

Super Debt Cities

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Background

- ▶ During the global financial crisis, the Chinese government instructed the big four government-owned banks to expand lending (Deng, Morck, Wu and Yeung, 2014).
- ▶ This lending boom primarily went to local governments and SOEs. Local government debt almost quadrupled between 2006 and 2013 (Huang, Pagano, Panizza, 2016)
- ▶ Local government financing relies on the land market:
 - ▶ 1/3 of the debts of local governments explicitly pledge future land sales revenue for debt repayment.
 - ▶ Land parcels most widely-used collateral for local government debt (National Audit Office; Ambrose, Deng, Wu, 2015)

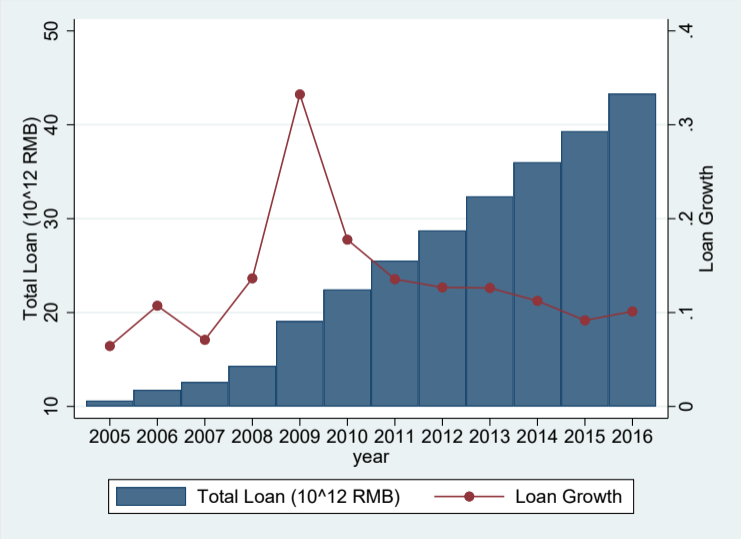
Our story

- ▶ Big Four lending boom contributed significantly to the house-price boom across Chinese cities.
- ▶ Local governments with better political connections to the central government could borrow more.
- ▶ Politically connected local govs could pledge land as collateral at inflated valuations.
- ▶ The ability to pledge land at valuations above the local market price provided a strong incentive to cut supply of land to the market, in particular of residential land.
- ▶ This drove up prices for residential land and housing in many lower-tier cities with ample land supply.

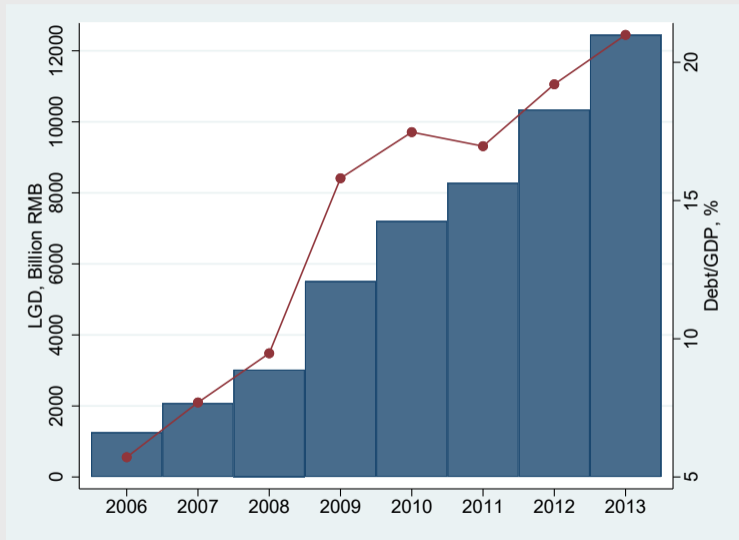
Related Literature

- ▶ **China's housing boom**
 - ▶ Fang et al. (2015); Wu et al. (2016); Glaeser et al. (2016); Wu et al. (2012)...
- ▶ **Local Government Debt**
 - ▶ Deng, Morck, Wu and Yeung(2014); Hsieh and Song (2016); Wang, Wang, Wang, and Zhou (2016) ; Brunnermeier and Wei (2016); Chen, He and Liu(2016).....
- ▶ **Capital misallocation and credit markets**
 - ▶ Credit Rationing channel (Huang, Pagano and Panizza, 2016; Cong and Ponticelli, 2016).
- ▶ **Political Connection and Financing**
 - ▶ Cohen et al. (2011); Bai, Hsieh, and Song(2016); Ru Hong(2017).

