



EUROPEAN CENTRAL BANK  
EUROSYSTEM

**Mali Chivakul**  
External Development Division  
DG International and European Affairs  
European Central Bank

# **China's Real Estate Market and Its Interlinkage with the Real Economy**

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## The interlinkage

Real estate: Large contribution to economic growth

- Real estate contributes 13% to China's GDP (with all the data caveats)
- Strong linkages to upstream and downstream industries: about 25% of GDP is real estate related (Ding and others, 2017)
- Land sales is about 9% of headline revenue

Real estate sector dynamic could also have impact on economic actor's decision to invest and consume

- Household saving for housing purchase (e.g. Chamon and Prasad, 2010)
- Housing as collateral: Relaxing financial constraints
- Housing wealth effect?
- Housing as a substitute to other types of investment

## Future of the real estate sector

A number of studies suggest that the role of the government is critical in the Chinese housing market.

- A balancing act: price stability and real estate activities to support growth and urbanization
- Simulations (for example Glaeser and others 2017) seem to suggest that there is a feasible path using government measures
- This suggests that one alternative is to accommodate high level of housing supply. In that case price stability or price drop may be achieved. Potential new buyers will benefit while current owners will suffer losses of value.

# Research questions

- **Real Estate Boom and Misallocation of Capital in China (Chen, Liu, Xiong and Zhou 2017)**
  - How does real estate boom in China affect capital allocation across firms?
  - How does such a boom affect firm investment?
    - Collateral channel
    - Speculation channel
    - Crowding out channel
- **Housing Price and Entrepreneurship (Huang, Lin, Liu and Sheng 2017)**
  - How does housing price appreciation affect entrepreneurship activities?
    - Collateral channel
    - Cost channel
  - Within the effects, is there any difference between offline and online business?

## Main findings

- **Real Estate Boom and Misallocation of Capital in China (Chen, Liu, Xiong and Zhou 2017)**
  - The real estate boom leads to less efficient resource allocation in China
  - Higher land price increase is associated with larger TFP losses
  - Firm investment is higher with higher land value
  - Higher real estate price lowers amount of loans obtained without collateral
  - Price increase encourages commercial land investment and reduces non-land investment and innovation
- **Housing Price and Entrepreneurship (Huang, Lin, Liu and Sheng 2017)**
  - Housing price appreciation curbs offline business formation but stimulates online entrepreneurial activities
  - The effect is more pronounced among homeowners

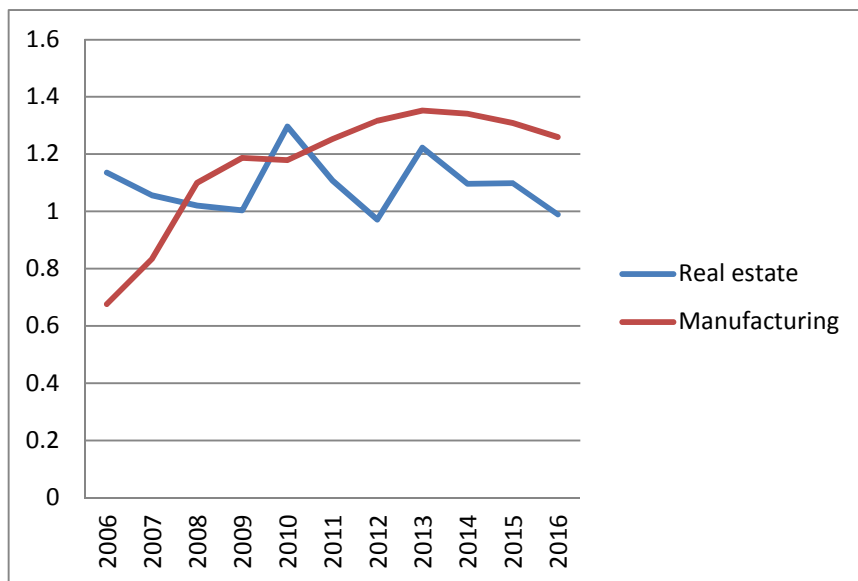
- **Real Estate Boom and Misallocation of Capital in China (Chen, Liu, Xiong and Zhou 2017)**
  - Land transaction data: all transactions 2000-2015
  - Matched with listed firms' names
  - Land price indices: Hedonic price regression approach (Deng, Gyourko and Wu 2012)
  - Firm investment and innovation data of listed firms
  - Loan level data for listed firms with information on collateral
- **Housing Price and Entrepreneurship (Huang, Lin, Liu and Sheng 2017)**
  - CREIS city-level housing price 2010Q3-2016Q3
  - Land supply elasticity
  - Business registration database
  - Taobao shops active 2014Q3-2016Q3

