

# Chinese Housing Markets: What We Know and What We Need to Know

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# Documentation—Prices and Quantities

- What We Need—Better Measurement
  - No official constant quality house price series
    - Private series exist (and we use one from Tsinghua in our paper)
  - Land market
    - Can see raw land sales (leasehold estates)
    - Chinese Residential Land Price Indexes

# Documentation—Prices and Quantities

- What Do These Data Show?
  - Strong trend price growth in aggregate in land and house values
    - Economically large variation about that trend
  - Substantial heterogeneity across markets
    - Extremely strong real price growth in Beijing, but real land values have fallen substantially the past two years in Dalian
  - Transactions Volume
    - Has fallen in recent quarters both in terms of land parcel sales and in the amount of new housing sold

## Documentation: A Closer Look at Land Prices Across Major Markets

- Chinese Residential Land Price Indexes (CRLPI)
  - Wharton-Tsinghua-NUS collaboration (Gyourko, Wu, Deng)
  - 35 major markets, not just east coast or East region cities
    - See next slide
  - Transactions-based, not appraisal-based
  - Full samples of land sold by local governments to private residential developers
  - Constant quality price indexes created

# 城市覆盖范围 City Coverage

- 目前CRLPI指数覆盖全国35个大中城市。  
Currently CRLPI covers 35 major cities in mainland China.
- 这些城市占据了全国新建商品住房市场约50%的市场份额。  
These cities contribute to about 50% of the new home market in the whole country.

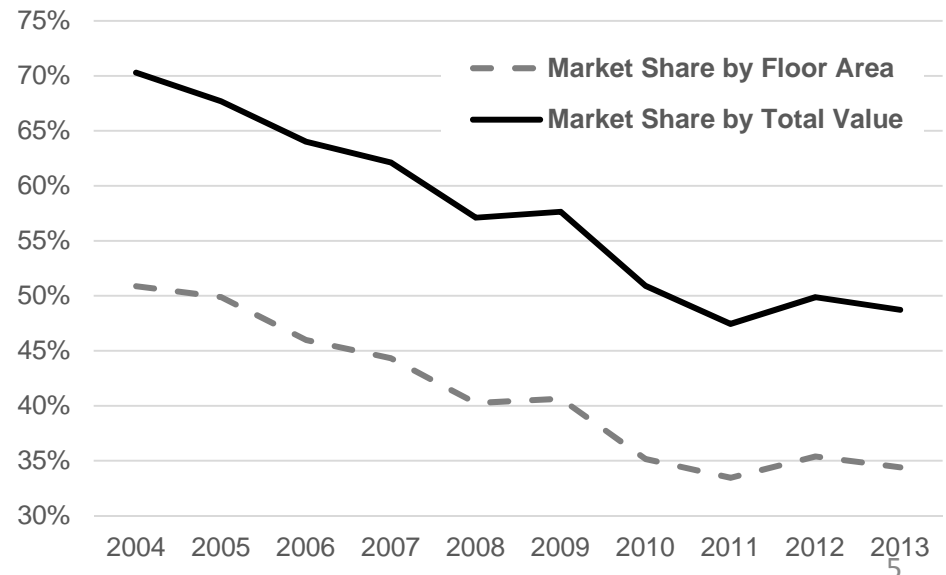
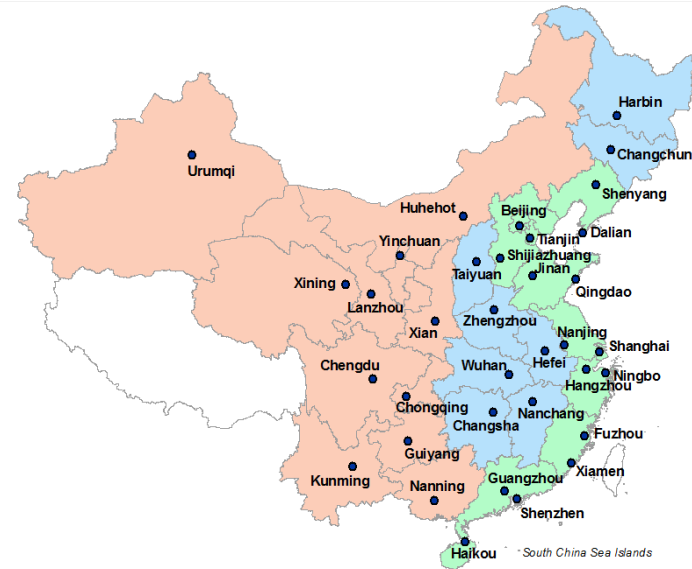


Figure 1: Chinese National Real Land Price Index  
35 Markets, Constant Quality Series  
(Quarterly: 2004q1 – 2014q4)

