assets)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	POE	SOE	All	POE	SOE	All	POE	SOE
GPfirm × Post2017	0.001 (0.002)	0.001 (0.002)	0.001 (0.003)	-0.005 (0.003)	-0.006 (0.004)	-0.007 (0.005)	-0.002 (0.004)	-0.009* (0.005)	0.016** (0.006)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean of depvar.	0.0877	0.0851	0.0937	0.143	0.138	0.154	0.164	0.166	0.160
Observations	10376	7288	3077	11601	8141	3452	11735	8261	3466
Adjusted R-squared	0.808	0.797	0.834	0.867	0.834	0.921	0.582	0.550	0.688

Difficulties in External Financing

- Controlling shareholders of private GP firms are more likely to pledge their shares, consistent with the hypothesis that GP firms have to resort to riskier, non-standard funding channels to raise funds

<i>Dependent var.</i>	Bank loans (divided by assets)			Bond issuance (divided by assets)			Share pledging (divided by assets)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	POE	SOE	All	POE	SOE	All	POE	SOE
GPfirm × Post2017	-0.005 (0.027)	0.023 (0.031)	-0.107* (0.058)	0.020*** (0.008)	0.020 (0.014)	0.024** (0.012)	0.036*** (0.013)	0.062*** (0.016)	-0.028* (0.016)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean of depvar.	0.623	0.625	0.619	0.0729	0.0724	0.0735	0.387	0.480	0.125
Observations	7686	5604	2074	1113	467	566	8537	6291	2226
Adjusted R-squared	0.596	0.575	0.636	0.377	0.367	0.349	0.745	0.701	0.695

Financial Leverage

- Private GP firms experience an increase in current liabilities over total assets, implying a deterioration in short-term leverage

<i>Dependent var.</i>	Total Liabilities (divided by assets)			Current Liabilities (divided by assets)			Noncurrent Liabilities (divided by assets)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	POE	SOE	All	POE	SOE	All	POE	SOE
GPfirm × Post2017	-0.012 (0.017)	-0.018 (0.025)	0.010 (0.007)	0.010* (0.006)	0.013* (0.007)	-0.002 (0.011)	-0.011* (0.006)	-0.015** (0.007)	0.002 (0.011)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean of depvar.	0.449	0.425	0.508	0.814	0.834	0.768	0.188	0.168	0.233
Observations	11735	8261	3466	11735	8261	3466	11597	8138	3450
Adjusted R-squared	0.791	0.790	0.820	0.614	0.544	0.708	0.613	0.543	0.709

Outline

- 1 Introduction
- 2 Data and Methodology
- 3 The Impact on Accounts Receivable
- 4 Financial Distress of Procurement Bid-winners
- 5 The Real Impact of Government Deleveraging**
- 6 Conclusion

Firm Profitability and Performance

- Have local governments compensated private contractors in other forms?
 - ▶ To promote sales and future profitability, firms may willingly accept more A/R
 - ▶ If this is the case, we should expect the relative increases in the accounts receivable of private GP firms to be associated with increases in sales and profitability
- However, we find this alternative hypothesis unlikely to be true
 - ▶ An increase in accounts receivable after 2017 reduces firms' profitability

<i>Dependent var.</i>	ROA			ROE			Gross profit ratio		
	(1) All	(2) POE	(3) SOE	(4) All	(5) POE	(6) SOE	(7) All	(8) POE	(9) SOE
GPfirm × Post2017	-0.003* (0.001)	-0.003* (0.002)	-0.003 (0.003)	-0.007** (0.003)	-0.008** (0.004)	-0.005 (0.006)	-0.006 (0.004)	-0.009** (0.005)	0.000 (0.007)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry-by-Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Mean of depvar.	0.0381	0.0408	0.0318	0.0720	0.0735	0.0683	0.293	0.312	0.248
Observations	11735	8261	3466	11735	8261	3466	11730	8256	3466
Adjusted R-squared	0.563	0.556	0.585	0.407	0.403	0.437	0.836	0.833	0.848

Changes in Ownership Structure

- Higher probabilities of ownership changes among private contractors
 - ▶ A reduction in controlling shareholders' share ratio and an increase in stated-owned share ratio; again, no such impact on SOE contractors

<i>Dependent var.</i>	Controlling shareholders (Share ratio)			State-owned (Share ratio)		
	(1) All	(2) POE	(3) SOE	(4) All	(5) POE	(6) SOE
GPfirm × Post2017	-0.005 (0.003)	-0.012*** (0.003)	0.013 (0.008)	0.053 (0.243)	0.374** (0.175)	-1.062 (0.723)
Firm FE	YES	YES	YES	YES	YES	YES
Province-by-Year FE	YES	YES	YES	YES	YES	YES
Industry-by-Year FE	YES	YES	YES	YES	YES	YES
Mean of depvar.	0.317	0.300	0.366	8.414	2.072	23.48
Observations	8573	6322	2231	11735	8261	3466
Adjusted R-squared	0.901	0.894	0.913	0.951	0.687	0.956

Nationalization of Private Contractors

- Orient Landscape, once known as the “No. 1 Chinese garden enterprise stock,” became cash-strapped after expansion in public-private partnership (PPP) projects, which incurred upfront investments but were slow in gov payments

