

China Planning Network (CPN)

Beijing

July 14-20, 2008

CPN Urban Housing Congress 2008

“Housing affordability in China: A stock
and flow approach including urban
farmers’ housing”

By Alain Bertaud

<http://alainbertaud.com>

duatreb@msn.com

Questions asked by CPN

- Is the urban housing price in China too high?
- Can Chinese families, both urban residents and rural migrants, afford it?
- Are government policies to stabilize housing price effective?

A. We need to redefine affordability and the way we monitor housing standards and market prices

1. Redefining affordability
2. Defining a stock and flow approach to affordability

B. Application to housing policy in Chinese cities

1. common supply side housing strategies to avoid
2. Recommended supply side strategies in the Chinese context
3. Farmers' housing: an asset in housing strategy for the poor

Redefining affordability

- By definition every households living in a city is able to afford the dwelling it currently occupies
- However, the poorer urban households live in housing units with very low floor space and infrastructure standards
- There is implicitly a minimum housing standard below which existing housing is deemed unacceptable
- The question of affordability, therefore, cannot be separated from setting minimal **politically** acceptable standards for floor space and infrastructure

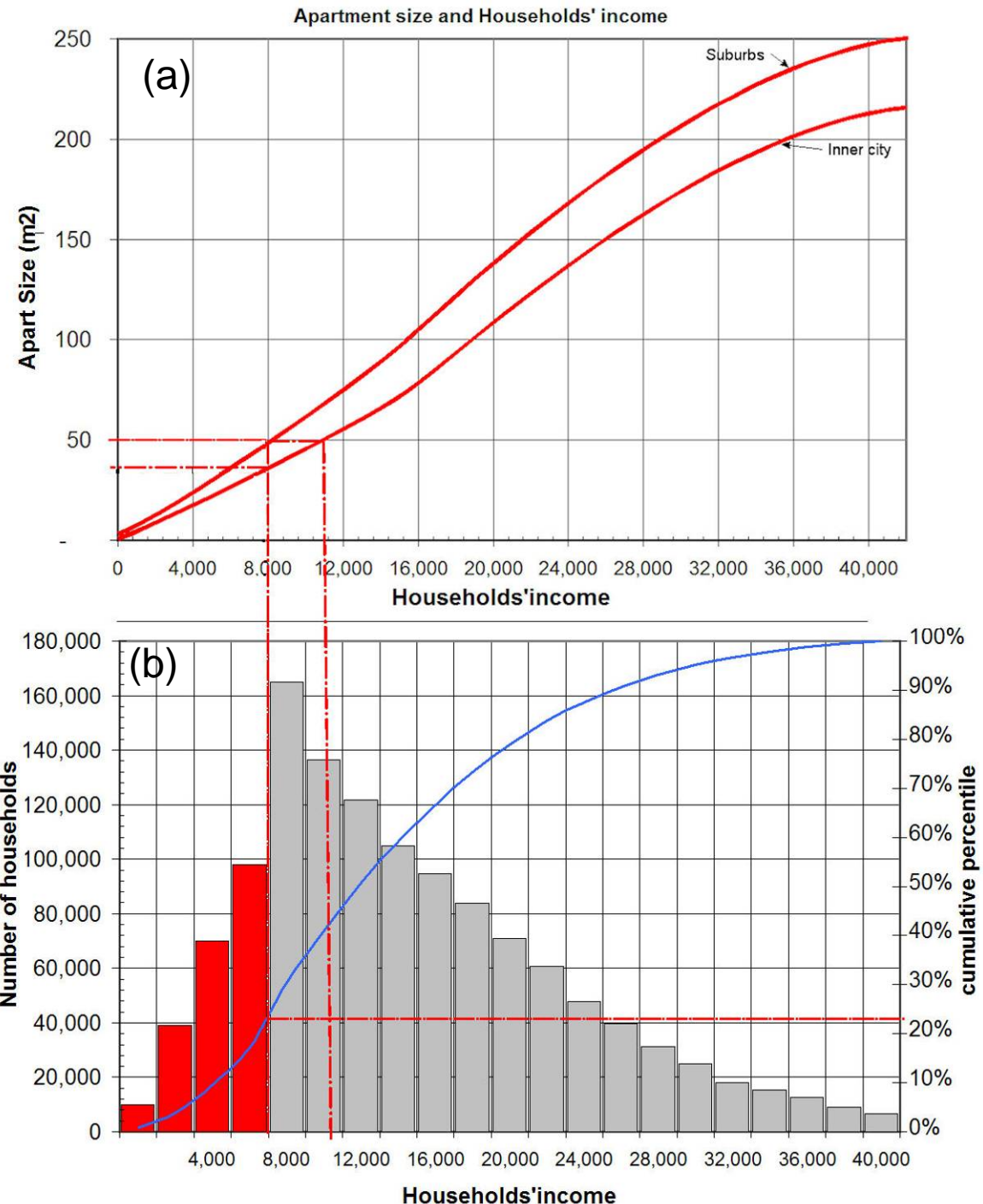
Redefining affordability

- We have to recognize that, worldwide, most governments' policies based on **supply side subsidies** have been unsuccessful, some even had disastrous consequences for the poor.
- Most advanced economies are shifting to **demand side subsidies** to help increase lower income groups housing standards
- The most successful housing outcomes (Singapore, Sweden) has been achieved when the income of the great majority of households have reached a high level. Without urban households income growth there can be no successful housing policy
- Increasing the housing standards of all low income households over time is the only valid test for a housing policy
- Too often the outcome of a housing policy is only measured through the improved housing standards of a few number of selected beneficiaries.