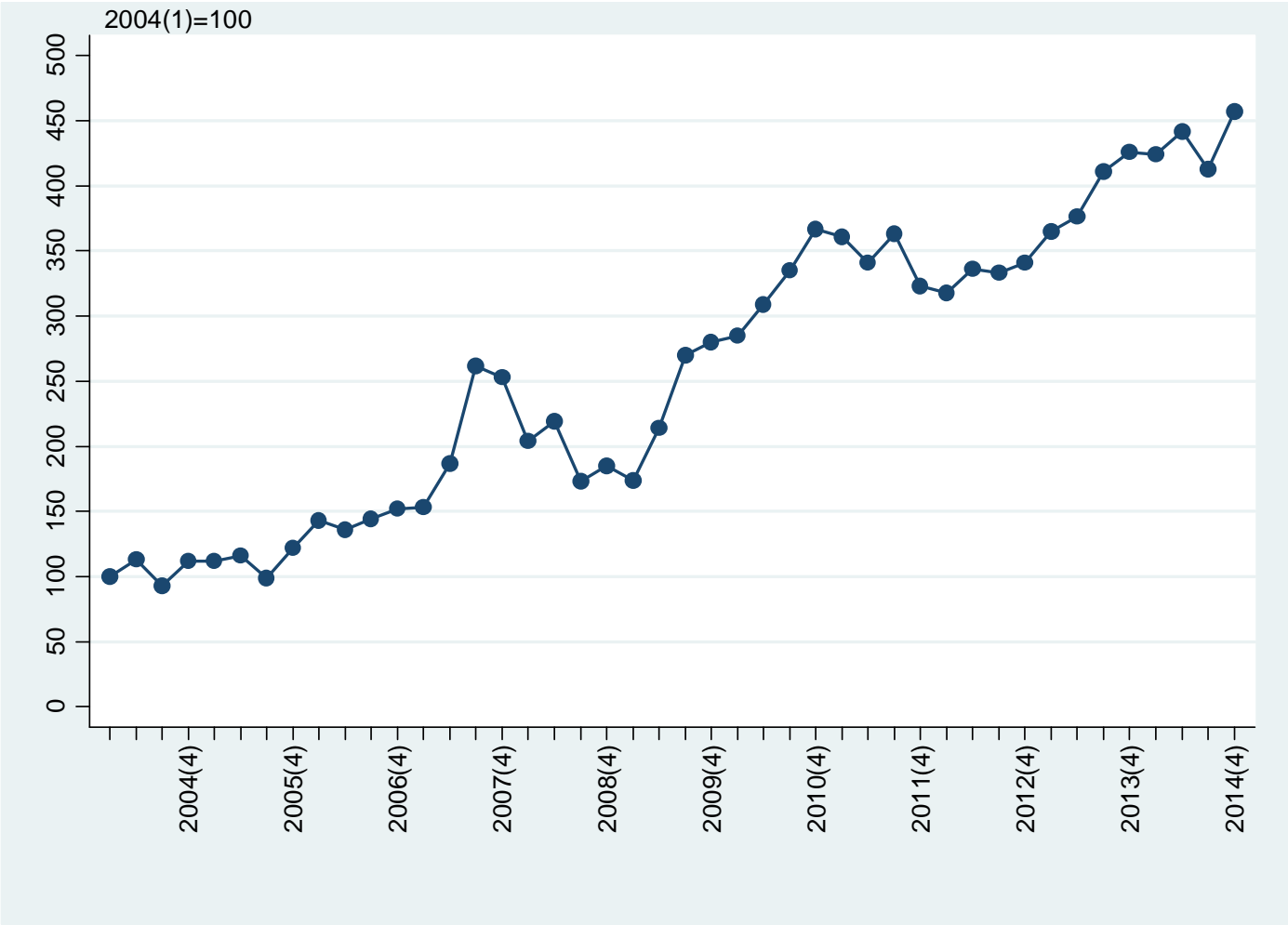


Figure 1': Chinese National Real Log Land Price Index  
35 Markets, Constant Quality Series  
(Quarterly: 2004q1 – 2014q4)

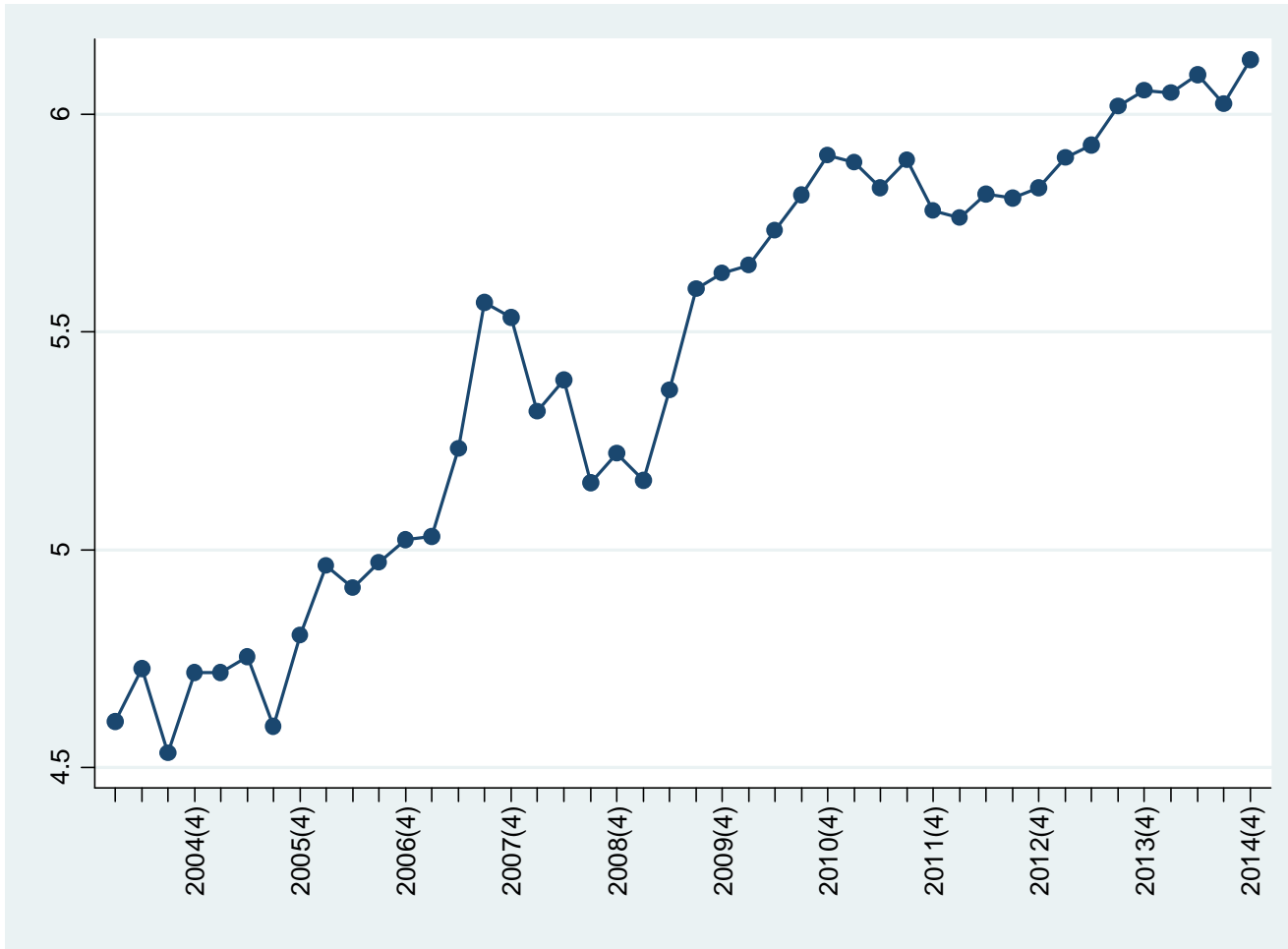
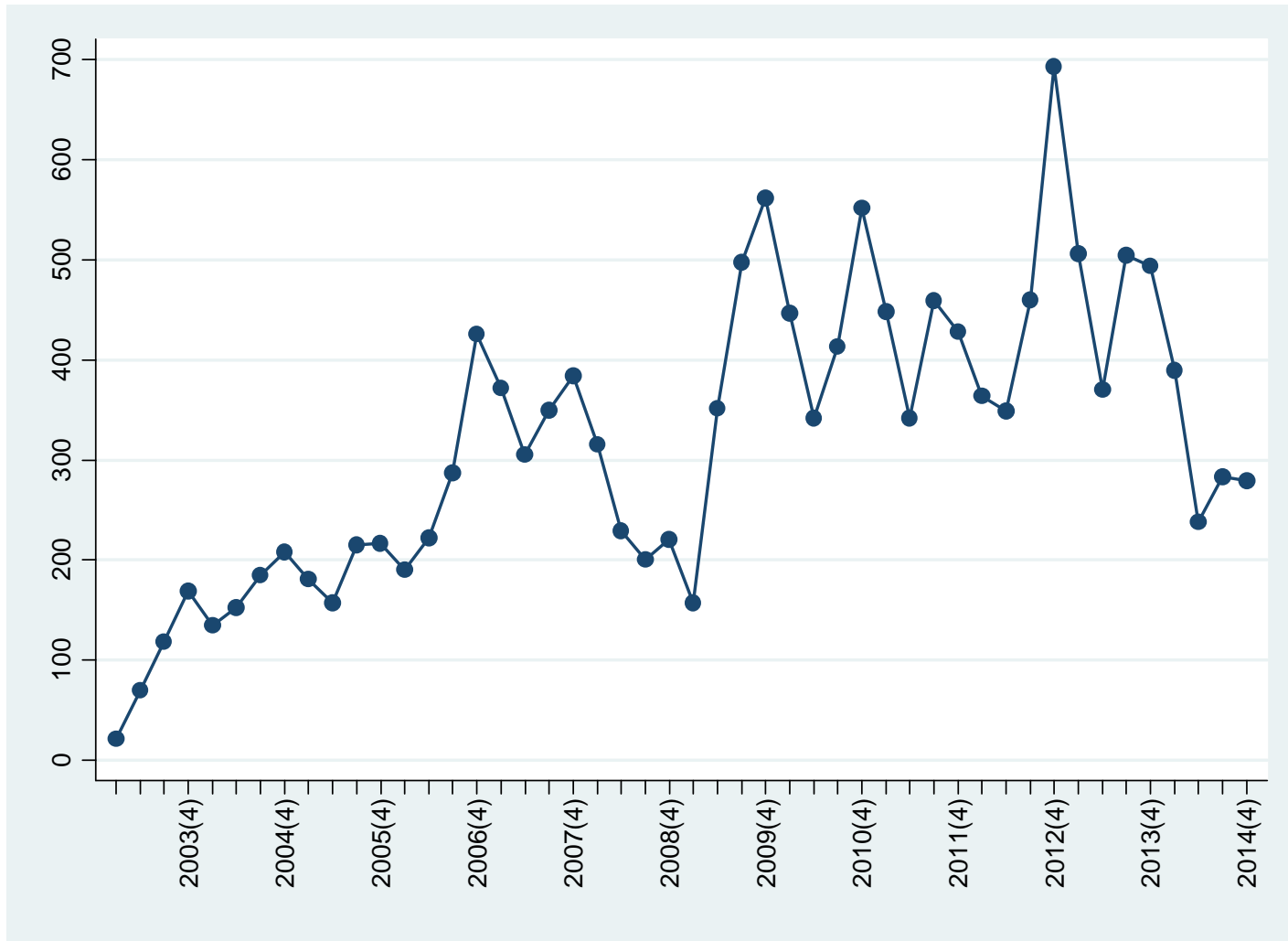