Beijing Pays USD113 Million for Control of Leading Garden Contractor

LIAO SHUMIN 

DATE: AUG 07 2019 / SOURCE: YICAI



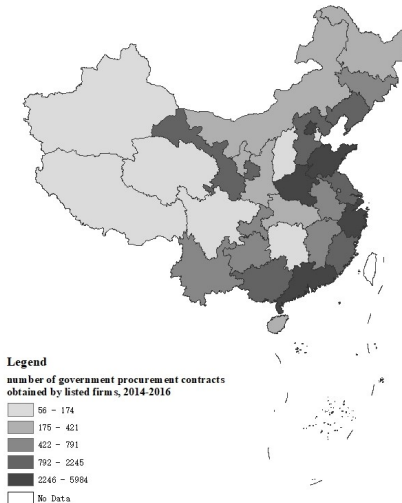
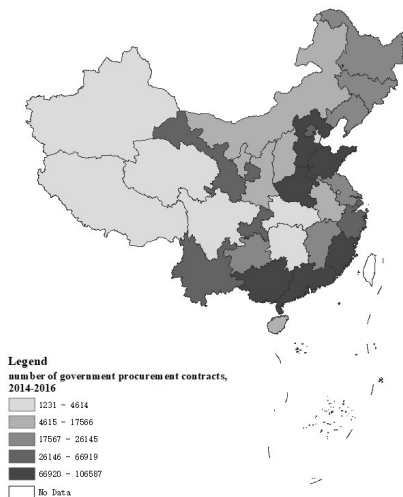
Outline

- 1 Introduction
- 2 Data and Methodology
- 3 The Impact on Accounts Receivable
- 4 Financial Distress of Procurement Bid-winners
- 5 The Real Impact of Government Deleveraging
- 6 Conclusion

Takeaways

- **We investigate the unintended consequences of gov. deleveraging**
 - ▶ A data set combining GP contracts and listed firms in China in 2014-2019
 - ▶ Our DID strategy exploits the massive deleveraging policy in 2017 and firms' pre-existing business relationships with local governments
- **Business connections with the government sour into heavy burdens on private firms when the government becomes financially constrained**
 - ▶ Private GP firms experience larger A/R \uparrow , cash \downarrow , profitability \downarrow , share pledging \uparrow , and probabilities of ownership changes \uparrow
 - ▶ More pronounced in provinces with more reduction in off-budget financing capacity
 - ▶ The effects are muted on SOE firms, implying that financially constrained local governments selectively delay payments to less politically resourceful firms
- **We underscore the complexity of containing local government debts**
 - ▶ Government deleveraging reduces explicit debt but increases payment delays to private contractors, exacerbates existing financial distortions
 - ▶ General implications as governments worldwide have become increasingly indebted

Geographical Distribution of Raw and Matched Contracts



▶ Back

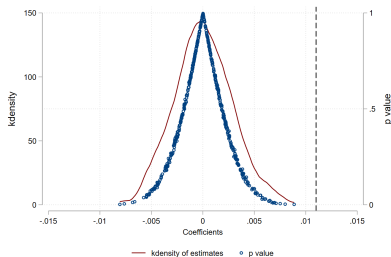
Government Dependence and Relationship Age

- Firms with higher gov. A/R between 2014-2016 experienced larger increases in total A/R ratio after the government deleveraging
- Within government contracts, longer relationship age with local governments (*GPAGE*) helps to alleviate payment delays [▶ Back](#)

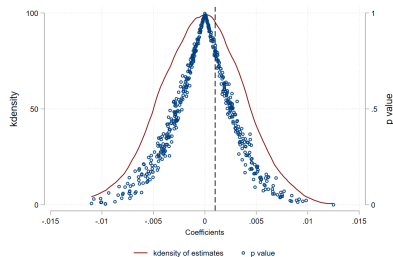
<i>Dependent var.</i>	Accounts Receivable (divided by assets)					
	(1) All	(2) POE	(3) SOE	(4) All	(5) POE	(6) SOE
GovAR_high × Post2017	0.018** (0.008)	0.023** (0.011)	0.007 (0.010)			
GPAGE_high × Post2017				-0.007* (0.004)	-0.009* (0.005)	0.000 (0.005)
Controls	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Province-by-Year FE	YES	YES	YES	YES	YES	YES
Industry-by-Year FE	YES	YES	YES	YES	YES	YES
Mean of depvar.	0.118	0.135	0.0783	0.118	0.135	0.0783
Observations	2002	1201	743	4693	3256	1426
Adjusted R-squared	0.850	0.840	0.873	0.874	0.849	0.923

Placebo Tests: Random Draws of the Treatment Group

- We keep the composition ratio unchanged and randomly draw fake GP firms
 - ▶ Regression results of placebo tests with the kernel density (red line) of the regression coefficients and the corresponding p-values (blue circles) for the key variable ($GPfirm_i^R \times After2017_t$)
 - ▶ We repeat random sampling and run regressions 500 times



(a) Placebo test - POE



(b) Placebo test - SOE

▶ Back