To explain the stock and flow methodology I will use a model representing a Chinese city of about 3.5 million people. The data on households' income, housing stock standards and typology is derived from a composite of Chinese cities for which I have partial data. (I could not find one Chinese city for which all the data to run the model was available)

Redefining affordability

- Graph (a) shows the relationship between households' income and floor consumption under current market conditions in a given city
- Floor consumption for a given income varies with location (inner city – suburbs)
- Graph (b) represents households annual income distribution in the base year.
- Linking the two graphs through their common X axis we can calculate the number of households who can afford a specific standards under current market conditions
- For example, about 135,000 households (represented in red on graph (b)) or about 23% (right axis) of the population can only afford a dwelling below 50 m² in the suburbs and below 35 m² in the inner city (graph (a))
- We could then define affordability by saying that under current market conditions, 23 % of the population cannot afford a housing unit above 50 m²
- Without referring to a housing standards affordability has no meaning



The housing stock of a Chinese city could be usefully divided into 7 main types:

1. Farmers' housing rental
2. Farmers' housing ownership
3. Traditional dwelling types (pre 1947)
4. Privatized “danwei” housing built before 1985
5. Privatized “danwei” housing built in or after 1985
6. Commodity housing
7. Townhouses and villas

There might be some other housing types in China, like subsidized housing or government rental housing, but the total number is usually so small that these housing types do not much influence the overall housing market

