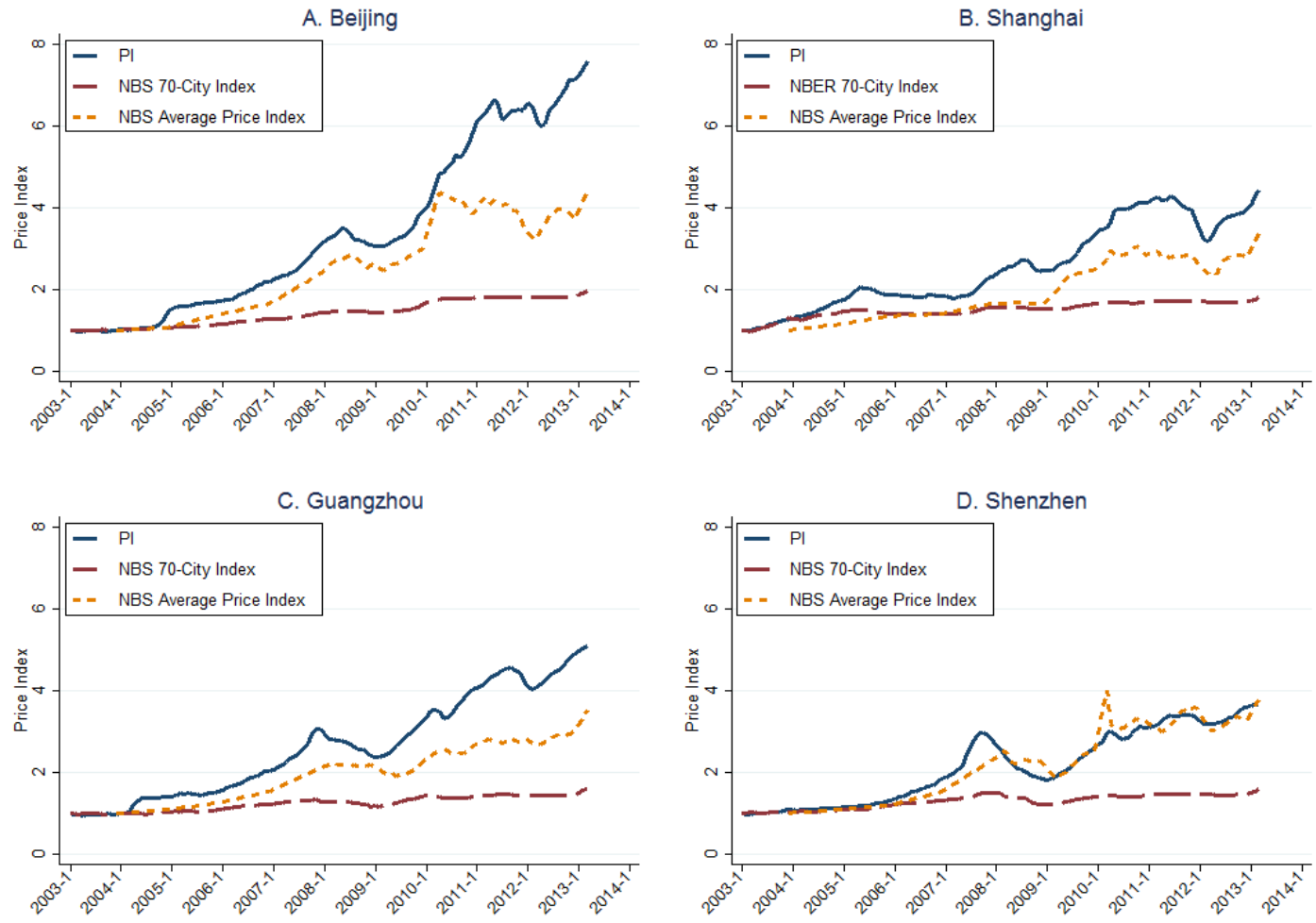
Real Estate Boom and Misallocation of Capital in China

Ting Chen, Princeton & CUHK Shenzhen
Laura Xiaolei Liu, Peking University
Wei Xiong, Princeton & CUHK Shenzhen
Li-An Zhou, Peking University

December 2017

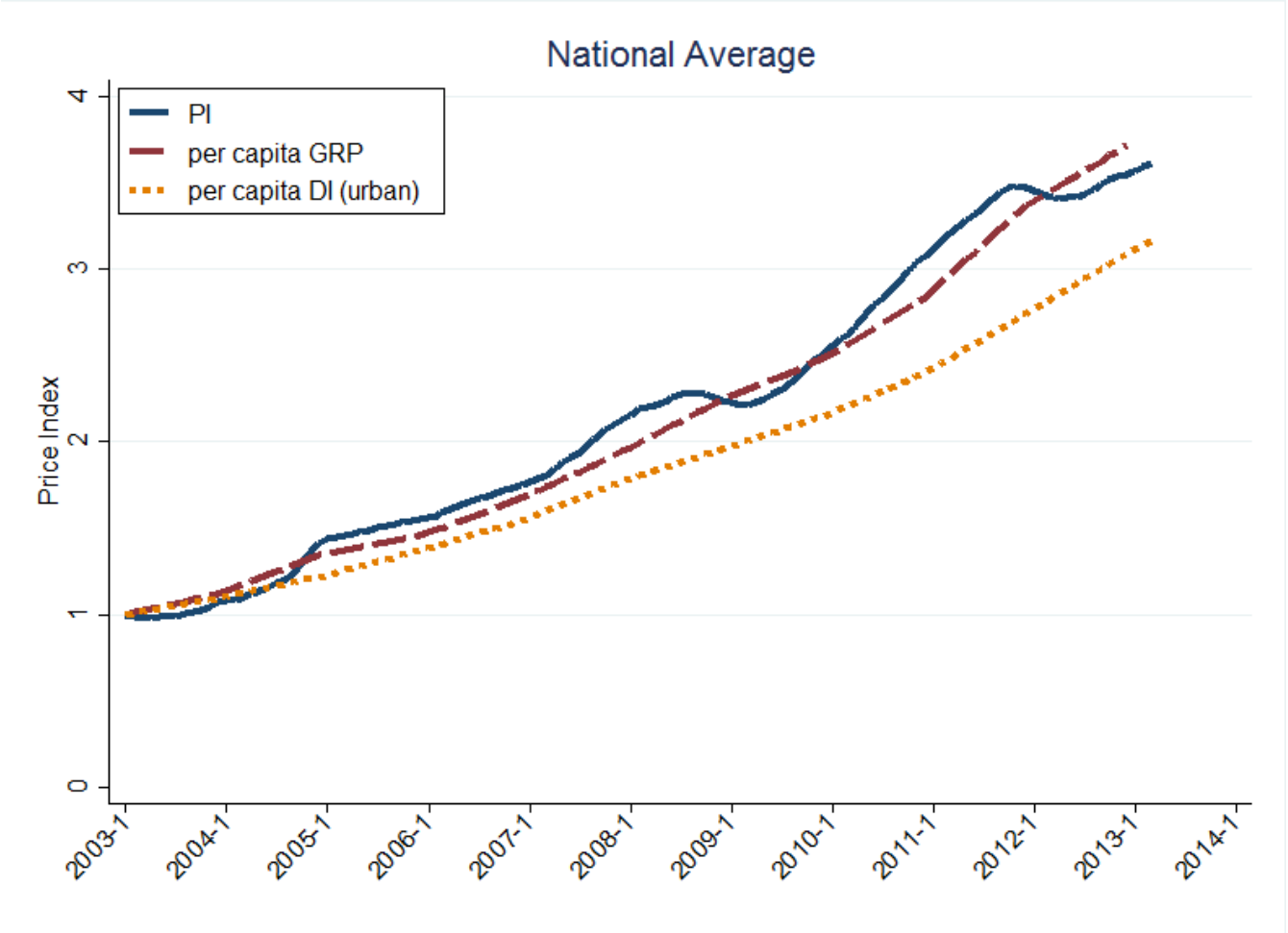
Real Estate Boom in China

- Residential housing price indices for tier-1 cities
  - Fang, Gu, Xiong, Zhou (2015)