Figure 2: Number of Parcels Sold  
35 Markets (Quarterly: 2004q1 – 2014q4)





# Chinese Housing Unit (Really Space) Growth 2007-2014

Figure 6: Year-Over-Year Growth in Floor Space Sold,  
Newly-Built Housing Units, 2007(1)-2014(4)

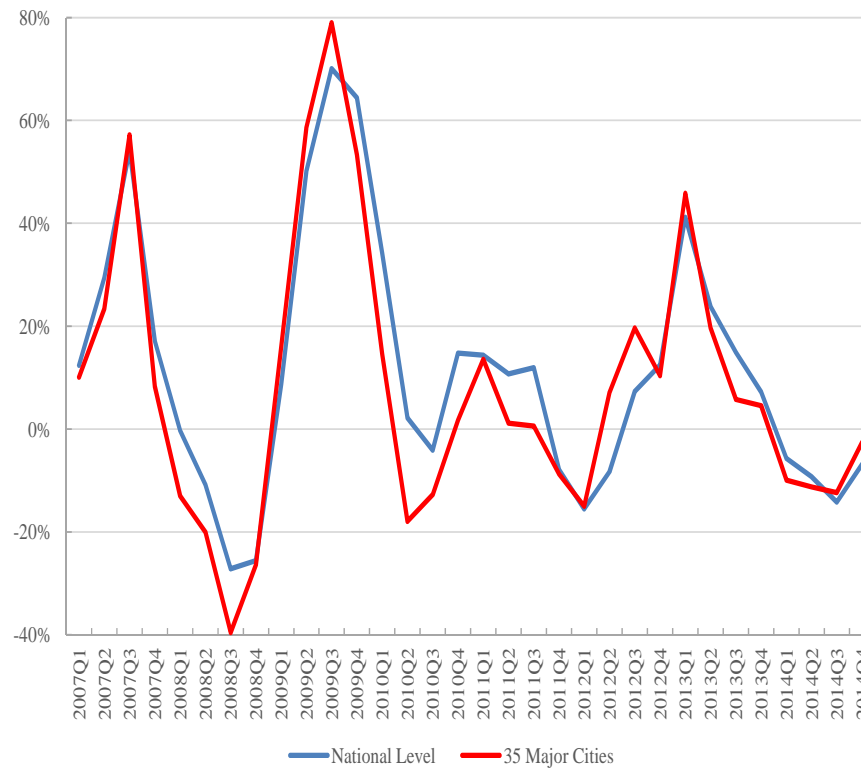
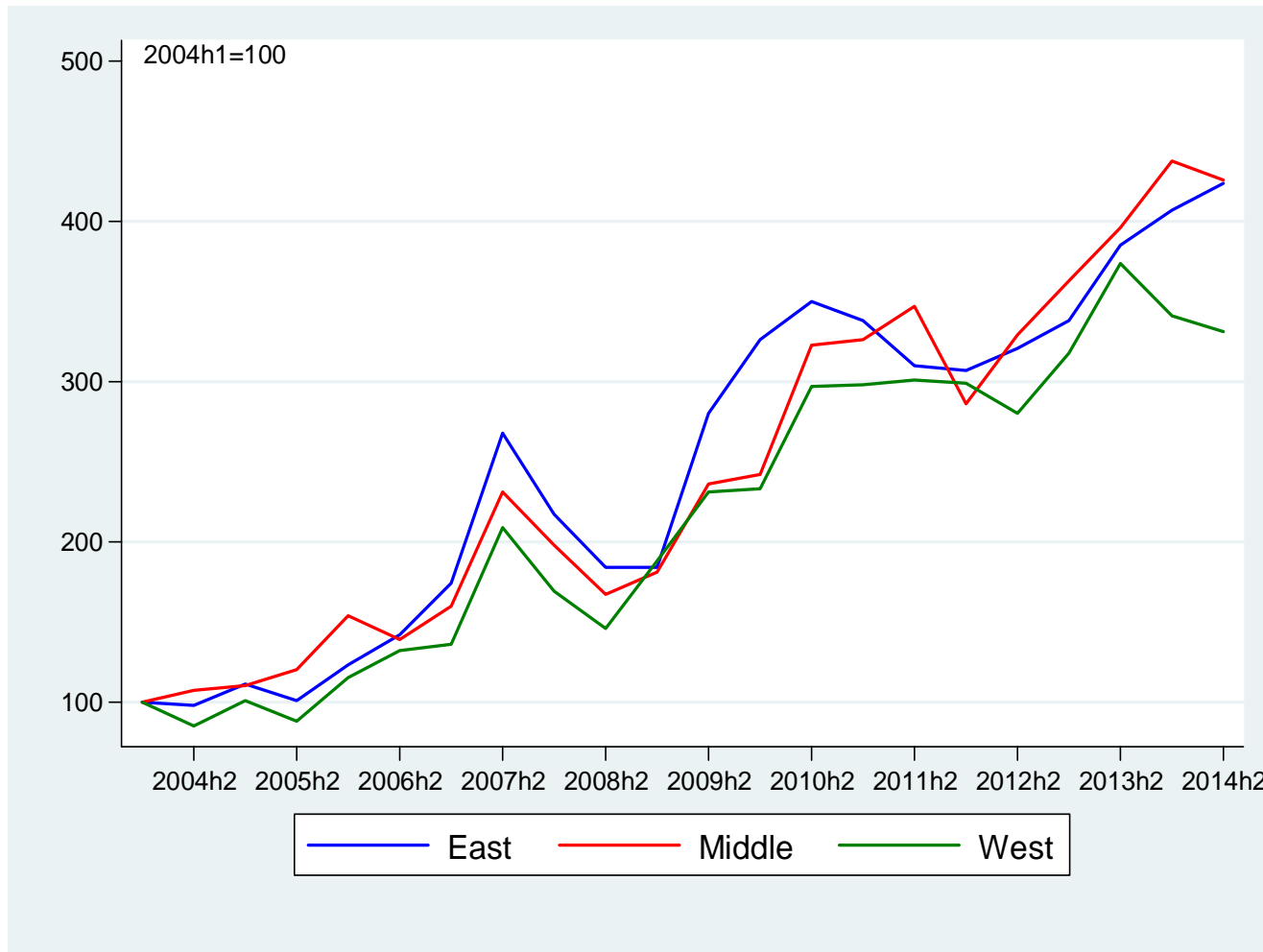