Housing types in Zhengzhou

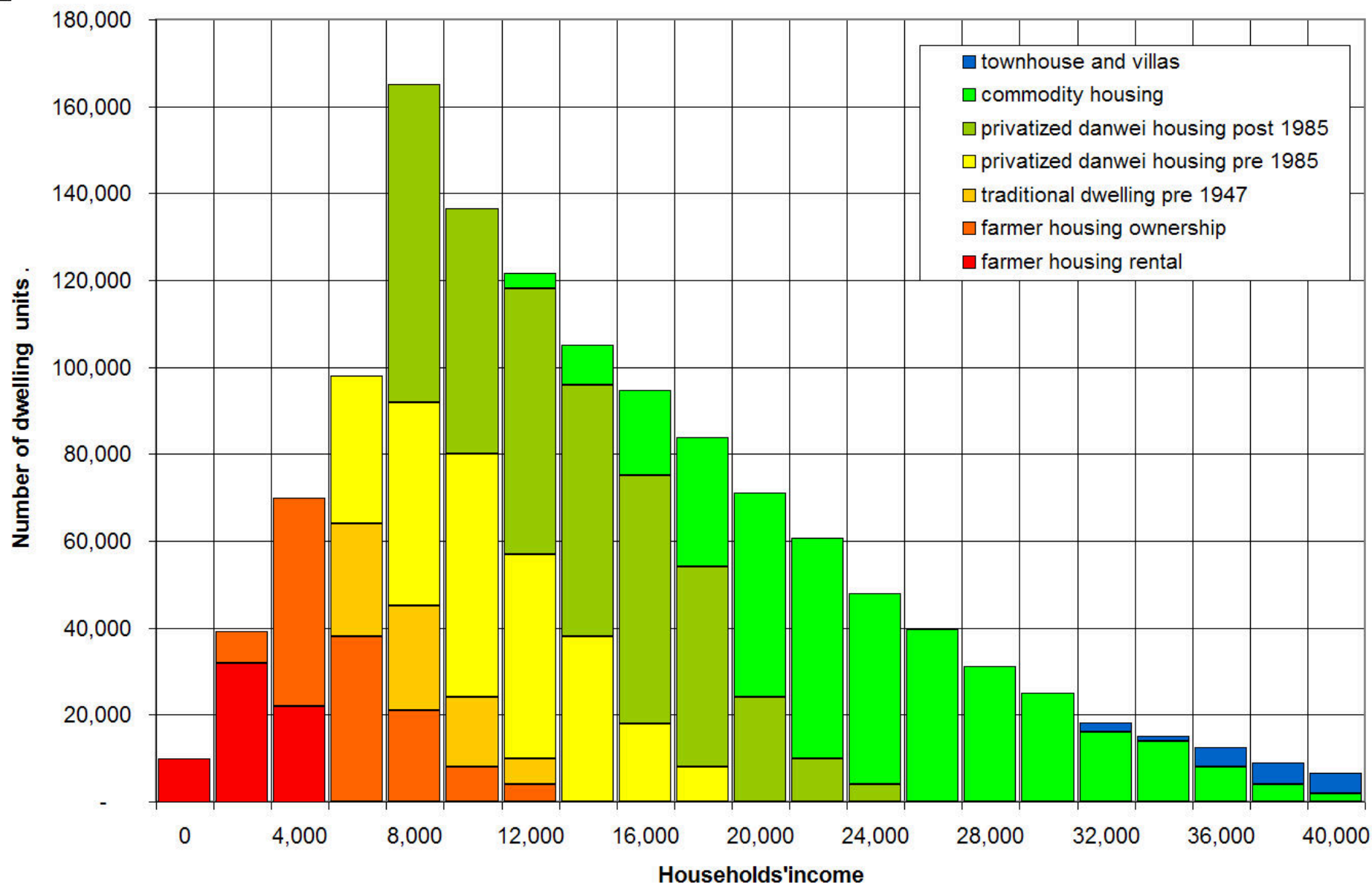


Farmers' housing enclave
in the center of Zhengzhou

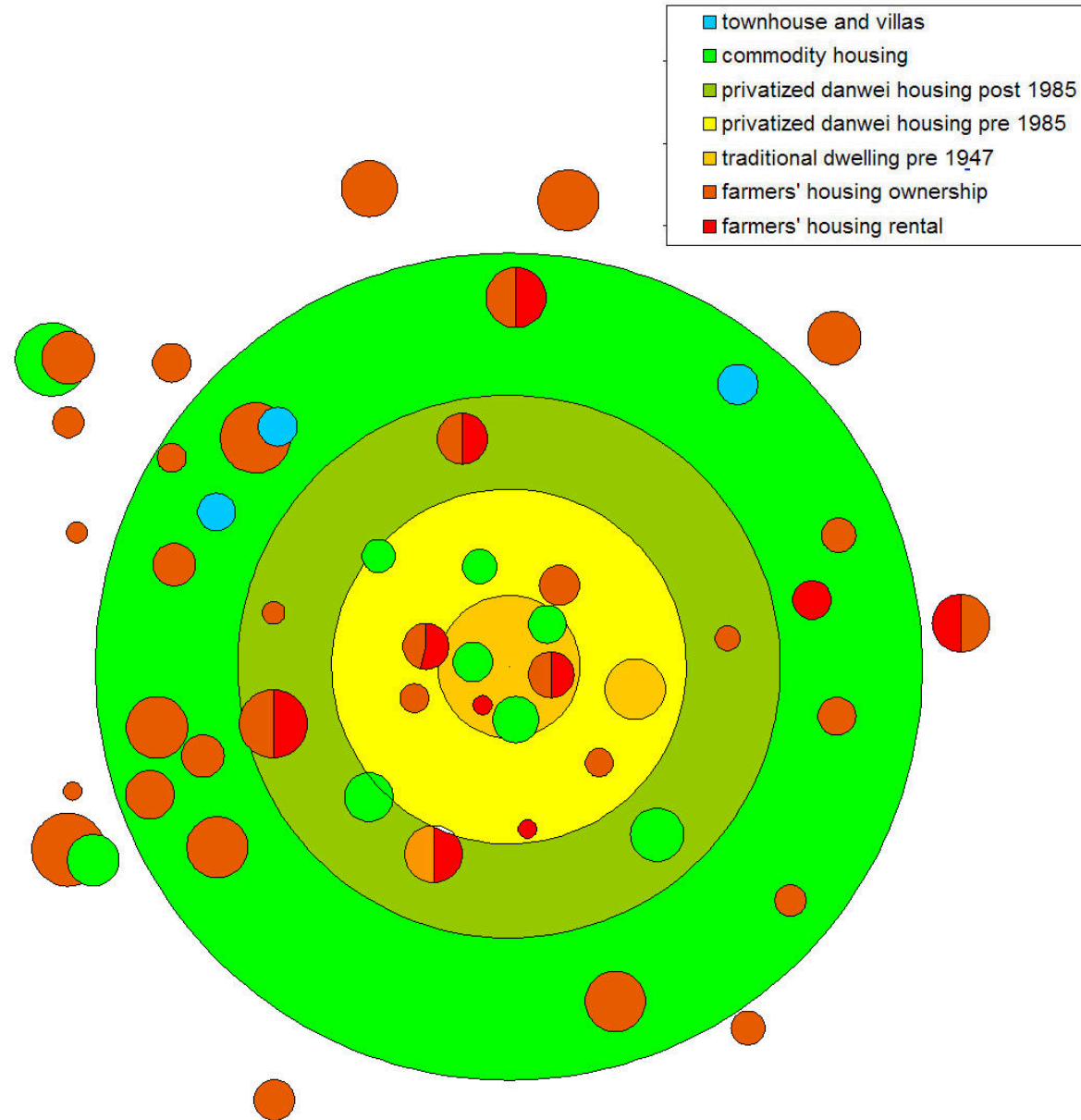
Privatized danwei housing
pre 1985



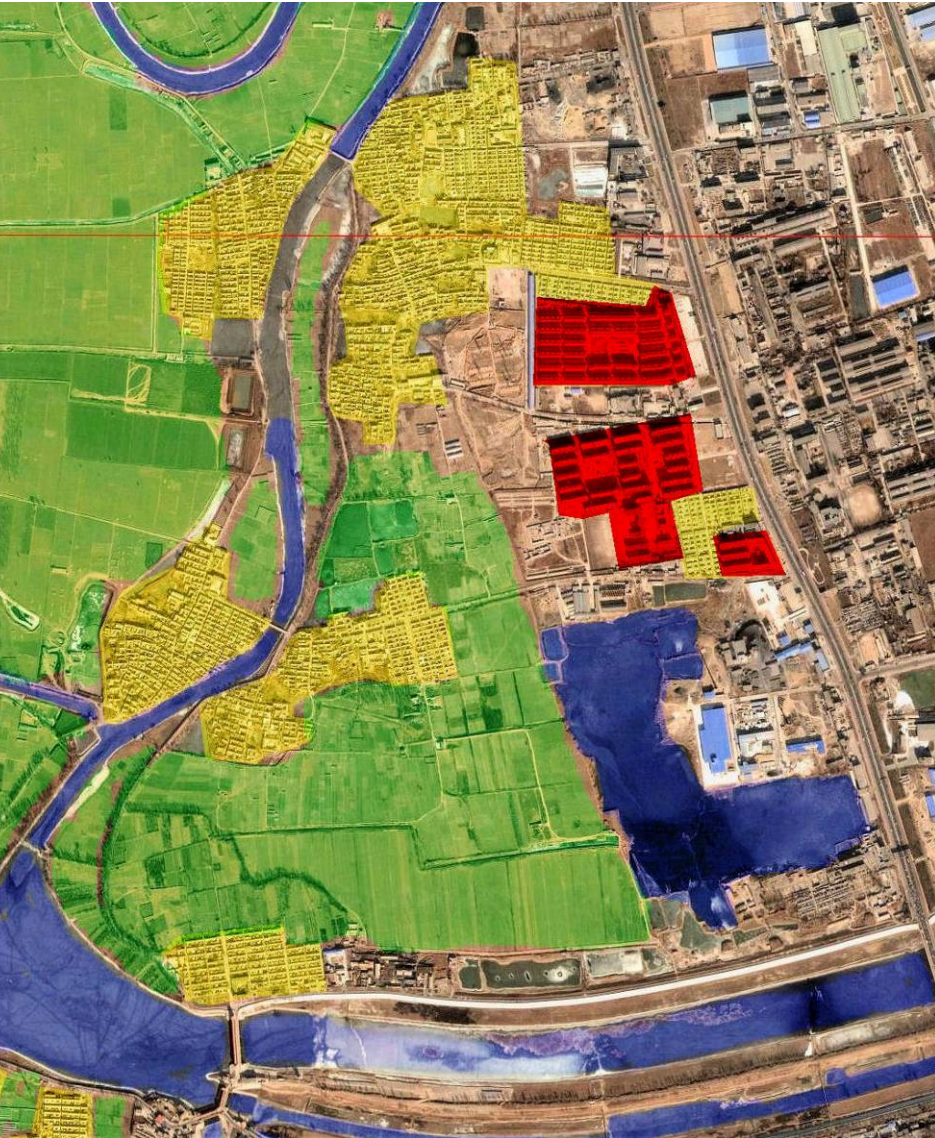
Housing typology distributed by income groups (base year)