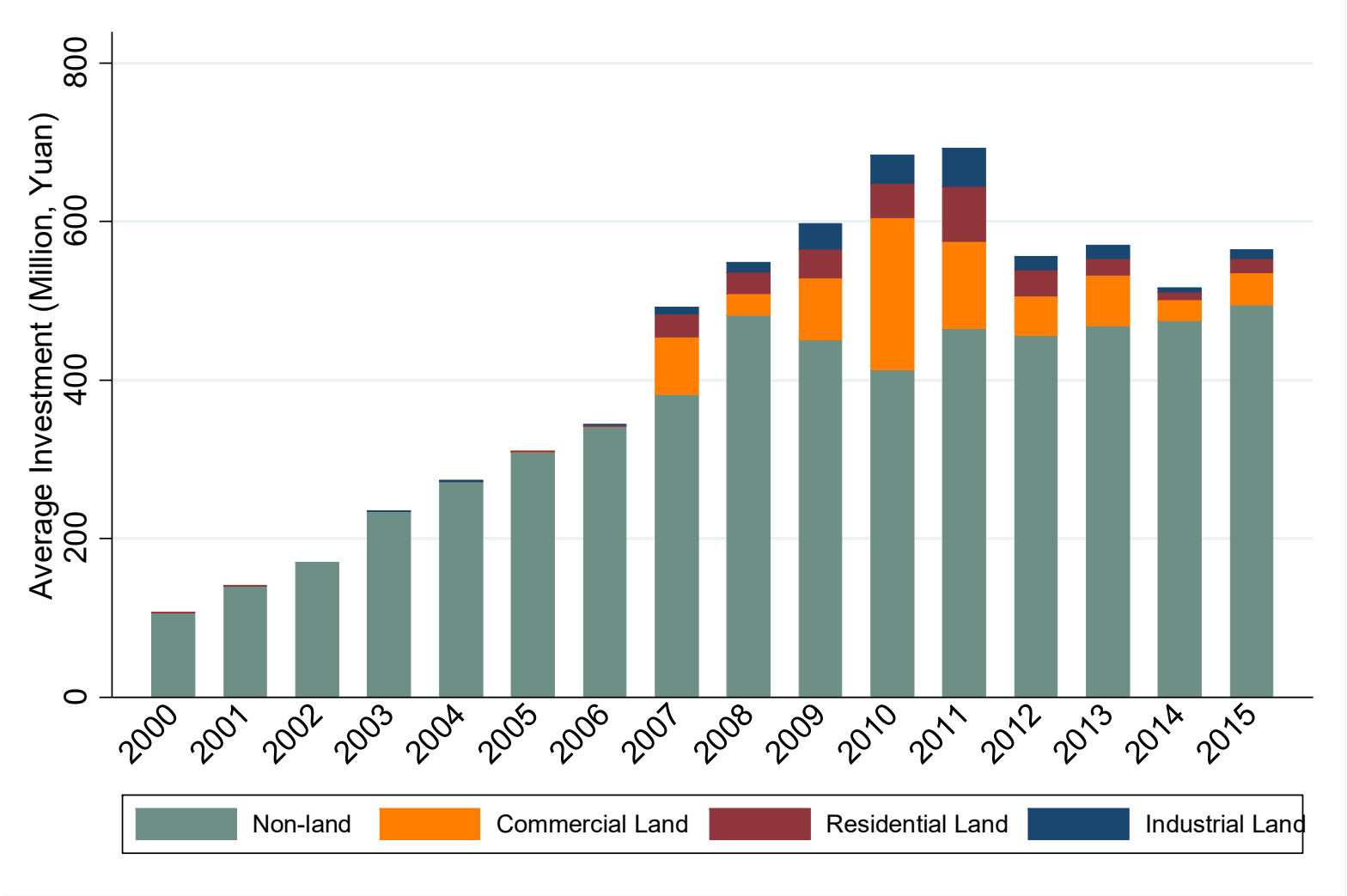


Real Estate Boom in China

- Residential housing price indices for 120 cities
  - Fang, Gu, Xiong, Zhou (2015)



Investment of Publicly Listed Firms



Research Questions

Real estate fluctuations have important implications for long-run growth and business cycles, e.g., Liu, Wang & Zha (2012), Mian & Sufi (2014), Kaplan, Mitman, & Violante (2017)

A real estate boom relaxes financial constraints, e.g., Gan (2007), Channey, Sarer & Thesmar (2003), and stimulates entrepreneurship, e.g., Hurst & Lusardi (2004), Schmalz, Sraer & Thesmar (2015), Kerr, Kerr & Nanda (2015)

A real estate boom may also affect labor choice, e.g., Charles, Hurst & Notowidigdo (2015)

How does China's real estate boom affect capital allocation across firms?

- How does the real estate boom affect firm investment in China?
- How do banks allocate credit in response to the boom?

The spectacular price boom and substantial variation across China offer an opportunity to examine these questions

Road Map

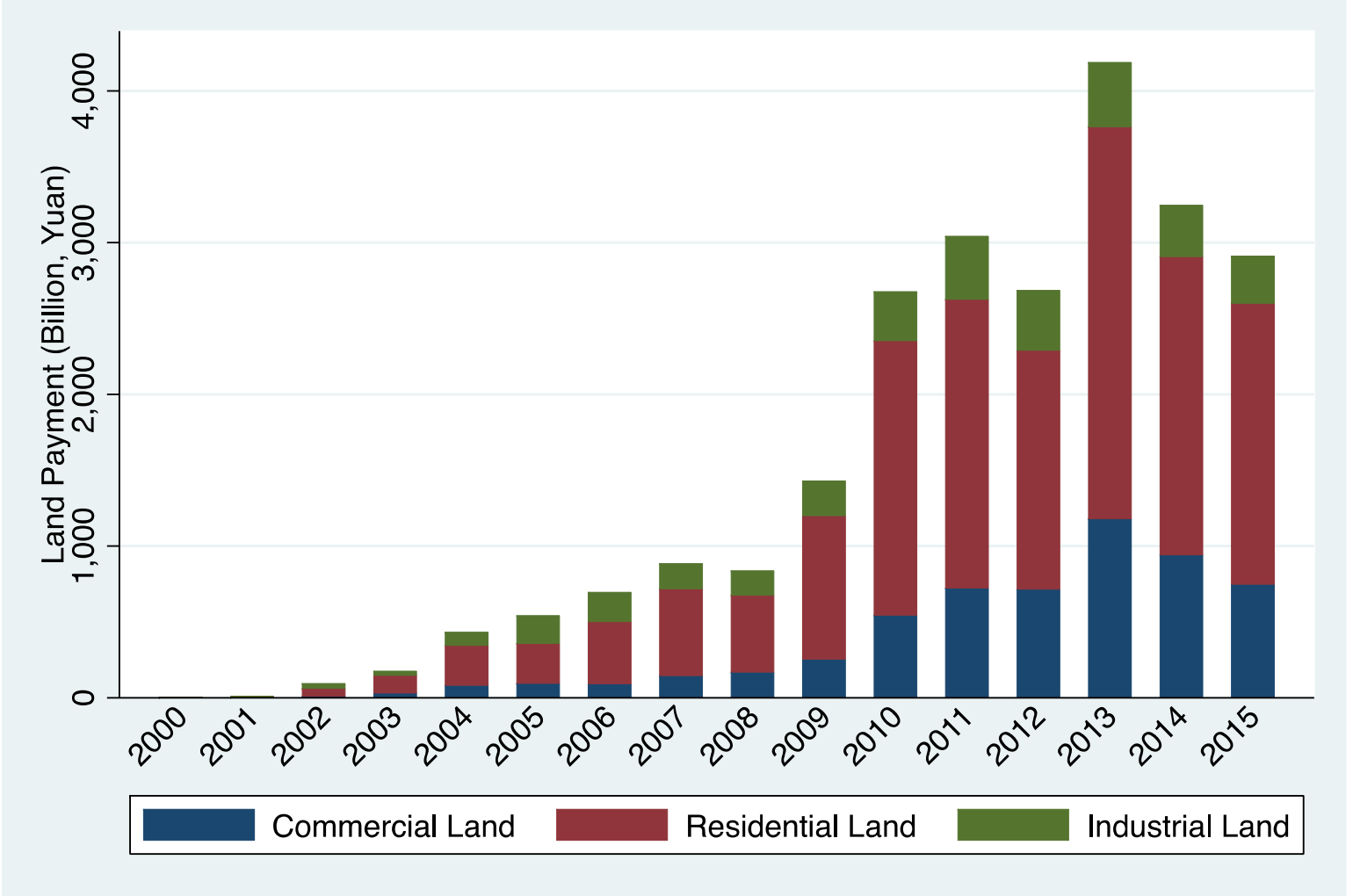
- Institutional background and data description
- Effect of real estate boom on efficiency of resource allocation
  - A quasi-policy experiment
- Analysis on three channels

Land Purchase in China

- Since the real estate reform in 1990s, local governments routinely sold land (lease holds) in the primary land market
  - The size of the secondary land market (where sellers are not local governments) is relative small