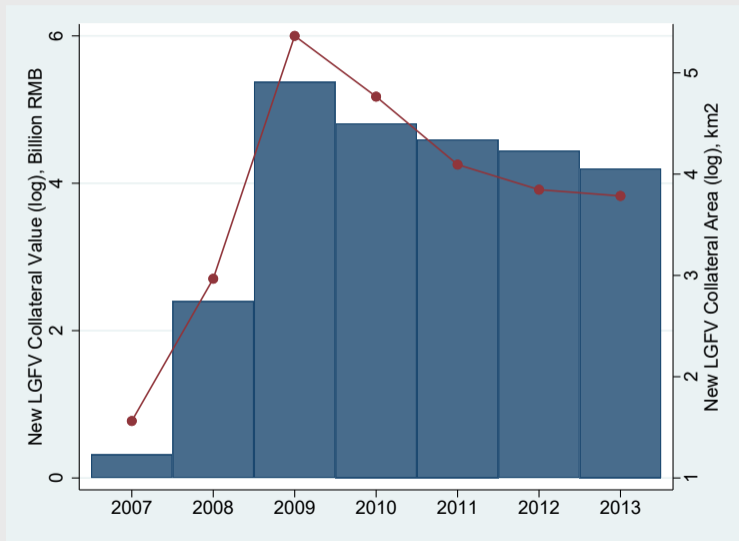
China's Lending Boom: the Big 4 Banks, ...



..the rise of Local Government Debt (LGD)



..and the rise of land as collateral for LGD



Research Design

- ▶ Identification

We exploit variation across cities in the degree of political connections to the central government.

- ▶ Hypothesis & Mechanism

Cities with strong political connections benefited more from the lending boom
They could borrow more, posting land as collateral at inflated valuations
This way of raising government debt provided a strong incentive to cut supply of residential land to the market, increasing residential land prices and housing values.

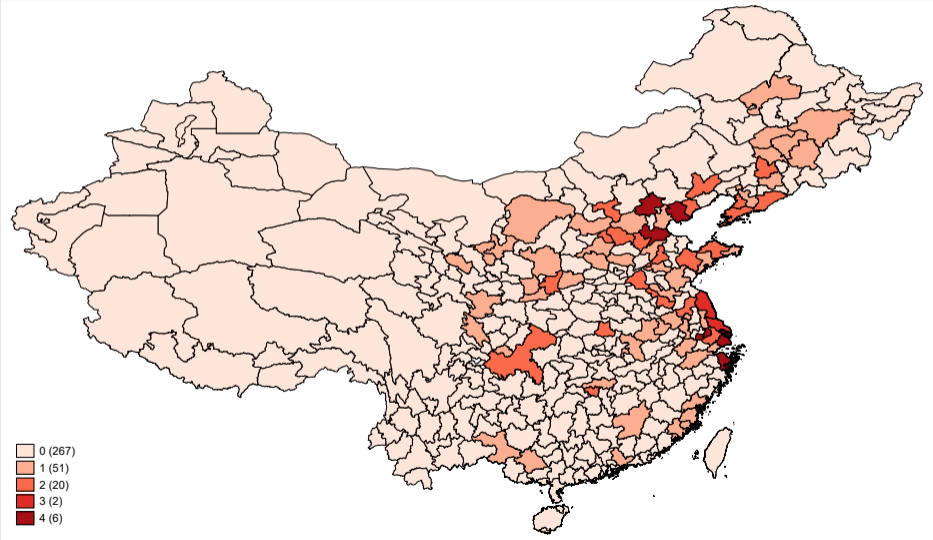
- ▶ Data

We document our findings based on city-level data and based on a unique transaction-level data set on land collateralization and land sales.