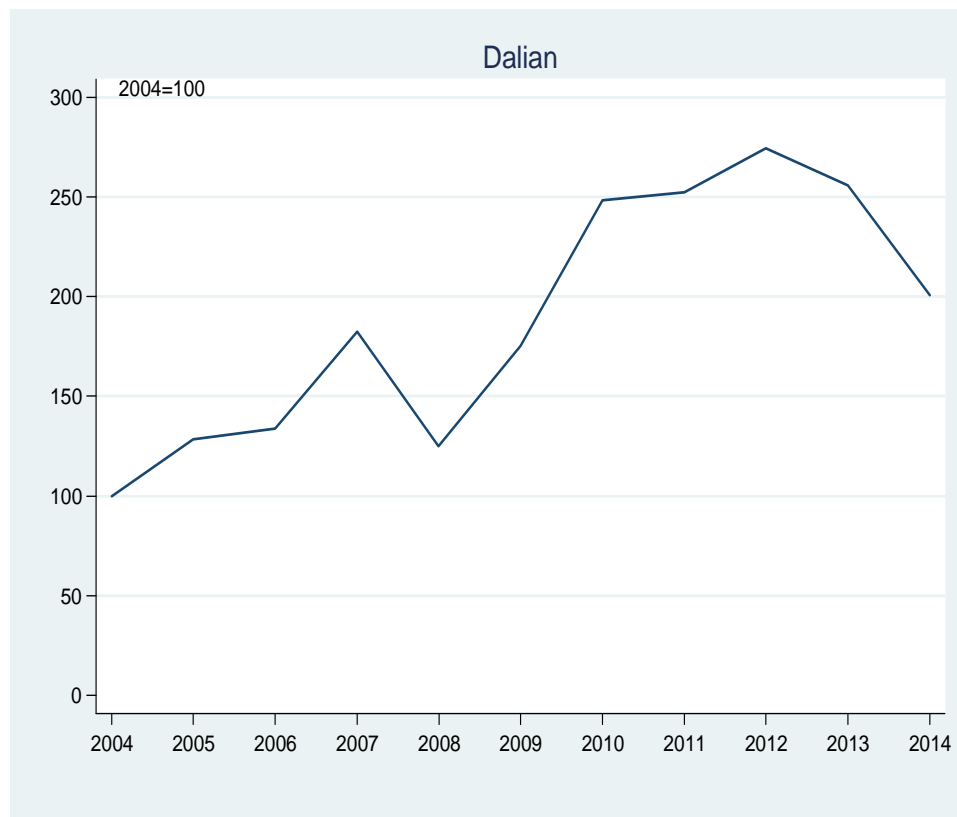
Figure 3: Chinese Regional Real Land Price Index  
East, Middle and West Regions, Constant Quality Series  
(Semi-annually: 2004h1 – 2014h2)

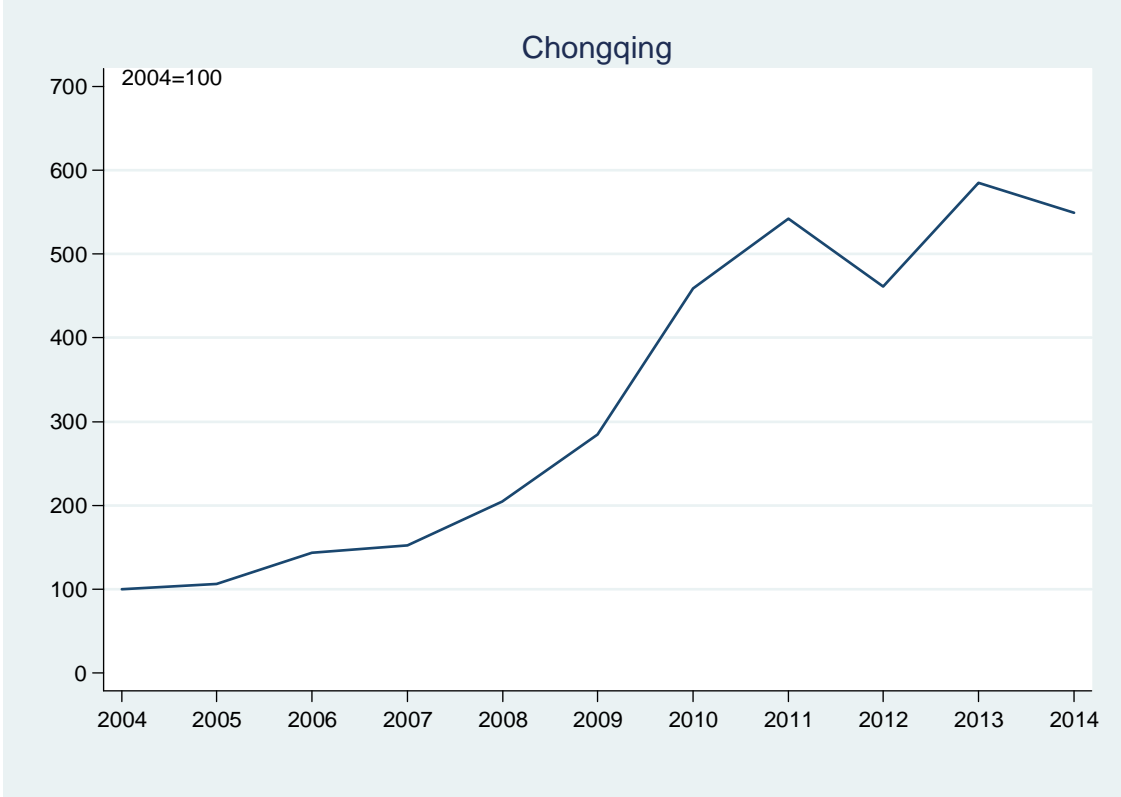


# Summary Statistics: 12 Major Cities 2004-2014 (44 quarters)

Table 3: City Price Index Real Growth												
	2004-2014 11 years									2006-2014 9 years	2007-2014 8 years	
	Beijing	Changsha	Chengdu	Chongqing	Dalian	Hangzhou	Nanjing	Tianjin	Wuhan	Shanghai	Guangzhou	Xian
<b>Total Appreciation</b>	1036%	248%	201%	449%	101%	273%	248%	332%	102%	342%	169%	78%
<b>Compound Growth Rate</b> <b>Annual</b>	27.5%	13.3%	11.6%	18.6%	7.2%	14.1%	13.3%	15.7%	7.3%	20.4%	15.2%	8.6%