- Rigid zoning restrictions
  - Industrial land designated for industrial and manufacturing facilities
  - Commercial land for commercial and business facilities
  - Residential land for residential facilities
  - Difficult to change the category after initially set by government
  - Manufacturing firms cannot use commercial land and residential land for production purposes

Size of Primary Land Market in China



Land Transaction Data

- All land transactions in 2000-2015, 1.65 million transactions in 295 cities
  - Hand collected from Ministry of Land and Resources
  - Land buyer, land area, total payment, land usage, location, and transaction price

- We merge the transactions with all publicly listed firms by firm names (including subsidiaries)
  - Delete finance, insurance, real estate, construction, and mining industries
  - 38,213 land transactions by 2,174 publicly listed firms
  - 2,054,506,896 square meters, and total payment 2341.2 billion RMB, 14.76% of all transactions

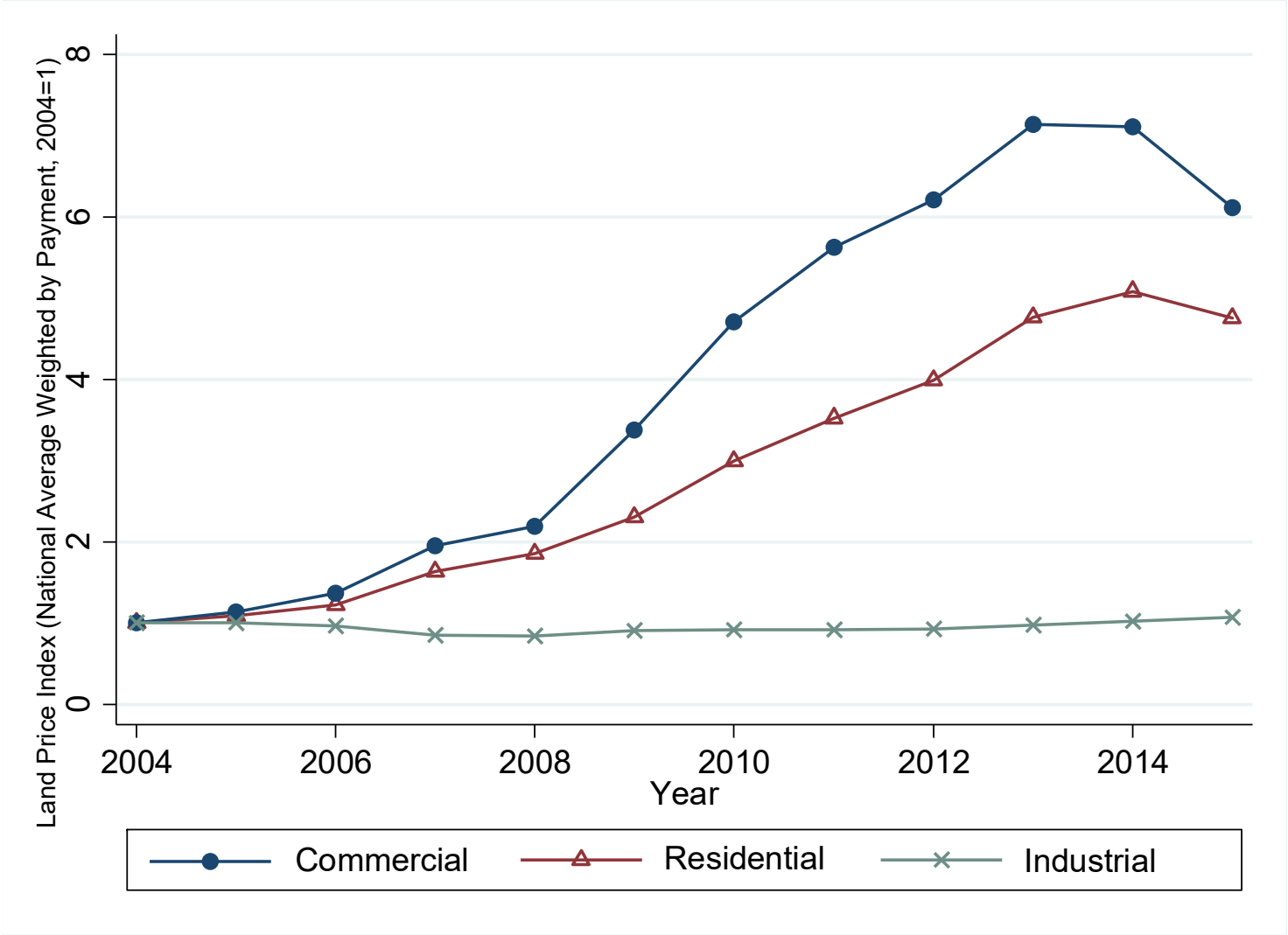
Land Price Indices

- We adopt the hedonic price regression approach, e.g., Deng, Gyourko and Wu (2012):

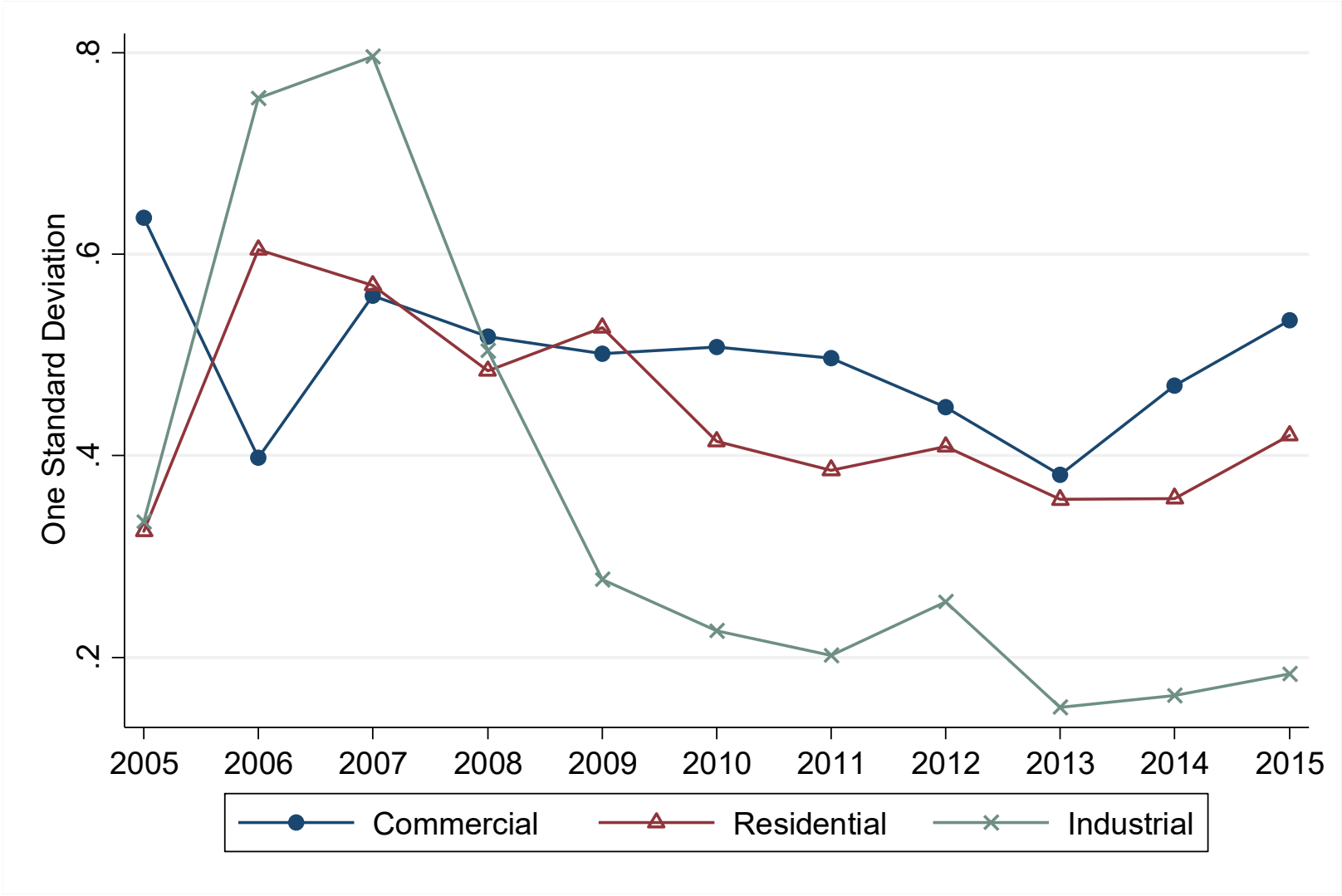
$$-\ lnP_{i,k,c,t} = \beta_{k,c,0} + \sum_{s=1}^{T} \beta_{k,c,s} \cdot 1_{s=t} + \theta_{k,c} X_i + \varepsilon_{i,t},$$