- The spatial dimension of the housing typology is important.
- The different types of housing (with exception of farmers housing) were built at different time and therefore have a dominant location
- from the user point of view location is important; one type cannot be substituted for another type if the location is very different.
- Transport infrastructure could also rapidly modify the relative price of different housing types



Commodity housing replacing farmers' housing in a northern suburb of Tianjin



Flow Analysis

The previous images were showing the image of the housing market at a fixed date (housing stock). Flow analysis shows what is likely to happen in the short and medium term when :

1. The city population increases due to:
 - a) the formation of new households and
 - b) migration
2. Households' income increases due to an increase in urban productivity
3. the housing stock increases because of new housing being built
4. Some part of the housing stock decreases due to demolition

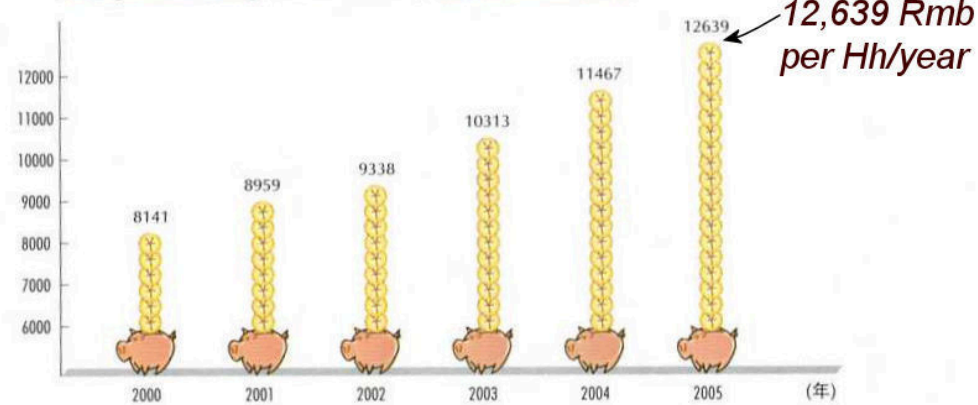
In China the number of housing units lost because of demolition is very large compared to many other countries

Example of changes in flows in Tianjin between 2000 and 2005

(from Tianjin statistical year book 2006)

- Households' income has grown at a 9% annual rate between 2000 and 2005 !
- Residential floor space per person has grown by 4.3% per year!
- Residential expenditure per household is only 13.3% of total consumption expenditure

> 城市居民人均可支配收入(元)
Per Capita Annual Disposable Income of Urban Households (RMB)



> 2005年城市居民人均消费性支出构成(%)

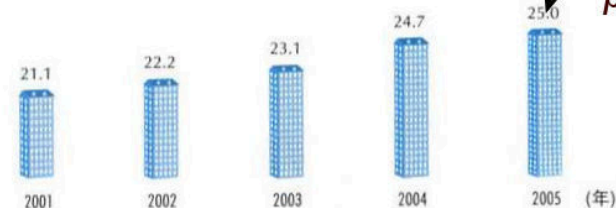
Composition of Per Capita Annual Expenditure for Consumption of Urban Households in 2005 (%)

13.3% of disposable income for housing



> 城市居民人均住宅建筑面积(平方米)

Per-capita Floor Space of Urban Residential Buildings (m²)

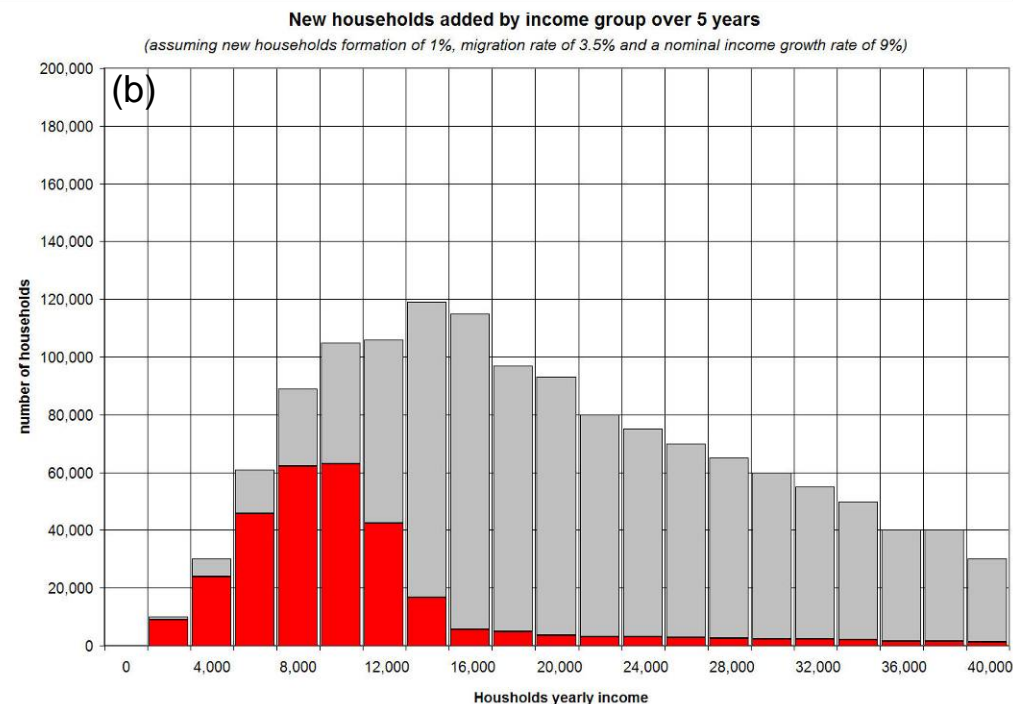
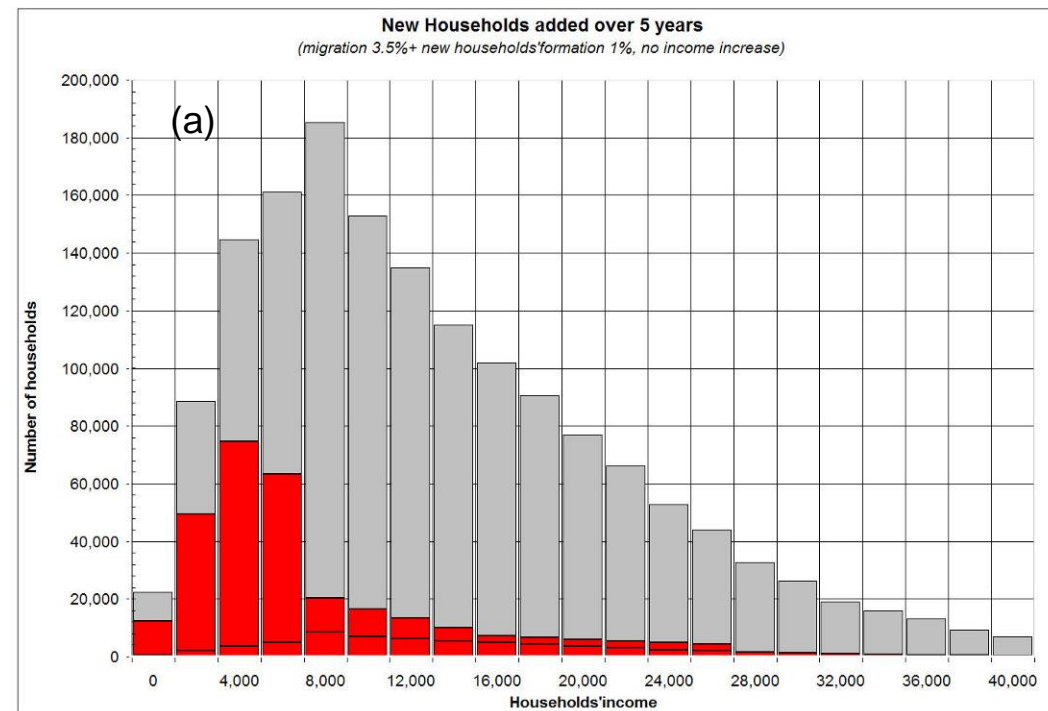