# Documentation—Prices and Quantities

- What Do We Need to Know?
  - Need broader constant quality price series
    - Resale market, not just new construction
  - Need a longer time series, but only time will deliver that
  - Need number of units, not just amount of space

# What Do We Need to Know?

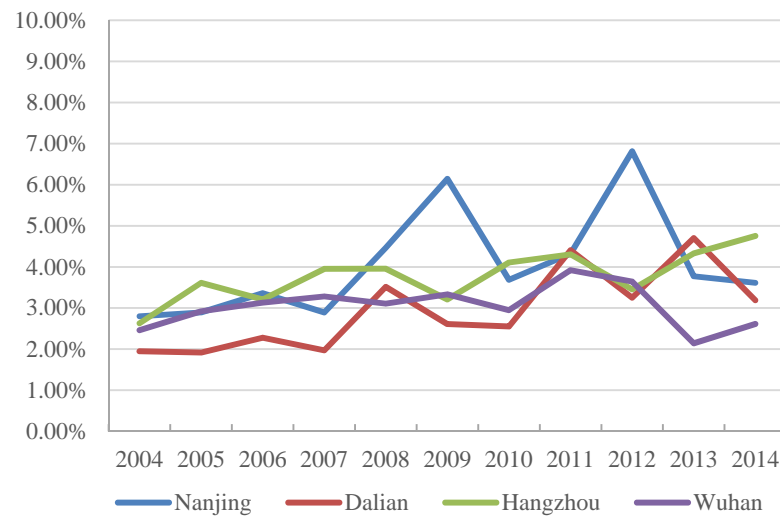
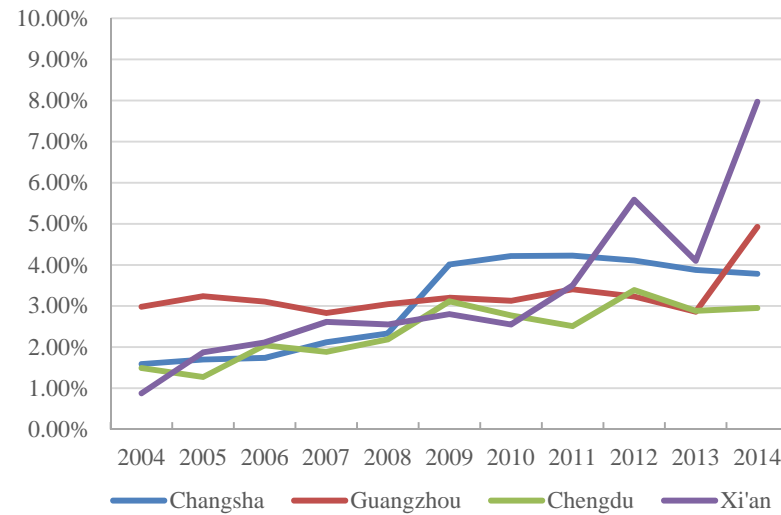
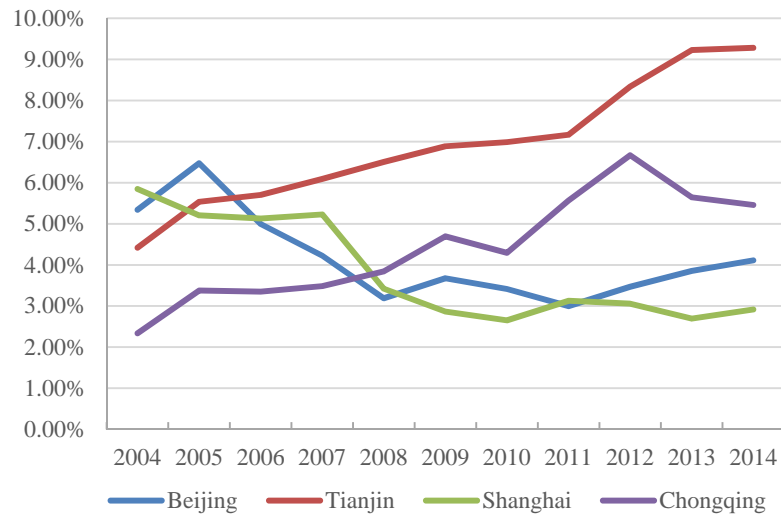
- Better measures of price and quantity are not enough
  - Cannot tell all that much just by looking at P and Q
    - Intersection of supply and demand
- What do local market supply and demand fundamentals look like in Chinese housing markets?



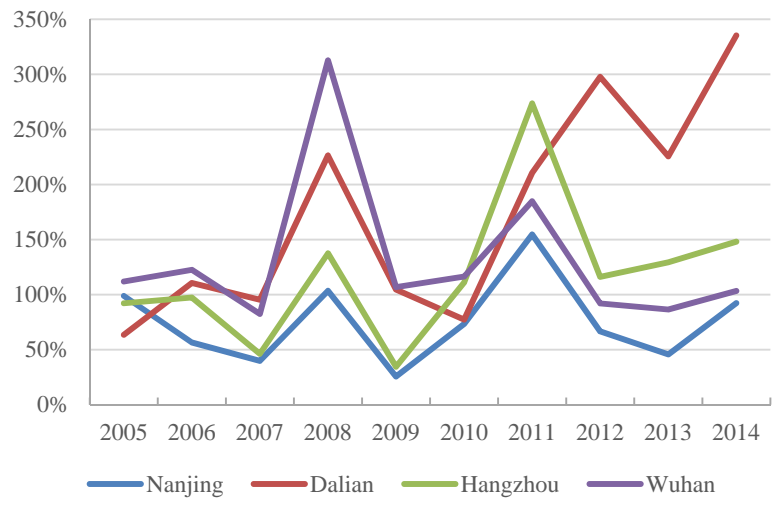
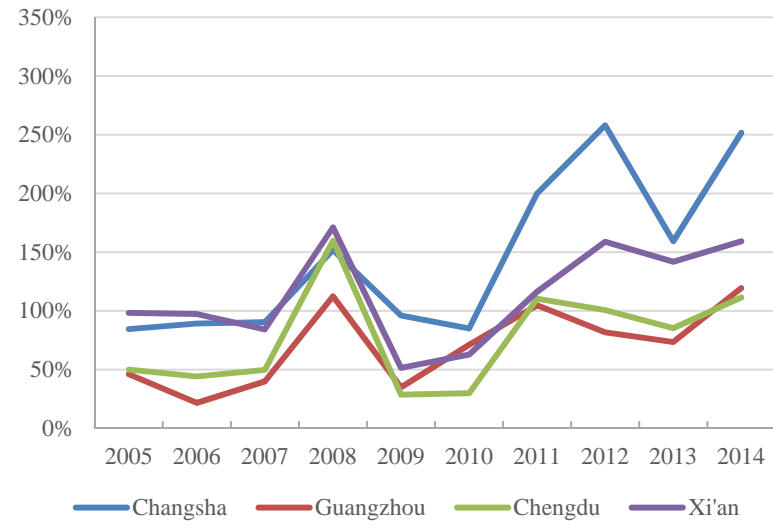
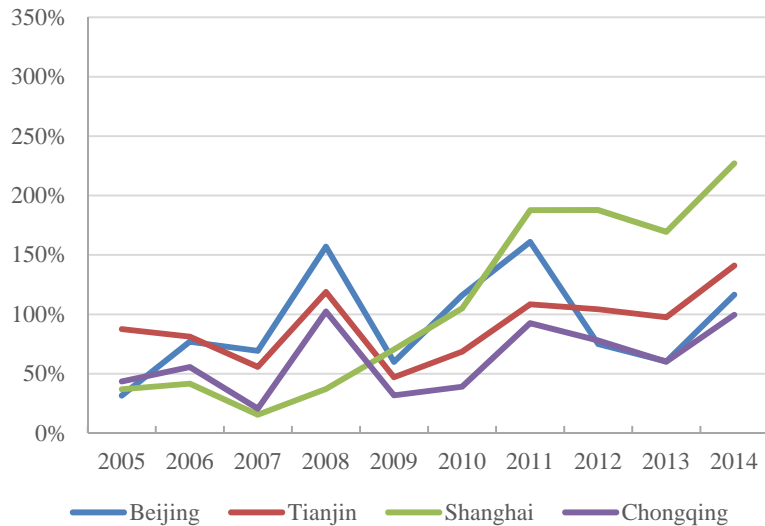
## Metrics on Supply-Demand (Im)Balances