# Real estate boom and misallocation of capital in China

- What determines capital misallocation at the firm level?
  - A large and growing body of work analysing the misallocation of productive resources across firms i.e. dispersion in marginal products
  - These factors include adjustment costs, imperfect information, financial frictions and firm-specific distortions. These factors obstruct the productivity-enhancing flow of inputs across firms.
- Some empirical work on the determinants
  - Leon-Ledesma and Christopoulos (2016): Obstacles to access to finance increases capital and labour misallocation in a cross-country analysis
  - Gamberoni, Giordano and Lopez-Garcia (2016): Increase in cost of credit drives the rise in capital misallocation in the euro area. Less restrictive employment protection legislation and looser product market regulation is associated with lower labour misallocation.
  - Sandoz and others (forthcoming): key drivers of resource misallocation in India are tight labour market regulation and access to finance

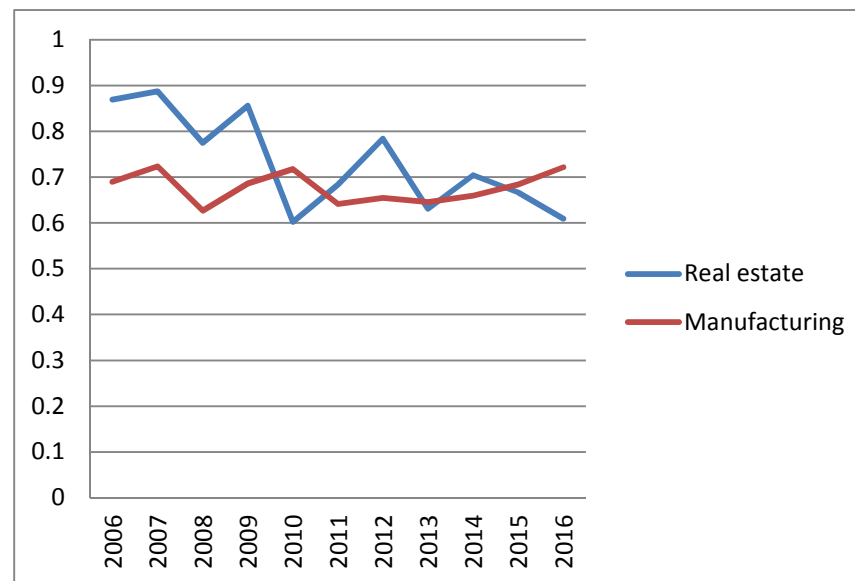
# Capital and labor misallocation (I)

## Dispersion of MRPK



Source: ECB staff estimates

## Dispersion of MRPL



Source: ECB staff estimates



## Capital and labor misallocation (II)

VARIABLES	dispersion_mrpk	dispersion_mrpl
leverage	0.0101 (0.00653)	0.0130* (0.00709)
size	-0.0199 (0.129)	0.337*** (0.128)
loantogdp	0.00321*** (0.000769)	0.00270** (0.00108)
coast	-0.22 (0.185)	-0.242** (0.113)
soe	-0.00545 (0.00352)	0.00927*** (0.00331)
Constant	0.0621 (2.129)	-5.165*** (1.836)
Year dummy	yes	yes
Observations	144	144
Number of provinceno	17	17
R squared	0.2922	0.2817

Robust standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Preliminary investigation at the provincial level: higher capital and labor misallocation in manufacturing is associated with higher level of loans. Worse misallocation even though financial constraints are relaxed.

- The effects from speculation and crowding out channels are so large that they dominate?
- Land investment by non real estate companies has not been productive

# Housing price and entrepreneurship (I)

- Why does entrepreneurship differ across cities?
  - Supply of entrepreneurs (education level, age, industry of choice)
  - Culture of entrepreneurship
  - Inputs for new firms
  - Customers
- Empirical evidence
  - Glaeser (2007) finds that demographic variables and industry sectors explain about one-half of the heterogeneity in self employment rates across US cities. The presence of appropriate workforce is the most powerful predictor of firm birth.

## Housing price and entrepreneurship (II)

- How should we consider the impact of the real estate market on entrepreneurship?
  - In a booming market (especially with widely held belief that housing price will not crash), investing in a property could become more attractive than becoming an entrepreneur? Wealth effect vs. collateral effect
  - In the ideal world, we will want to know the entrepreneur's balance sheet, industry and other demographics
- Is online business formation different?
  - Online retail activity as a new business or another sale avenue of existing retail business?
  - Customers are not necessarily local and therefore other considerations may be in place: logistics and infrastructure

# Summary

- Two very interesting papers with unique database
- Firm response to real estate boom is investigated in detail both at well-established firms and new entrepreneurs
- Both seem to suggest that the real estate boom has shifted attention and resources to real estate-related activities and away from other types of activities. Online business formation seems to show the opposite effect.
- Questions: Are the effects symmetric? Would a large drop in real estate price lead to better resource allocation or improve offline business formation? Are there price change thresholds for these channels?