1. Street ID dummy (9-digit administrative unit)
2. Size of the land parcel
3. Subcategories of land usage (54 types, e.g. public housing)
4. Method of transaction (an indicator for transaction through listing bidding or English auction, and invited bidding and bilateral agreement excluded)
5. A subjective evaluation of land quality (11 ranks)

National Land Prices



Cross-City Land Price Variation



Land Prices across Cities

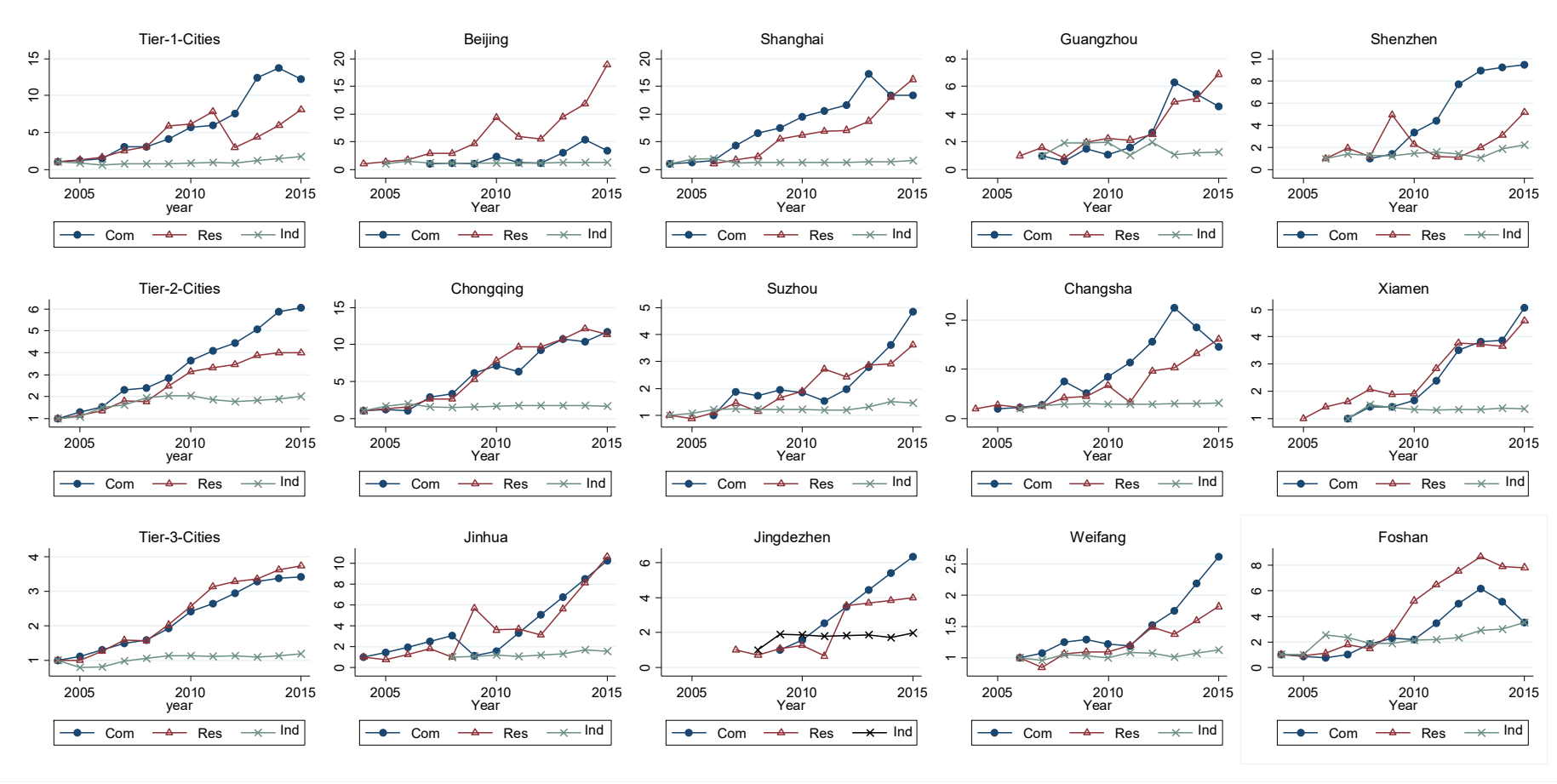


Table 1. The Summary Statistics and Correlation Matrix of Land Price Index Change

Panel A	Commercial Land Price Growth Rate	Residential Land Price Growth Rate	Industrial Land Price Growth Rate	Wu's Land Price Index Growth Rate
Commercial Land Price Change	1			
Residential Land Price Change	0.4066	1		
Industrial Land Price Change	-0.2043	0.0133	1	
Wu's Land Price Index Change	0.3373	0.4065	-0.1788	1

Panel B	N	Mean	Std. Dev.	P10	Median	P90
Commercial Land Price Change	2,228	13.63%	44.22%	-28.70%	12.64%	56.94%
Residential Land Price Change	2,102	10.46%	49.03%	-36.83%	11.34%	58.61%
Industrial Land Price Change	1,818	1.74%	26.49%	-16.43%	2.10%	21.31%

Real Estate Boom and Efficiency of Resource Allocation

- Follow Hsieh and Klenow (2009) to measure TFP (total factor productivity) loss due to resource misallocation
  - % of output loss relative to hypothetical allocation
  - Data from China's Industrial Firm Survey (for firms with annual revenue larger than a threshold) from 2004 to 2013, measured in 47 manufacturing sectors, city level

- A real estate boom affect allocation efficiency on both sides:
  - Mitigate financial constraints of land-holding firms through the collateral effect
  - Distort efficiency through the speculation effect and the crowding out effect

Land Price Change and TFP losses

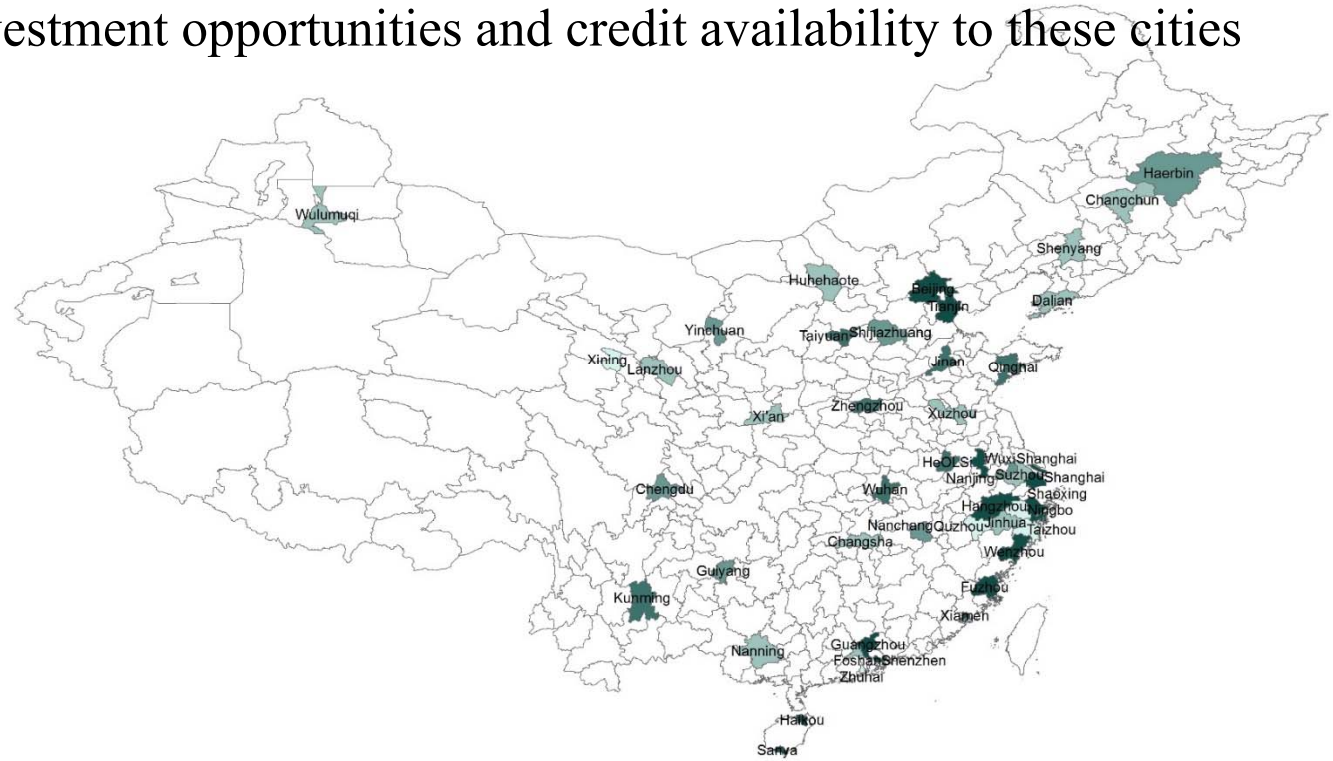
$$TFPLoss_{p,t} = \alpha + \beta * \Delta PriceIndex_{p,t} + \mu_p + \delta_t + \varphi_{p,t}$$

