Topics

1. Urban Housing Context
2. Price and Vacancy Rate Issues
3. Housing Affordability
4. Housing as a Financial Asset
5. Municipal Debt
1. Major housing policy epochs

Pre-1998: Employer-provided public housing as welfare benefit

1998: Privatization of public housing

1998-2006: Growth of housing market and decline in social housing investment

2007-2010: Rapid growth of housing price, central government intervention

2011-now: Housing market regulation and control; increased investment in social housing
1. Urban housing building type 2010

- Old-style buildings with shared kitchens and bathrooms, 11.0%
- Single-story old-style buildings, 11.0%
- Single-family house, 5.7%
- High-rise condos, 72.3%

Source: J. Man, *China’s Housing Reform and Outcomes*, Lincoln Institute: 2011
1. Housing unit size: rapid growth

The increase in urban dwelling area per capita is dramatic; due mainly to new construction but partly to omitting non-registered urban population.

<table>
<thead>
<tr>
<th>Year</th>
<th>Square meters per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>6.7</td>
</tr>
<tr>
<td>1987</td>
<td>12.7</td>
</tr>
<tr>
<td>1997</td>
<td>17.8</td>
</tr>
<tr>
<td>2007</td>
<td>28.3</td>
</tr>
<tr>
<td>2010</td>
<td>31.7</td>
</tr>
</tbody>
</table>

Average household size:
- 4.6 in 1978 (national);
- 3.0 in 2007; 2.9 in 2010 (both urban)

Source: J. Man, *China’s Housing Reform and Outcomes*, 2011
1. Ownership is also high & rising...

Urban average: 82.3%, 2007; 84.3%, 2010 and related to income

Income by percentile group of households

Source: J. Man, *China’s Housing Reform and Outcomes*, 2011
1. ...as is urban residential construction

Note: (a) Urban floor space completed plus rural floor space completed with construction that uses a ‘reinforced concrete structure’; rural is total minus estimated urban floor space completed. Sources: National Bureau of Statistics of China; authors’ calculations

2. Data: a work in progress

Although data are getting better…

• Data: 2007 and 2010 large-scale urban household survey
  – 250,000 households in 256 prefectural cities (2007 UHS)
  – 480,000 households in 265 prefectural cities (2010 UHS)

…problems persist with price indices and vacancy rates:

• Major price indices are flawed
• Little official data on vacancy rates
2. Main official price indices

Both based on newly built housing units

1. **Average Selling Price**: transaction price average—with no control for quality differentials

2. **70 Cities Index**: changes in average prices of units sold within individual housing complexes over their active sales period—biased as most expensive units are sold first.

Deng, Gyourko, and Wu have compared these two indices to a more accurate hedonic index, finding the 70 Cities Index always downward biased.
2. Price indices compared

Figure 6: Comparison of Real Newly-Built Housing Price Indexes (2006 Q1 = 100)

Source: NBSC and authors’ calculations; see the text for details.

2. More recent price data

Housing prices – 100 cities

From China Real Estate Price Index System: Index of Real Estate Prices in 100 Cities started in 2010

Cited in Hou, Ren, & Zhang, “Institutionalizing Local Property Tax in China,” Jan. 2013, p. 47

Housing prices - Beijing
2. Prices, land values vary together

\[ y = 0.7485x + 5026.1 \]

\[ R^2 = 0.787 \]
3. Affordability is an issue…

Housing price to income ratios (PIR) indicate that housing is becoming unaffordable for urban households in many cities.

<table>
<thead>
<tr>
<th>City</th>
<th>Price to Income Ratio, 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>9.33</td>
</tr>
<tr>
<td>Shanghai</td>
<td>9.81</td>
</tr>
<tr>
<td>Ninbo</td>
<td>8.33</td>
</tr>
<tr>
<td>Hangzhou</td>
<td>8.67</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>9.58</td>
</tr>
<tr>
<td>Guangzhou</td>
<td>5.16</td>
</tr>
</tbody>
</table>

Source: J. Man, *China’s Housing Reform and Outcomes*, 2011
3. ...and PIR also high internationally

<table>
<thead>
<tr>
<th>Country</th>
<th>Affordable PIR &lt;= 3.0</th>
<th>Moderately unaffordable PIR 3.0 to 4.0</th>
<th>Seriously unaffordable PIR 4.0 to 5.0</th>
<th>Severely unaffordable PIR &gt; 5.0</th>
<th>No. of cities</th>
<th>Average PIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>89</td>
<td>27</td>
<td>6.0</td>
</tr>
<tr>
<td>Canada</td>
<td>29</td>
<td>44</td>
<td>15</td>
<td>12</td>
<td>34</td>
<td>3.5</td>
</tr>
<tr>
<td>U.K.</td>
<td>0</td>
<td>0</td>
<td>38</td>
<td>63</td>
<td>16</td>
<td>5.2</td>
</tr>
<tr>
<td>U.S.</td>
<td>44</td>
<td>34</td>
<td>13</td>
<td>9</td>
<td>175</td>
<td>3.2</td>
</tr>
<tr>
<td>China 2010</td>
<td>1</td>
<td>12</td>
<td>18</td>
<td>69</td>
<td>265</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Source: Demographia (2009); China data