Flow analysis: increase in number of households, and in households' income.

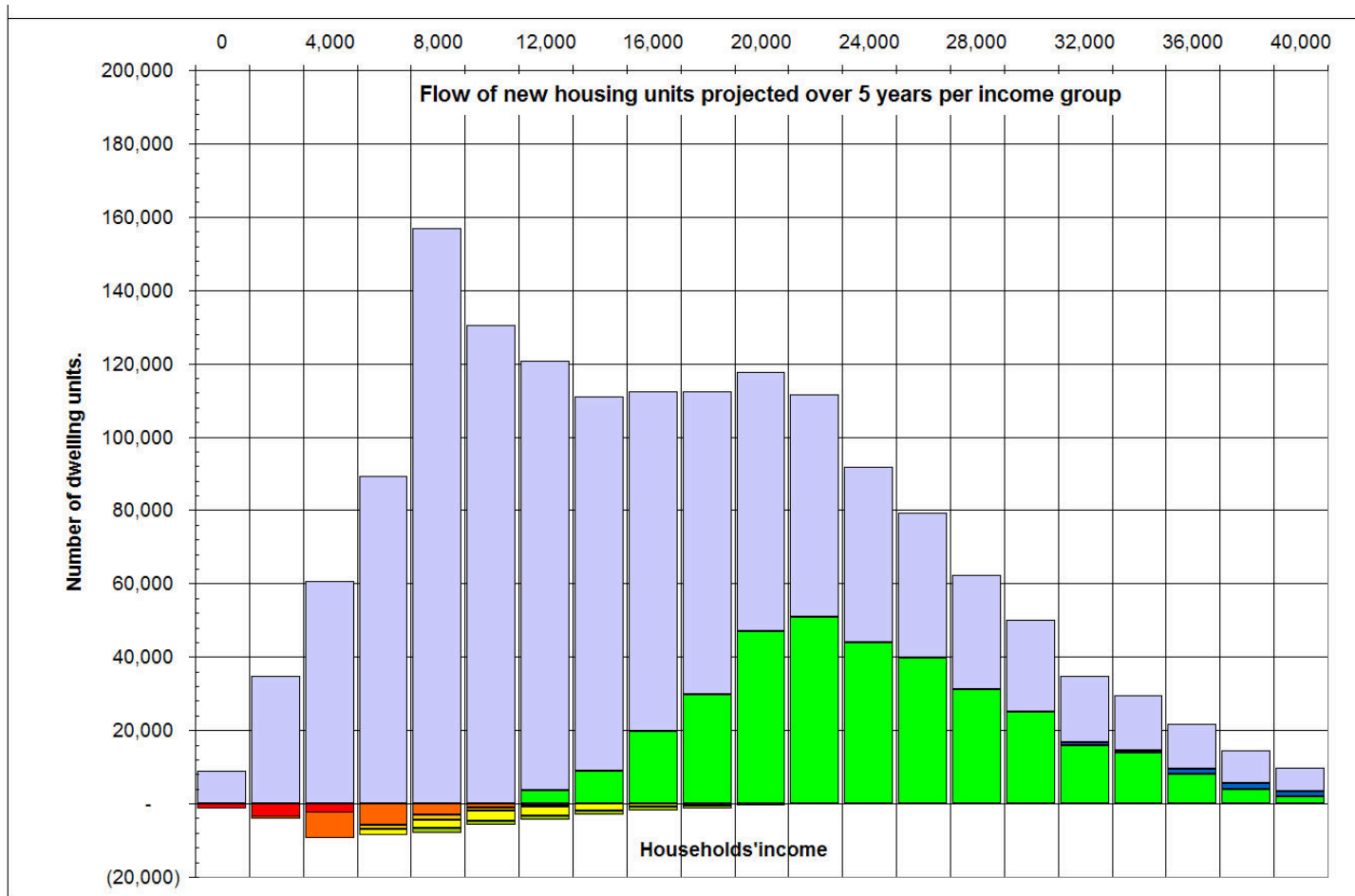
Graph (a) shows the new distribution of households after 5 years by income group, assuming a 3.5 % yearly rate of migration and a 1 % increase in households formation, and no income increase.

Most of the migrant population (shown in red) has been added to the lower income groups, while the new household formation is proportional to the population in each income group.