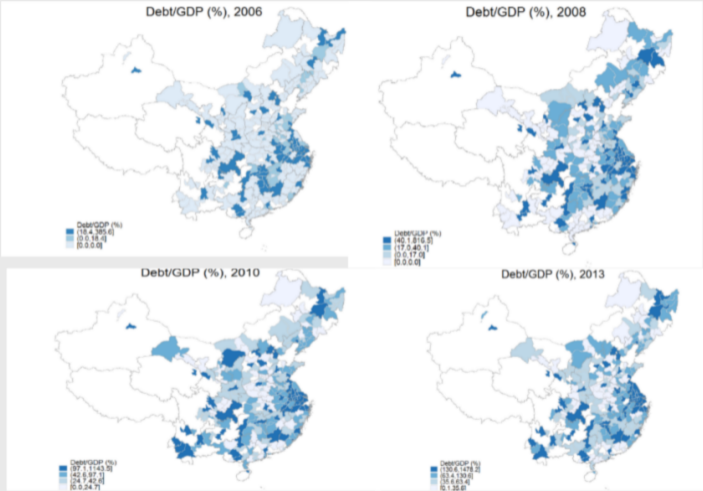
Data Sources

- ▶ City level macro variables: Urban statistical yearbook of China, China land and resources statistical yearbook
- ▶ Loan growth: CRSC (Gao et al., 2018)
- ▶ Political connection_{*i*}: number of national, ministry, other leaders in central government that were born or native from city *i*.
- ▶ Land transactions: www.landchina.com (Chen and Kung, 2018)

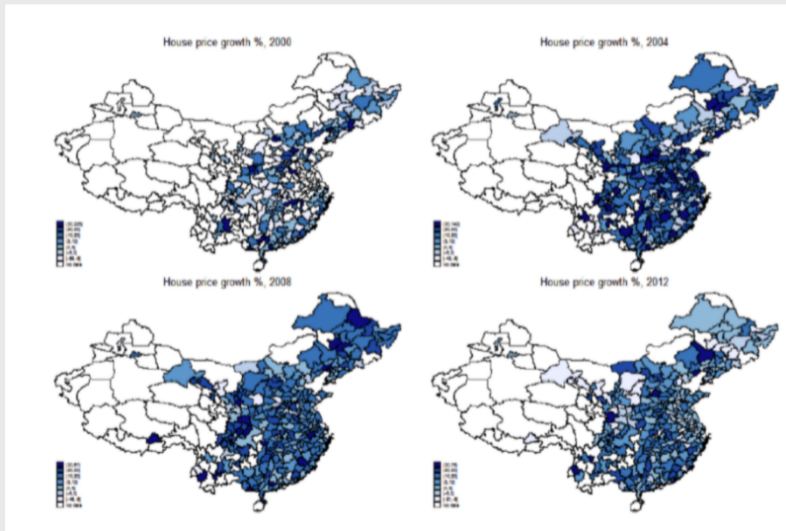
Strength of city-level political connections in 2008



The Rise of Local Government Debt



... and of house prices



Empirical framework

City-level results based on a double Diff-in-Diff (DDD) strategy:

$$Outcome_t^c = \alpha \times PC_{2008}^c \times LG_t^{Big4} + \beta' X_t^c + city + province \times year \quad (1)$$

where

PC_{2008}^c : city-level political connections in 2008

LG_t^{Big4} : country-wide Loan Growth of the Big 4 Banks

X_t^c : vector of city-time varying controls (GDP, income, population growth)

$Outcome_t^c$: city-level outcomes (lending growth, LGD, land prices etc.)

We estimate (2) using OLS, clustering s.e. at province and year level.