- Annual new construction relative to market size
- Unsold inventory relative to sales volume in market
- Vacancy rates in nine provinces
- Price-to-rent ratios
- Price-to-income ratios
- Breakeven real appreciation expectations from Poterba user cost equation

# Annual New Supply As Share of 2010 Stock



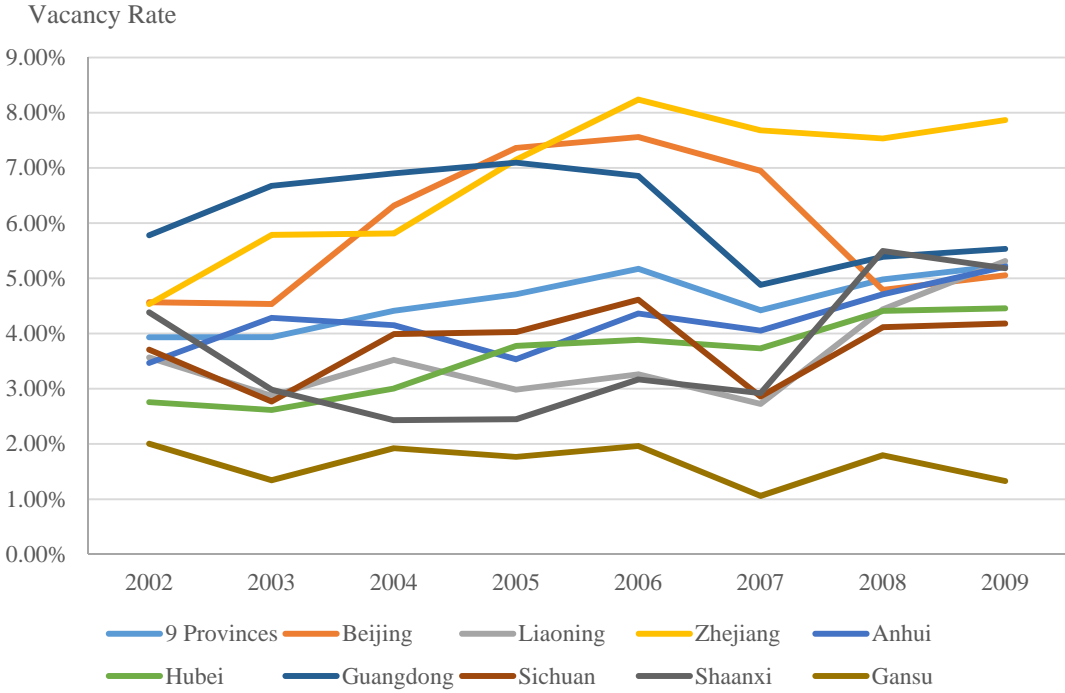
# Unsold Inventory Held by Developers As Share of Transactions Volume in Market