Source: J. Man, China’s Housing Reform and Outcomes, 2011
3. Recent curbs on housing finance

2005 – Min loan to value to 70% from 80%; Interest to 5.51%
2007 – Min down payment for second home to 40%
2010 – Min down payment for second home to 50%
   And even higher for third+ homes
   – No home purchase without local registration (hukou)
2011 – 20% capital gains tax on homes held less than 5 yrs.
   – Min down payment for second homes to 60%
   – Restriction on purchases to one home
2013 – No loans for third+ homes

4. Housing—not just a home

Many urban households own a second (or more) unit.

**Second+ home ownership rate in 2010:**

<table>
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<tr>
<th>City</th>
<th>Second+ Home Ownership Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>12.0%</td>
</tr>
<tr>
<td>Hangzhou</td>
<td>18.2%</td>
</tr>
<tr>
<td>Shanghai</td>
<td>18%</td>
</tr>
<tr>
<td>Guangzhou</td>
<td>15.8%</td>
</tr>
<tr>
<td>Changzhou</td>
<td>25.3%</td>
</tr>
<tr>
<td>Dongguan</td>
<td>39%</td>
</tr>
</tbody>
</table>

National Average of 265 cities: 11.5%

Source: UHS 2010 survey

These are often held unoccupied, but vacancy rates are scarce. Informed estimates are that 65 million urban units are vacant (20%) with 30% vacant in Beijing.
3. Why hold units vacant?

Commodity residential market yields and mortgage rates, Q1/2005-Q4-2011

4. Housing—not just a home

- Household saving rate remains high (25-30%); financial markets are undeveloped; housing is a preferred asset.
- Continuing urban growth—15 million per year—buoys demand.
- Mortgages have high down payments; many purchases made with cash; much intra-family financing.
4. Housing—not just a home

Outstanding mortgage debt as a proportion of GDP, 2005-2010

Households are not highly leveraged with mortgage debt

5. Municipal debt

- Tax reform of 1994 shifted revenues from municipal to central government, leaving municipalities with expenditures that exceeded budgetary revenues.
- Municipalities have closed the budget gap with revenue from land sales—converting rural to urban land and then leasing newly urbanized land.

5. Municipal debt

- Municipalities are not allowed to borrow or sell bonds
- To work around this, they create Local Government Financial Vehicles, endowing them with recently urbanized land
- These LGFVs then borrow from banks using their assets as collateral
- Local governments bear responsibility for repayment
- Proceeds are mostly used for infrastructure—often not revenue producing
5. Municipal debt

Shares are of 36 provinces, 392 municipalities, 2779 counties; Estimated number of LGFVs from 6500 to 10,000 at end 2010.

5. Municipal debt

Estimated size of total municipal debt varies

<table>
<thead>
<tr>
<th>Item</th>
<th>China Banking Regulatory Commission</th>
<th>People’s Bank</th>
<th>National Auditing Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Estimate</td>
<td>June 2010</td>
<td>End 2010</td>
<td>End 2010</td>
</tr>
<tr>
<td>No. of LGFV</td>
<td>--</td>
<td>10,000</td>
<td>6576</td>
</tr>
<tr>
<td>Debt Size</td>
<td>¥ 7.6 trillion</td>
<td>¥ 14 trillion</td>
<td>¥ 10.7 trillion</td>
</tr>
</tbody>
</table>

By end 2012, estimates range to ¥ 20 trillion ($3.1 trillion), nearly 40% of GDP. Compare to US$1.28 trillion of US treasuries owned by China.
5. Municipal debt

- Municipal debt is difficult to document because it is off the books of municipalities.
- Another audit is underway by the National Audit Office.
- About 80% of the debt is bank loans.
- In 2010, 47% was collateralized by land.
- Project revenues are insufficient to pay debt service in many cases.
- Given the exposure of banks, risks of contagion are high.
- Municipal debt entails more risks than housing prices—it is the credit bubble to worry about.
China: Housing Market and Municipal Debt Risks

Wisconsin Real Estate & Economic Outlook Conference: The Shifting Landscape: What’s Driving Change?

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Lincoln Institute of Land Policy
October 17, 3013