Political connected cities saw larger growth in lending to LGFVs and LGD

	(1)	(2)	(3)	(4)
	LGFV or SOE	LGFV	Private	DEBT2GDP
$PC_{2008}^c \times LG_t^{Big4}$	0.381** (0.109)	0.328* (0.121)	-0.0260 (0.0608)	2.164** (0.492)
Observations	1,234	1,204	1,242	1,242
R-squared	0.558	0.654	0.386	0.731
City-time controls	YES	YES	YES	YES
City FE	YES	YES	YES	YES
Prov*Year FE	YES	YES	YES	YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Politically connected cities saw drop in residential land sales to non-LGFVs and prices rose

	(1)	(2)	(3)	(4)
	Area share	RSD price	IND price	COM price
$PC_{2008}^c \times LG_t^{Big4}$	-0.0423** (0.0165)	0.638** (0.223)	0.0408 (0.128)	-0.127 (0.148)
Observations	1,877	1,655	1,651	1,563
R-squared	0.473	0.283	0.325	0.213
City-time controls	YES	YES	YES	YES
City FE	YES	YES	YES	YES
Prov*Year FE	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1

City-level House Price Growth: IV evidence

	IV	
	1st Stage	2nd Stage
Dependent variable:	LGFV-Collateralized Area	HP growth
LGFV-Collateralized Area		0.124*** (0.0170)
$PC_{2008}^c \times LG_t^{Big4}$	1.605* (0.674)	
Observations	500	500
Centered R-squared	0.268	-0.173
City FE	YES	YES
Prov*Year FE	YES	YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

... and it's not the demand side:

Table 4: Demand

	(1)	(2)	(3)	(4)
	GDP	Consumption	Employment	Income
$PC_{2008}^c \times LG_t^{Big4}$	0.0152 (0.00786)	-0.0500* (0.0190)	-0.00331 (0.0248)	-0.000549 (0.0179)
Observations	1,373	1,349	1,334	1,334
R-squared	0.668	0.491	0.394	0.341
City FE	YES	YES	YES	YES
Prov*Year FE	YES	YES	YES	YES

Robust standard errors in parentheses

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Transaction-level regressions

Use transaction level data to run regressions of the form

$$Outcome_t^d = \alpha \times LGFV^d \times PC^c(d)_{2008} \times LG_t^{Big4} + city \times year + \dots \quad (2)$$

where

$Outcome_t^d$: transaction (deal) -level outcome (collateral valuation area, purchase price area)

$PC^c(d)_{2008}$: city-level political connections in 2008

LG_t^{Big4} : country-wide Loan Growth of the Big 4 Banks

LGFVs collateralize at higher valuations and buy at lower prices...

	(1)	(2)	(3)	(4)
	Collateral Valuation	Collateralized area	Purchase Price	Purchase Area
$PC^{c(d)} \times LG_t^{Big4} \times LGFV^d$	0.273** (0.114)	-0.000219 (0.00475)	-0.397* (0.216)	0.223 (0.289)
$LGFV^d$	0.0895 (0.0543)	0.0201*** (0.00258)	0.210*** (0.0634)	0.722*** (0.0771)
Observations	89,577	95,583	618,221	618,221
R-squared	0.622	0.127	0.523	0.733
City*Year FE	YES	YES	YES	YES
Usage FE	YES	YES	YES	YES
Borrower type FE	YES	YES		
Buyer type FE			YES	YES
Industry FE			YES	YES
Land Level FE			YES	YES
Supply Method FE			YES	YES

Robust standard errors in parentheses

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Conclusion

- ▶ Based on city- and transaction-level data, we identify an important new mechanism behind the Chinese house prices boom after 2009.
- ▶ Cities with strong political connections benefited more from the post-2009 lending boom, saw stronger increases in lending to LGFVs and in local government debt. They also experienced higher increases in residential land prices.
- ▶ LGFVs in political connected cities could borrow more because they could post land as collateral at higher valuations (relative to market price),.
- ▶ This provided local governments with the incentive to reduce the supply of land use rights (in particular for residential land) to the market, laying the foundations for the housing boom.

Policy implications

- ▶ The mechanisms that post-2009 house price increases at least partly reflect a misallocation of capital
- ▶ Mechanism can explain why house price boom affected lower tier cities so strongly
- ▶ Given the importance of land prices for private firms' access to credit as well as for household finance in China, our results could have important implications for financial stability.