Panel A	Simple Average			Weighted Average by Industrial Output		
	(1)	(2)	(3)	(4)	(5)	(6)
Price Change^{Commercial}	0.117***			0.184**		
	(0.025)			(0.089)		
Price Change^{Residential}		0.061***			0.092***	
		(0.014)			(0.027)	
Price Change^{Industrial}			0.017			0.008
			(0.340)			(0.012)
Number of Observations	1476	2103	1314	1476	2103	1314
Adj. R-squared	0.498	0.547	0.517	0.536	0.512	0.498

A Quasi-Policy Experiment

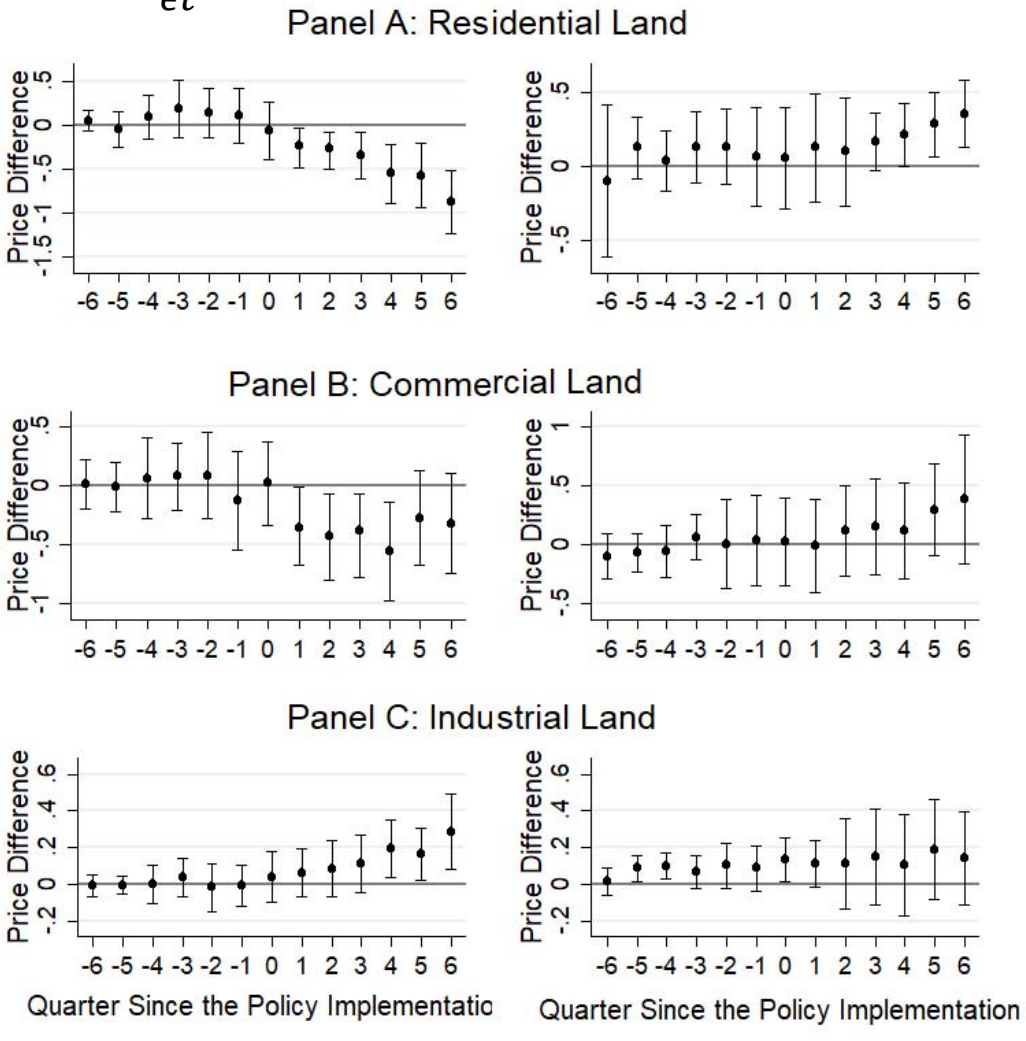
- The massive economic stimulus in 2008-2010 might cause reversal causality of our findings.

- In 2010, 46 cities adopted the policy of restricting residential home purchases to cool the real estate boom
  - This policy directly affected demand for residential housing, but not firms' investment opportunities and credit availability to these cities

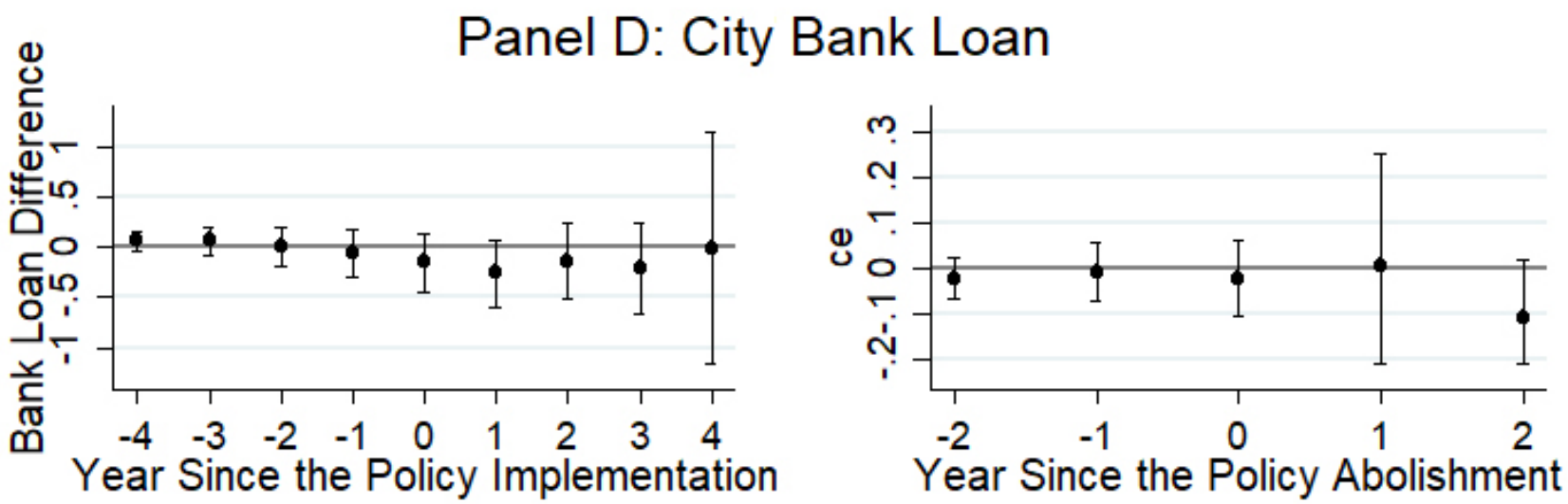


Did the Policy Affect Land Prices?

$$LandPrice_{i,j,t} = \alpha + \sum_{\epsilon t} \beta_{\epsilon t} * EventTime_{j,t,\epsilon t} + \sum \lambda_j * t + \mu_t + \gamma_j + \varepsilon_{i,t}$$