Graph (b) shows the same data but with an income increase similar to Tianjin's between 2000 and 2005



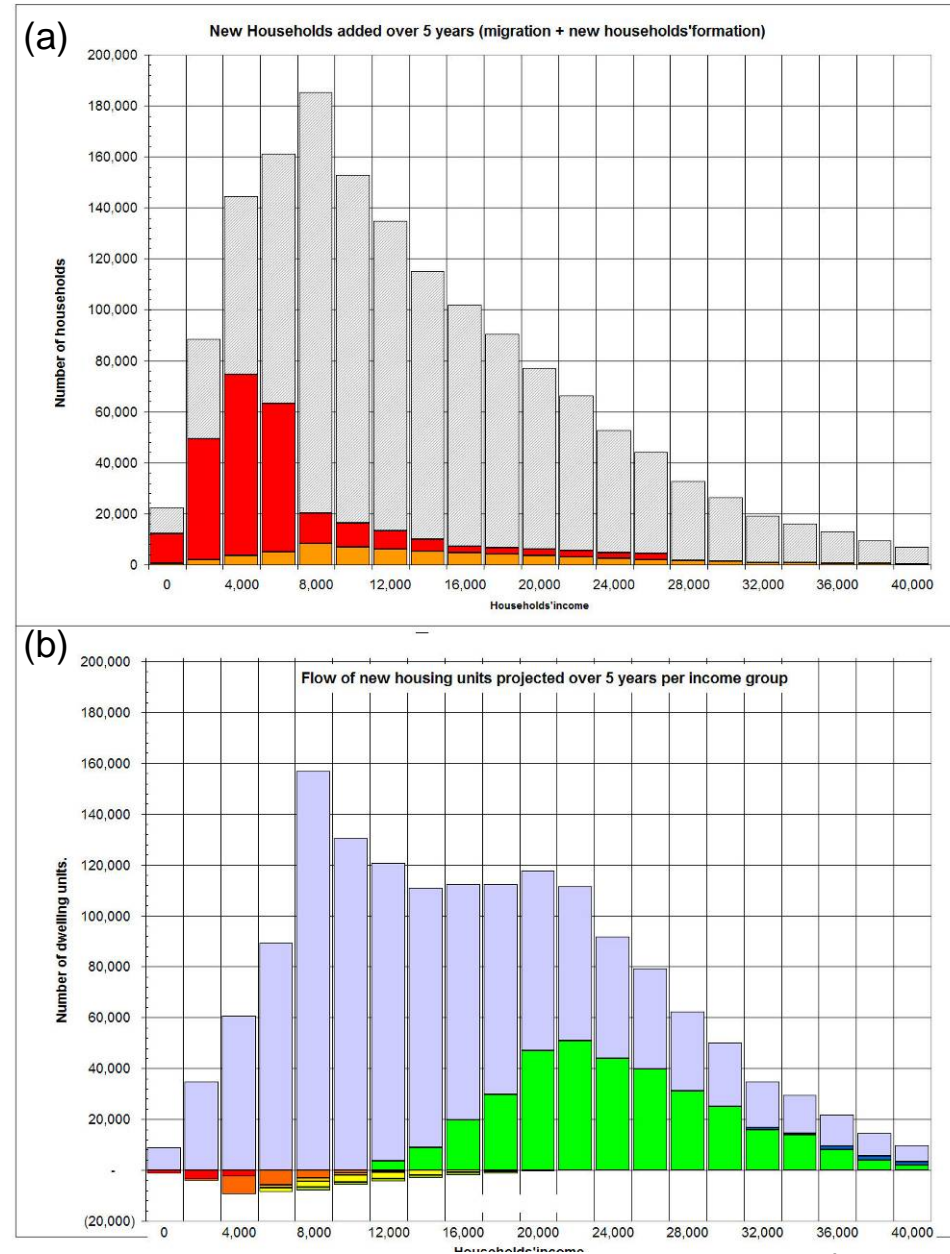
Typical scenario: change in flows -new housing units built over 5 years



- The new flow of housing is mostly constituted by middle income and higher income commodity housing
- Although new farmers' housing get built during the period, the overall flow is negative because of demolition both in central city and in the suburbs.
- The other 3 types, traditional housing, “danwei” <85 and “danwei” >85 decrease because of demolitions.

New households income distribution is inconsistent with price of new housing units