# Aggregate Space Delivered 35 Major Markets

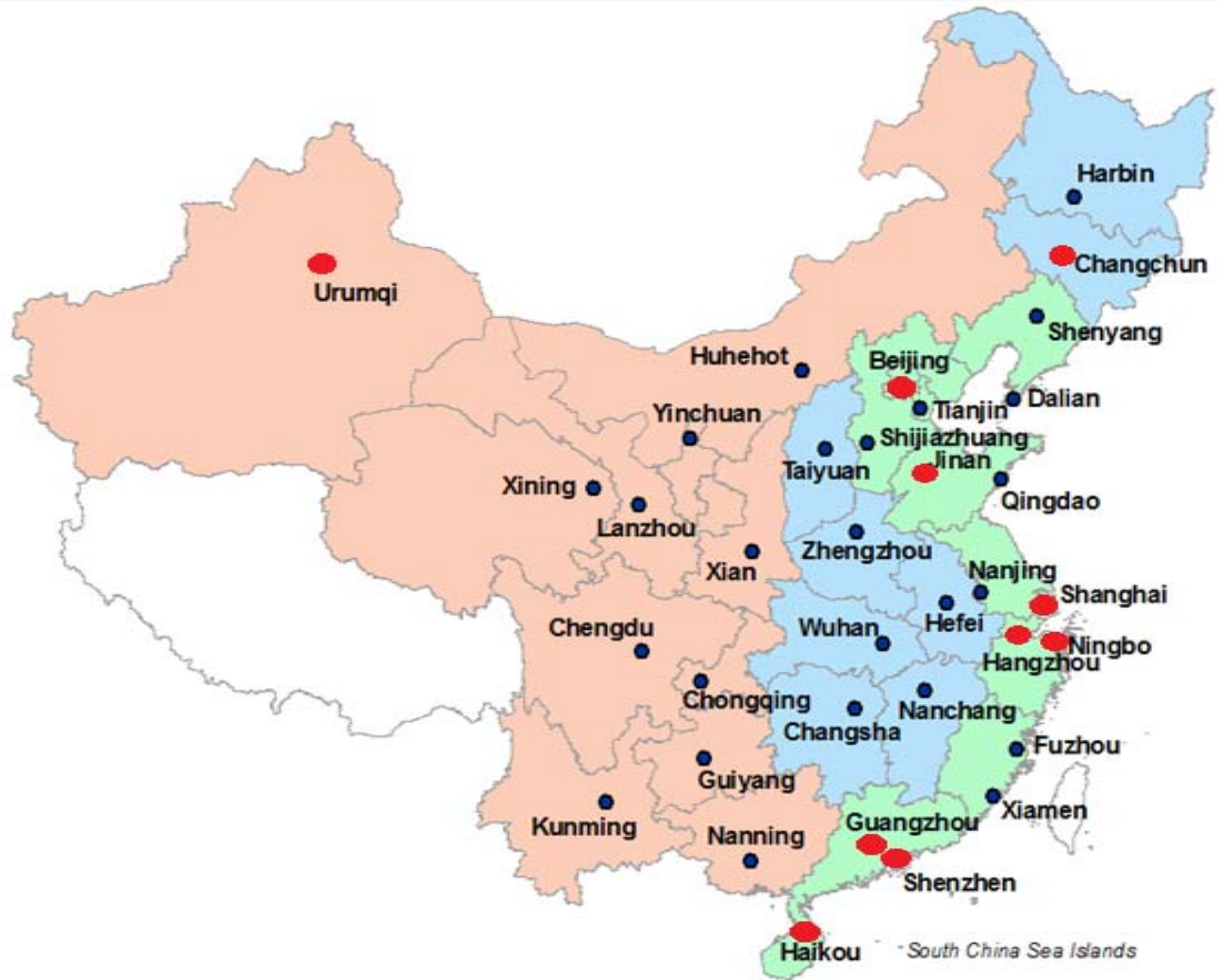


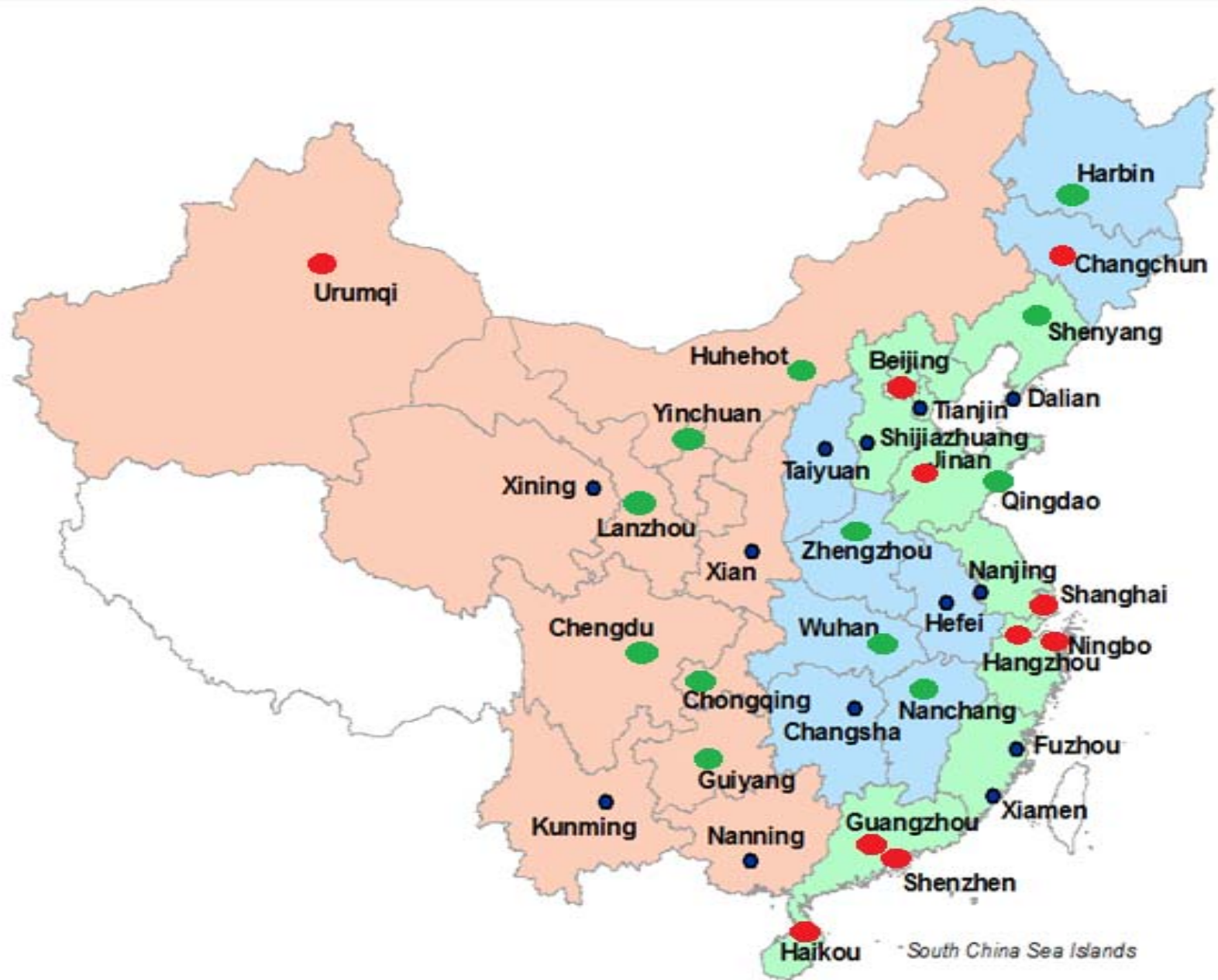
# New Vacancy Rate Estimates



# Longer-Run Supply/Demand Trends 2001-2012

- Supply at least 10% below our projected demand
  - Beijing (79%), Changchun (89%), Shanghai (72%), Hangzhou (70%), Ningbo (78%), Jinan (84%), Guangzhou (81%), Shenzhen (68%), Haikou (79%), Urumqi (79%)
- Supply at least 30% above our projected demand
  - Hohhot (171%), Shenyang (142%), Harbin (138%), Nanchang (161%), Qingdao (142%), Zhengzhou (186%), Wuhan (140%), Chongqing (188%), Chengdu (177%), Guiyang (141%), Lanzhou (143%), Yinchuan (174%)
- Other Major Markets Somewhere in Between, with Most Looking Modestly Oversupplied
  - Tianjin (120%), Shijiazhuang (113%), Taiyuan (120%), Dalian (100%), Nanjing (115%), Hefei (107%), Fuzhou (110%), Xiamen (93%), Changsha (119%), Nanning (112%), Xian (109%), Xining (94%)