The Policy Shock and Credit Availability



Land Price Change and TFP losses

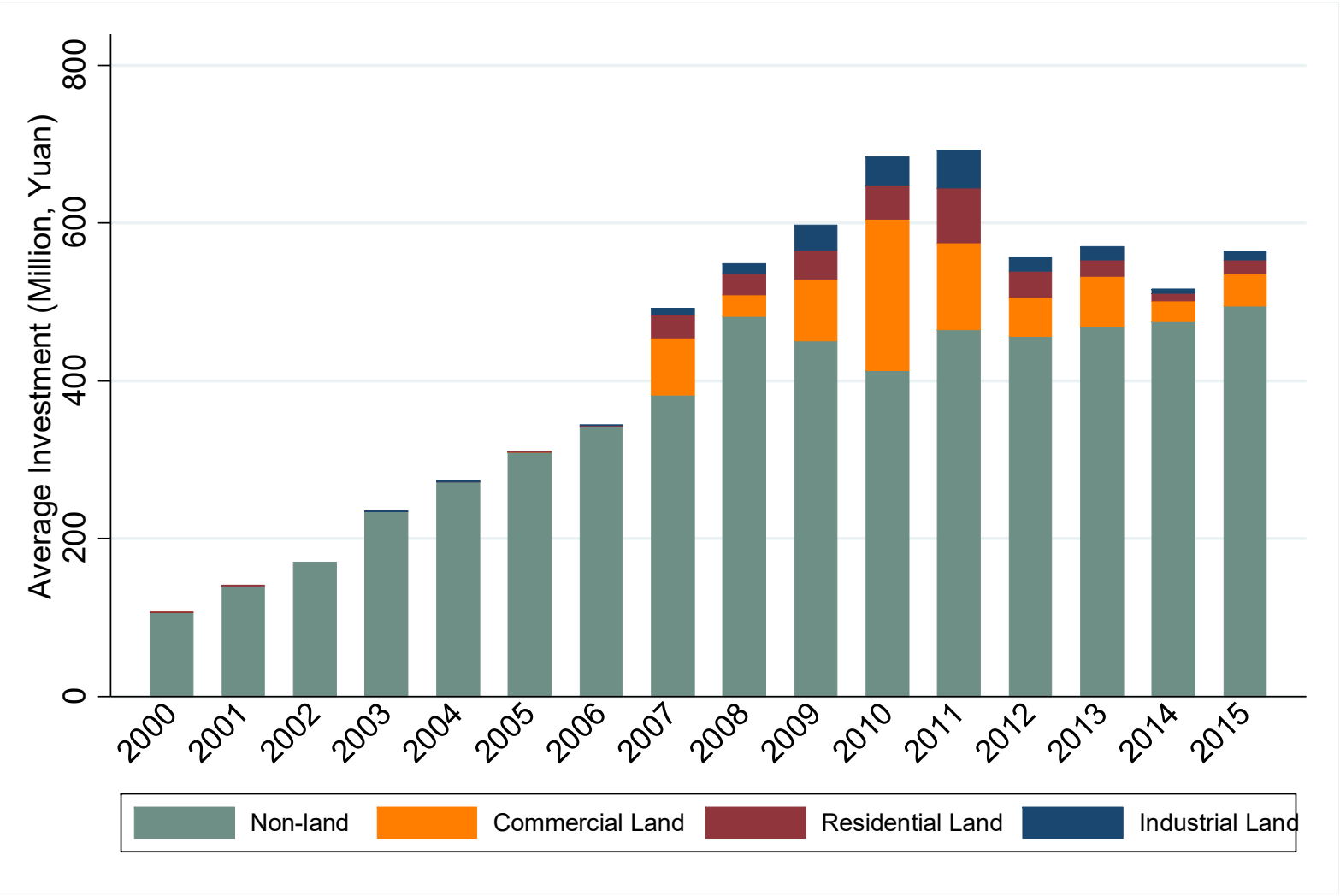
$$TFPLoss_{p,t} = \alpha + \beta * Policy_{p,t} + \mu_p + \delta_t + \varphi_{p,t}$$

Panel B	Simple Average		Weighted Average by Industrial Output	
	(7)	(8)	(9)	(10)
Policy Shock	-0.185**	-0.257***	-0.098	-0.282**
	(0.086)	(0.074)	(0.062)	(0.127)
City Specific Time Trend	No	Yes	No	Yes
Number of Observations	2214	2214	2214	2214
Adj. R-squared	0.415	0.598	0.385	0.424

Firm Investment

- Firm investment
  - Annual sample of 30,344 firm-year observations in 2000-2015 for 3,112 unique firms
  - Four components: Non-land, residential land, commercial land, industrial land
- Innovation activities
  - Annual R&D expenditure
  - Successful grant applications filed by each firm in each year
  - We count invention patents and utility model patents, but not design patents
  - 57,234 patents granted to 1,330 listed firms in 2000-2015.

Investment of Publicly Listed Firms

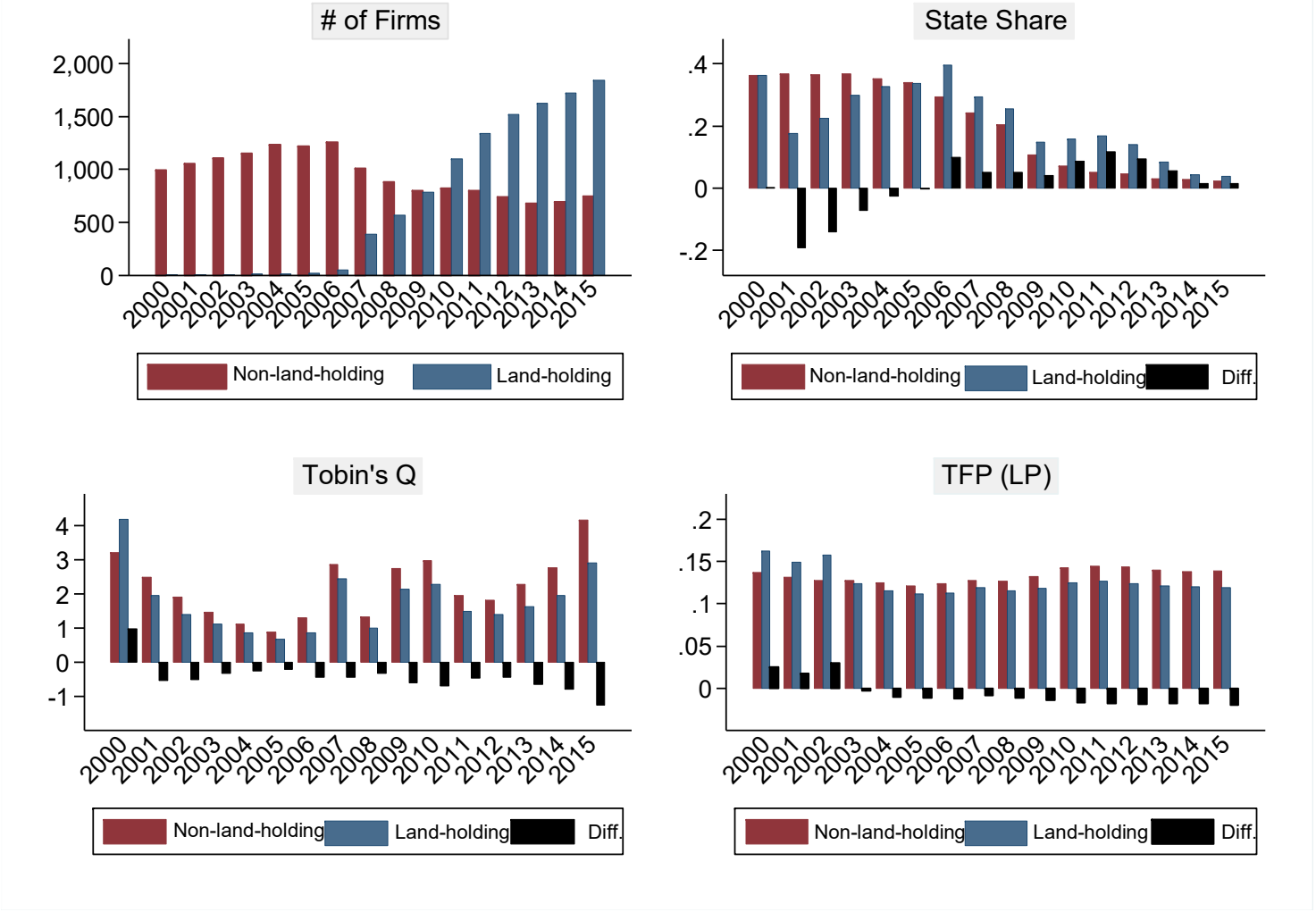


Summary Statistics

Table 1. Summary Statistics

Statistics	Mean	Std. Dev	p10	Median	p90
			All (24685)		
Gross Investment	448,000,000	2,200,000,000	7,880,429	94,400,000	775,000,000
Non-land Investment	363,200,000	2,150,000,000	3,701,758	83,400,000	695,000,000
Commercial Investment	48,600,000	714,000,000	0	0	0
Residential land Investment	19,800,000	156,000,000	0	0	22,500,000
Industrial Investment	16,300,000	277,000,000	0	0	0
Total Land Value	496,000,000	4,180,000,000	0	0	534,000,000
Residential Land Value	143,000,000	1,640,000,000	0	0	16,500,000
Commercial Land Value	225,000,000	3,020,000,000	0	0	22,400,000
Industrial Land Value	129,000,000	815,000,000	0	0	199,000,000
Tobin's Q	2.009	1.501	0.525	1.549	4.402
Cash Flow	872,000,000	3,630,000,000	-185,000,000	163,000,000	1,870,000,000
Sale	4,570,000,000	15,400,000,000	227,000,000	1,190,000,000	8,550,000,000
Total Asset	6,660,000,000	21,000,000,000	637,000,000	2,150,000,000	11,900,000,000
R&D Expenditure	33,900,000	390,000,000	0	0	34,700,000
Number of New Patent (Invention + Utility Model+1)	2.997	30.844	0	0	4