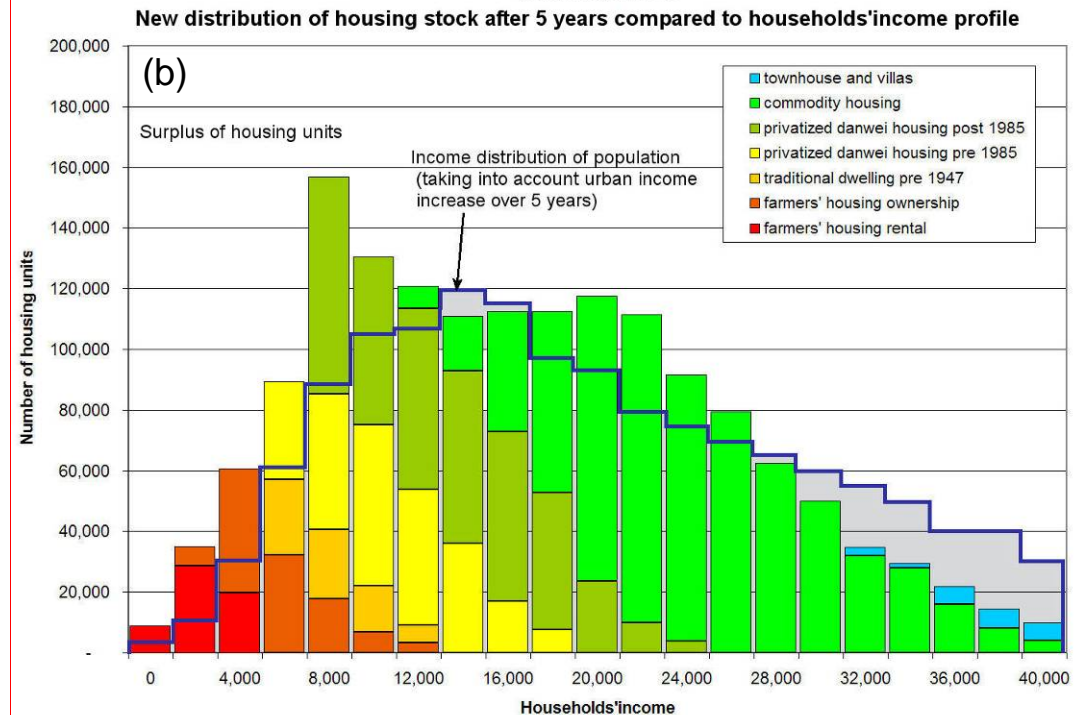
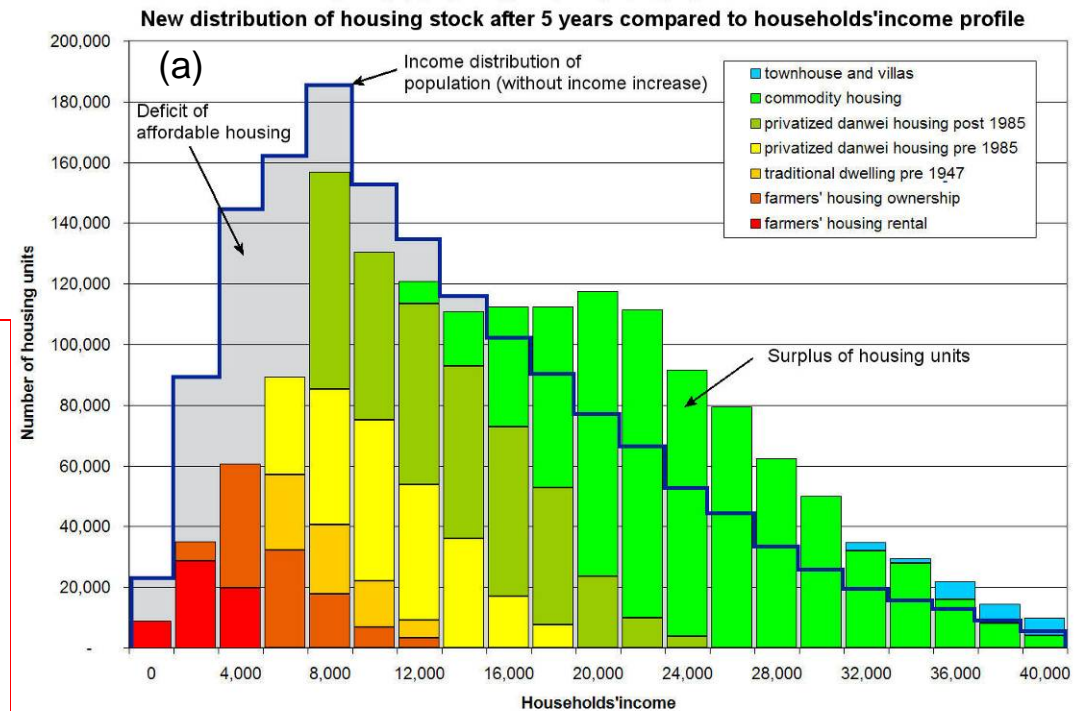
- Graph (a) shows the new households income profile after an influx of poor migrants over 5 years
- Graph (b) shows the price profile by income group of the flow of new units.
- The number of new commodity housing units built seems to be too large compared to the number of households who can afford them.
- What is likely to happen?



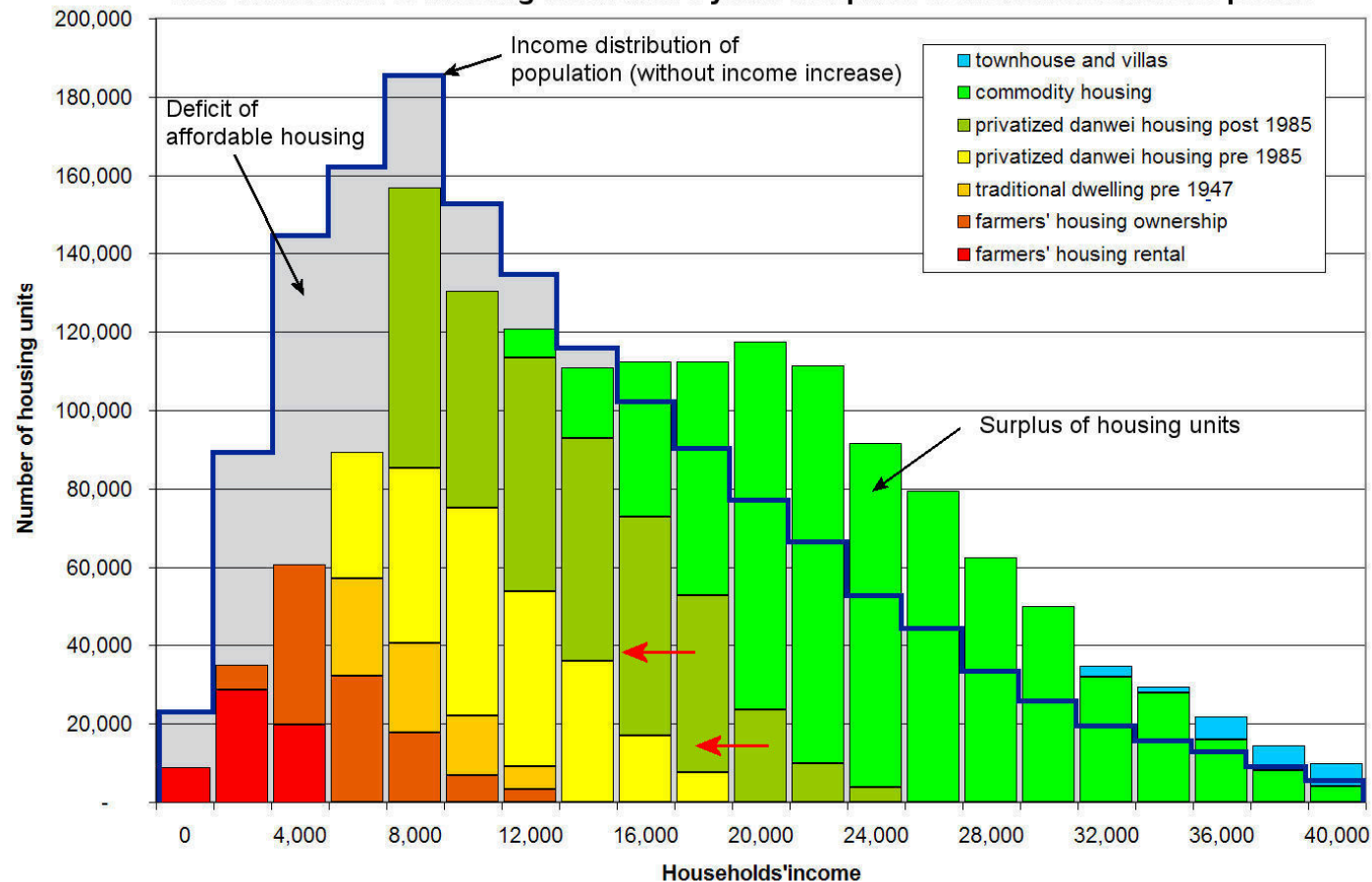
Comparison between the new stock of housing after 5 years under 2 households' income distribution scenarios