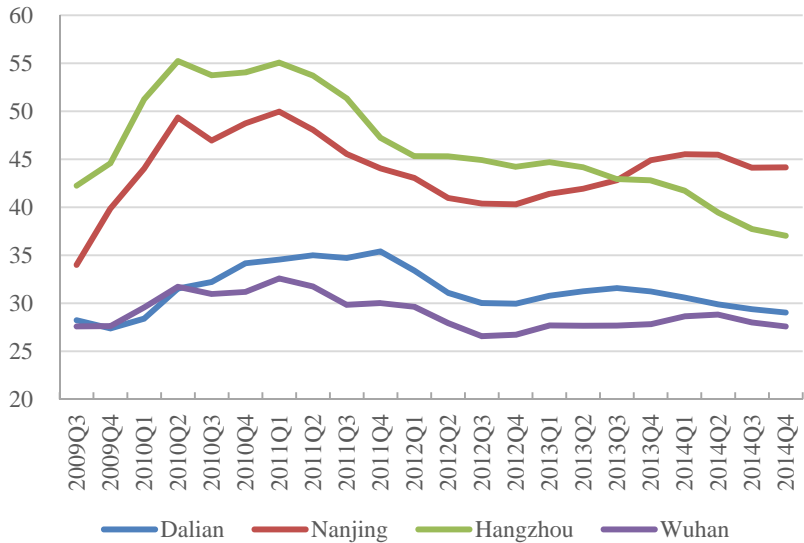
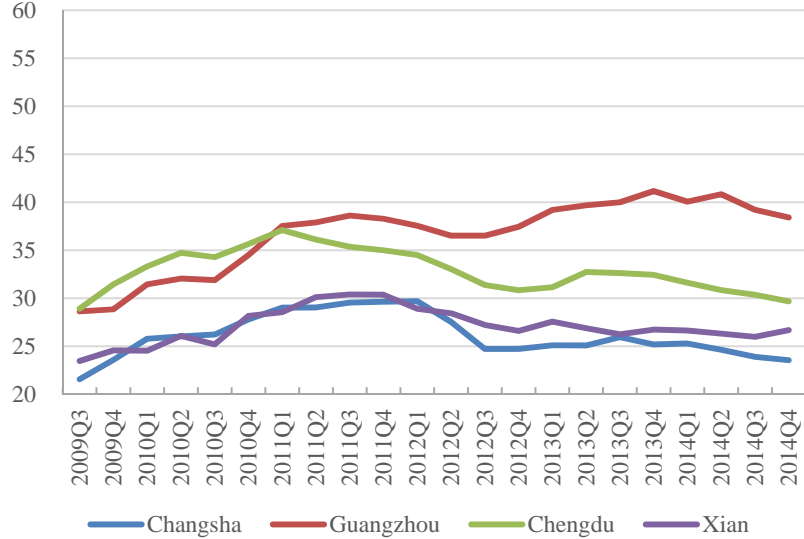
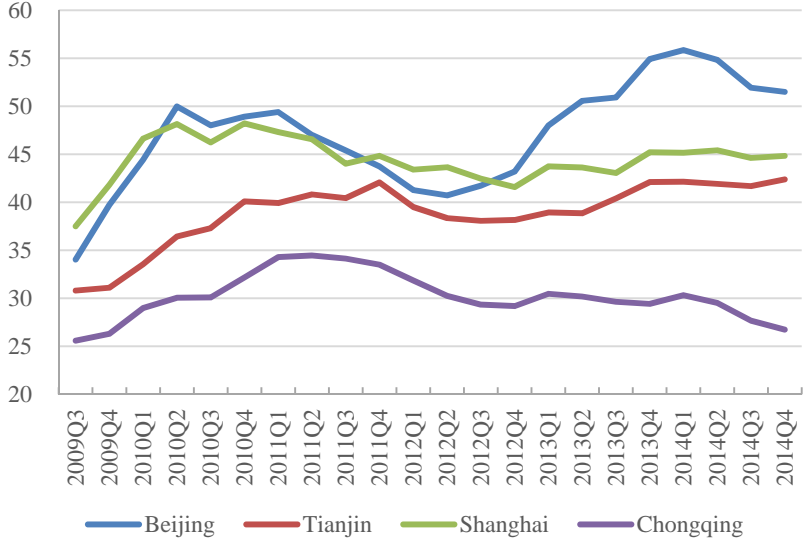




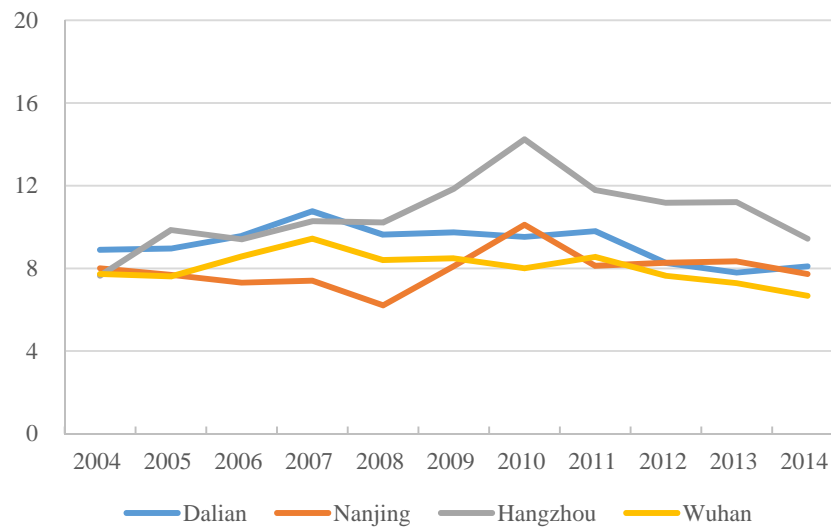
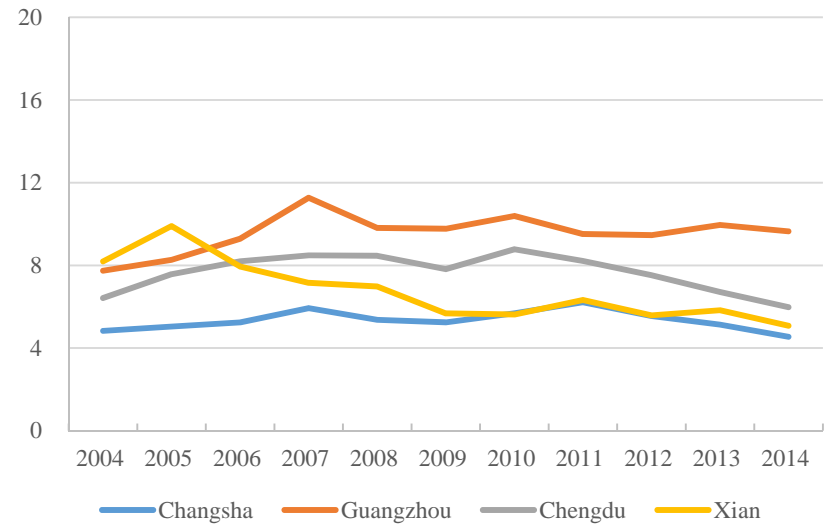
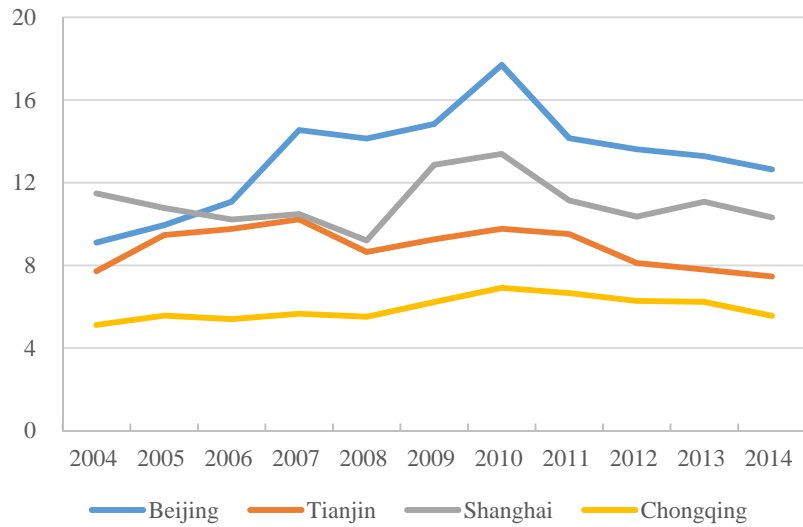




# Quarterly Price-to-Rent Ratios



# Annual Price-to-Income Ratios



# Conclusions

- Need more effort on measurement of prices in particular
  - China needs a S&P/Case-Shiller price index
  - Ability to gauge land market is a real advantage
- Keep context in mind when examining prices and quantities
  - Chinese prices started from very low base
  - China is a high growth and high volatility market
- Do not see much value in trying to put the label ‘bubble’ on these markets
  - Very short time series, with imperfect data
  - Still, no doubt Chinese housing markets are very risky
    - ‘Priced to perfection’ in the following sense: even small changes in expectations, absent countervailing rent increases, will lead to large negative changes in price levels per Poterba’s user cost framework

## Conclusions

- Beyond 'rich' pricing, supply appears to have outpaced demand over the last decade, not just the last year, in various markets
  - Primarily, but not exclusively, in the interior of the country
  - Any negative demand shock will occur in an environment of weak fundamentals in these places