Comparing Land-holding and Non-land-holding Firms



Three Channels

Different channels for a real estate boom to affect firm investment

- The collateral channel: It relaxes financial constraints faced by land-holding firms
  - Kiyotaki and Moore (1997), Gan (2007), Chaney, Sraer and Thesmar (2012)
- The speculation channel: It may induce firms to speculate in real estate unrelated to their regular businesses
  - Chen and Wen (2014), Miao and Wang (2014)
- The crowding out channel: it may crowd out bank financing to non-land-holding firms
  - Bleck and Liu (2014), Chakraborty, Goldstein and MacKinlay (2014)
- A systematic analysis of these channels is lacking
  - What is the net effect of a real estate boom on efficiency of capital allocation?

The Collateral Channel

- Hypothesis: A real estate boom allows land-holding firms to borrow more and invest more

- $$\frac{I_{i,t}}{K_{i,t-1}} = \alpha + \beta \cdot \frac{LandValue_{i,t-1}}{K_{i,t-1}} + \theta X_{it} + \mu_i + \delta_t + \epsilon_{it}$$

  - X_{it}: Tobin's Q, end-of-year cash flow, total sale, total firm asset, and share of state ownership
  - μ_i, δ_t: Firm, year fixed effects
  - Following Chaney, Sraer, and Thesmar (2012)
  - IV analysis skipped

Land Value and Gross Investment

Table 3. Land Value and Gross Investment

	Gross Investment			
	(1)	(2)	(3)	(4)
$Land\ Value_{t-1}$	0.037***			
	(0.010)			
$Land\ Value_{t-1}^{Commercial}$		0.140***		
		(0.034)		
$Land\ Value_{t-1}^{Residential}$			0.072***	
			(0.016)	
$Land\ Value_{t-1}^{Industrial}$				-0.046
				(0.036)
Tobin's Q	-0.002	-0.003	-0.001	-0.001
	(0.011)	(0.011)	(0.011)	(0.011)
Sale	0.023***	0.023***	0.023***	0.024***
	(0.004)	(0.004)	(0.004)	(0.004)
Cash Flow	0.011***	0.011***	0.011***	0.012***
	(0.003)	(0.003)	(0.003)	(0.003)
Total Asset	0.076*	0.078**	0.075*	0.070*
	(0.030)	(0.030)	(0.030)	(0.030)
State Share	0.013	0.001	0.013	0.022
	(0.042)	(0.042)	(0.042)	(0.043)
Number of Observations	10850	10804	10809	10771
Adj. R-squared	0.413	0.416	0.417	0.412

Collateral Effect across Land Types

- Why is the magnitude of the collateral effect decreasing across commercial, residential, and industrial land?
  - Banks may have different preferences for different land collaterals depending on their expectations of future price appreciations and market liquidity of different types of land

- We examine a sample of 0.35 million land-collateralized loans between 2002 and 2014

$$LTV_{ikct} = \alpha + \beta \cdot Com_k + \delta \cdot Res_k + \gamma \cdot \Delta PriceIndex_{ct}^{k} + \mu_c + \delta_t + \epsilon_{ikct}$$

  - LTV_{ikct}: Loan-to-value ratio for each loan i
  - Com_k, Res_k : Commercial/residential land dummies
  - $\Delta PriceIndex_{ct}^{k}$: Land price change for k type of land in bank's branch city c at year t

Table 4. Land Price Change and Loan to Value Ratio for Land Collateralized Loans

	Loan to Value Ratio					
	(1)	(2)	(3)	(4)	(5)	(6)
Commercial Land	0.091***	0.090***	0.054*	0.091***	0.089***	0.090***
	(0.027)	(0.027)	(0.029)	(0.027)	(0.027)	(0.027)
Residential Land	0.020***	0.019***	0.019***	0.017***	0.008	0.020***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.009)	(0.004)
Price Change $_{t-1}^{Commercial}$ (Bank Branch City)		0.189***	0.006			
		(0.054)	(0.008)			
Price Change $_{t-1}^{Commercial}$*Commercial Land			0.225***			
			(0.072)			
Price Change$_{t-1}^{Residential}$ (Bank Branch City)				0.114**	0.005	
				(0.055)	(0.016)	
Price Change$_{t-1}^{Residential}$ *Residential Land					0.114**	
					(0.055)	
Price Change $_{t-1}^{Industrial}$ (Bank Branch City)						0.044
						(0.028)
$\beta_{Commercial} - \beta_{Residential}$	0.071***	0.071***	0.035**	0.074***	0.081***	0.070***
	(0.016)	(0.018)	(0.016)	(0.018)	(0.021)	(0.019)
Number of Observations	354912	354912	354912	354912	354912	354912
Adj. R-squared	0.712	0.708	0694]	0.711	0.698	0.702

How Do Banks Allocate Credit?

- Hypothesis: A real estate boom reduces bank's willingness to grant loans without land collateral

- Bank Loan Level Analysis
  - A loan level dataset for the publicly listed firms
    - Obtained from RESSET and CSMAR
    - 81,872 loans made to 2,862 publicly listed firms in 2000-2015
    - Information on collateral and bank branch of the lender

- $$Collateral_{i,b,t} = \zeta + \lambda * \Delta LandPriceIndex_{b,c,t} + \theta X_{i,t} + \mu_{ct} + \iota_{bt} + \tau_{bc} + \pi_{i,b,c,t}$$

Land Price Change and Loans of Different Types

Table 7. Land Prices and Accessibility of Bank Loans, Loan-Level Analysis from 2000 to 2015

	Loans with Real Estate Collateral	Loans with Non-Real Estate Collateral	Loans without Collateral	Real Estate Collateral =2; Non-Real Estate Collateral=1; No Collateral=0
Panel A	(1)	(2)	(3)	(4)
Price Change $_{t-1}^{Commercial}$ (Bank Branch City)	0.059***	0.076***	-0.060***	0.044***
	(0.004)	(0.004)	(0.005)	(0.006)
Number of Observations	41930	41930	41930	41930
Adj. R-squared	0.314	0.288	0.301	0.294
Panel B	(5)	(6)	(7)	(8)
Price Change$_{t-1}^{Residential}$ (Bank Branch City)	0.049***	0.050***	-0.054***	0.059***
	(0.003)	(0.002)	(0.003)	(0.005)
Number of Observations	41930	41930	41930	41930
Adj. R-squared	0.314	0.283	0.302	0.296
Panel C	(9)	(10)	(11)	(12)
Price Change $_{t-1}^{Industrial}$ (Bank Branch City)	-0.005	0.000	-0.001	0.001
	(0.006)	(0.006)	(0.007)	(0.009)
Number of Observations	41930	41930	41930	41930
Adj. R-squared	0.308	0.275	0.297	0.293

The Speculation and Crowding Out Channels

- Hypothesis: A real estate boom induces land-holding firms to pursue land speculation (speculation effect); and causes land-holding firms to reduce non-land investments and crowds out financing of non-land-holding firms (crowding out effect).

$$Y_{i,t} = \alpha + \gamma \cdot \Delta PriceIndex_{i,k,t-1} + \beta \cdot \frac{LandValue_{i,t-1}}{K_{i,t-1}}$$
$$+\eta \cdot \frac{LandValue_{i,t-1}}{K_{i,t-1}} \cdot \Delta PriceIndex_{i,k,t-1}$$
$$+\kappa_0 \cdot I_{Non-owner} + \kappa_1 \cdot I_{Non-owner} \cdot \Delta PriceIndex_{i,k,t-1} + \theta X_{it} + \mu_i + \delta_t + \epsilon_{it}$$

  - $Y_{i,t}$: Investment in a type (total, non-land, residential, commercial land, industrial land), or R&D expenditure, patent applications
  - $\Delta LandPriceIndex_{i,t-1}$: Price change of commercial, residential land, or industrial land

Commercial Land Price Change and Firm Investment

Panel A	Gross Investment		Non-land Investment		Commercial Land Investment		Residential Land Investment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Land Value$_{t-1}^{Commercial}$ (LVC)	0.133***	0.121***	0.129***	0.139***	0.008	-0.011	0.039***	0.034***
	(0.035)	(0.035)	(0.033)	(0.033)	(0.011)	(0.011)	(0.012)	(0.011)
Price Change$_{t-1}^{Commercial}$ (PCC)	0.016	0.005	-0.039***	-0.028**	0.045***	0.026**	0.009***	0.004
	(0.019)	(0.016)	(0.012)	(0.013)	(0.015)	(0.010)	(0.003)	(0.003)
LVC*PCC		0.106		-0.098***		0.171**		0.046**
		(0.094)		(0.034)		(0.084)		(0.022)
Non-owner	-0.036	-0.038	0.029	0.030	-0.008**	-0.010***	-0.052***	-0.052***
	(0.024)	(0.025)	(0.024)	(0.024)	(0.003)	(0.003)	(0.003)	(0.003)
Non-owner*PCC	-0.100***	-0.088***	-0.039	-0.049	-0.044***	-0.026***	-0.015***	-0.010***
	(0.034)	(0.033)	(0.031)	(0.032)	(0.015)	(0.010)	(0.004)	(0.004)
Number of Observations	10804	10804	10804	10804	10804	10804	10804	10804
Adj. R-squared	0.397	0.398	0.401	0.401	0.148	0.195	0.150	0.156

Residential Land Price Change and Firm Investment

Panel B	Gross Investment		Non-land Investment		Commercial Land Investment		Residential Land Investment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Land Value$_{t-1}^{Commercial}$ (LVC)	0.134***	0.132***	0.129***	0.137***	0.008	0.001	0.039***	0.032***
	(0.035)	(0.035)	(0.032)	(0.033)	(0.011)	(0.009)	(0.012)	(0.010)
Price Change $_{t-1}^{Residential}$ (PCR)	-0.022	-0.023	-0.038**	-0.029	0.008	0.001	0.009**	0.002
	(0.017)	(0.017)	(0.017)	(0.018)	(0.009)	(0.006)	(0.004)	(0.003)
LVC*PCR		0.010		-0.074**		0.062		0.058***
		(0.062)		(0.038)		(0.057)		(0.019)
Non-owner	-0.044*	-0.044*	0.030	0.031	-0.015***	-0.016***	-0.053***	-0.054***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.003)	(0.004)	(0.003)	(0.003)
Non-owner*PCR	-0.063*	-0.062*	-0.047	-0.056*	-0.008	-0.000	-0.010**	-0.003
	(0.033)	(0.033)	(0.033)	(0.033)	(0.009)	(0.006)	(0.004)	(0.004)
Number of Observations	10804	10804	10804	10804	10804	10804	10804	10804
Adj. R-squared	0.397	0.397	0.401	0.402	0.129	0.137	0.150	0.163

Commercial Land Price Change and Firm Innovations

Table 6. Land Price Change and Firm Innovations

Panel A	R&D Expenditure		Patent (Logged)	
	(1)	(2)	(1)	(2)
Land Value$_{t-1}^{Commercial}$ (LVC)	0.064	0.123**	0.064	0.123**
	(0.065)	(0.054)	(0.065)	(0.054)
Price Change$_{t-1}^{Commercial}$ (PCC)	-0.054***	-0.026**	-0.054***	-0.026**
	(0.017)	(0.013)	(0.017)	(0.013)
LVC*PCC		-0.366**		-0.366**
		(0.151)		(0.151)
Non-owner	0.049	0.061*	0.049	0.061*
	(0.036)	(0.034)	(0.036)	(0.034)
Non-owner*PCC	-0.089**	-0.119***	-0.089**	-0.119***
	(0.043)	(0.041)	(0.043)	(0.041)
Number of Observations	2535	2535	2535	2535
Adj. R-squared	0.644	0.662	0.644	0.662

Residential Land Price Change and Firm Innovations

Table 6. Land Price Change and Firm Innovations

Panel B	R&D Expenditure		Patent (Logged)	
	(1)	(2)	(1)	(2)
Land Value$_{t-1}^{Commercial}$ (LVC)	0.060	0.072	0.075	0.095*
	(0.066)	(0.061)	(0.054)	(0.054)
Price Change$_{t-1}^{Residential}$ (PCR)	-0.025*	-0.006	-0.059**	-0.036
	(0.014)	(0.012)	(0.028)	(0.029)
LVC*PCR		-0.152*		-0.182*
		(0.088)		(0.104)
Non-owner	0.029	0.034	0.021	0.025
	(0.034)	(0.033)	(0.040)	(0.040)
Non-owner*PCR	-0.001	-0.019	-0.014	-0.037
	(0.026)	(0.025)	(0.052)	(0.052)
Number of Observations	2535	2535	10804	10804
Adj. R-squared	0.633	0.641	0.734	0.734

The Policy Shock on Firm Investment

$$Y_{i,t} = \alpha + \beta \cdot \frac{LandValue_{i,t-1}}{K_{i,t-1}} + \varphi \cdot Policy_{j,t} + \eta \cdot \frac{LandValue_{i,t-1}}{K_{i,t-1}} \cdot Policy_{j,t}$$

$$+\kappa_0 \cdot I_{Non-owner} + \kappa_1 \cdot I_{Non-owner} \cdot Policy_{j,t} + \theta X_{it} + \sum_j \lambda_j * t + \mu_i + \zeta_t + \varphi_{i,t}$$

	Gross Investment		Non-land Investment		Commercial Land Investment		Residential Land Investment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Land Value$_{t-1}^{Commercial}$ (LVC)	0.137***	0.220***	0.131***	0.175***	0.009	0.039*	0.039***	0.046
	(0.035)	(0.058)	(0.033)	(0.050)	(0.011)	(0.023)	(0.012)	(0.030)
Policy Shock	-0.032*	-0.018	0.014	0.021	-0.041***	-0.036***	-0.004	-0.003
	(0.018)	(0.018)	(0.017)	(0.017)	(0.006)	(0.005)	(0.003)	(0.004)
LVC*Policy Shock		-0.141***		-0.074		-0.052**		-0.011
		(0.053)		(0.048)		(0.022)		(0.038)
Non-owner	-0.103***	-0.099***	-0.011	-0.009	-0.027***	-0.025***	-0.059***	-0.058***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.005)	(0.005)	(0.004)	(0.004)
Non-owner*Policy Shock	0.129***	0.117***	0.085***	0.079***	0.031***	0.027***	0.011***	0.011***
	(0.028)	(0.029)	(0.028)	(0.029)	(0.005)	(0.004)	(0.003)	(0.004)
Number of Observations	10804	10804	10804	10804	10804	10804	10804	10804
Adj. R-squared	0.398	0.399	0.401	0.401	0.141	0.145	0.149	0.149

The Policy Shock on Firm Innovation

$$Y_{i,t} = \alpha + \beta \cdot \frac{LandValue_{i,t-1}}{K_{i,t-1}} + \varphi \cdot Policy_{j,t} + \eta \cdot \frac{LandValue_{i,t-1}}{K_{i,t-1}} \cdot Policy_{j,t}$$

$$+\kappa_0 \cdot I_{Non-owner} + \kappa_1 \cdot I_{Non-owner} \cdot Policy_{j,t} + \theta X_{it} + \sum_j \lambda_j * t + \mu_i + \zeta_t + \varphi_{i,t}$$

	R&D Expenditure		Patent (Logged)	
	(1)	(2)	(3)	(4)
Land Value$_{t-1}^{Commercial}$ (LVC)	0.064	0.035	0.079	0.036
	(0.066)	(0.053)	(0.054)	(0.058)
Policy Shock	0.033**	0.027*	0.075**	0.068**
	(0.015)	(0.015)	(0.032)	(0.032)
LVC*Policy Shock		0.054		0.073
		(0.065)		(0.103)
Non-owner	0.000	-0.003	-0.028	-0.030
	(0.032)	(0.033)	(0.045)	(0.045)
Non-owner*Policy Shock	0.058*	0.063*	0.115**	0.121**
	(0.033)	(0.034)	(0.053)	(0.053)
Number of Observations	2535	2535	10804	10804
Adj. R-squared	0.635	0.635	0.734	0.734

Conclusion

- On net, the real estate boom leads to less (rather than more) efficient resource allocation in China

- Evidence for the real estate boom to generate not only the well-known collateral effect but also a speculation effect and a crowding out effect