The graphs show two different outcomes when we compare the new housing typology profile with 2 alternative households' income distribution.

- On graph (a) households income has not changed over 5 years; There is a surplus of middle-high income housing and a shortage of low income housing
- On graph (b) households income has increased by 9%/year as in Tianjin, the outcome is a surplus of low income housing and a shortage of upper income housing.
- How will the market sort out the respective shortage and surpluses under the alternative scenarios?

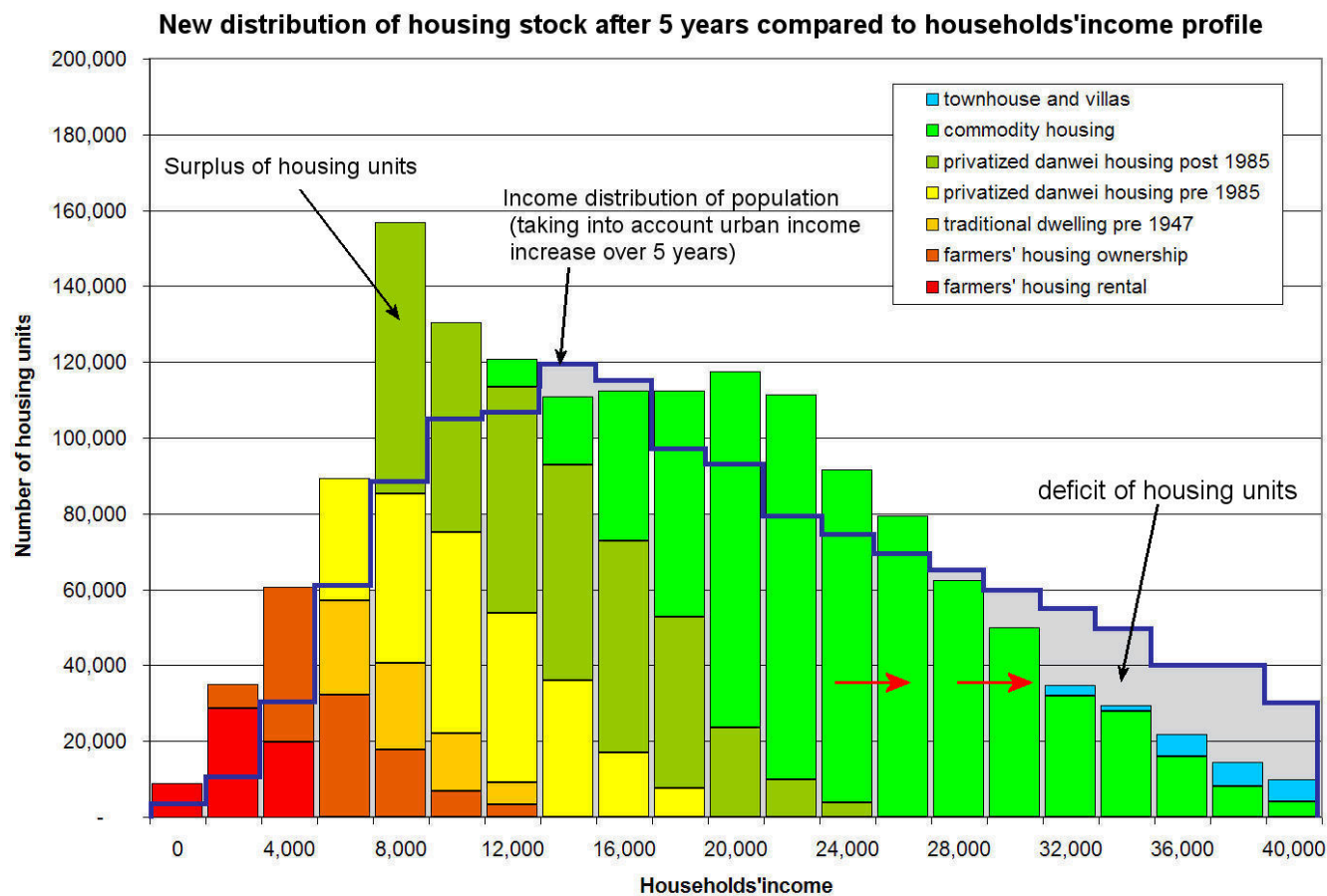


New distribution of housing stock after 5 years compared to households' income profile



The surplus of housing units affordable to households with an income between 16,000 and 40,000 yuan will result in a decrease in price for the entire housing stock within the category, until the surplus has been absorbed. Eventually the least desirable units will decrease in value and become affordable to lower income groups. The speed of this filtering process depends on the number and speed of transactions in the entire stock.

In this case, it is likely that the filtering of the surplus of middle income units will take several years before it reaches the lower income groups, alleviating their shortages only then. Meanwhile the shortage of units affordable to households with income below 8,000 yuan will result in overcrowding within the available units and a general loss of standards.



- In this second scenario (high increase in households' income):
- Shortage of high income units
- Surplus of low and middle income units
- Medium term market response: increase in prices of higher income units, lower prices of low and middle income units.

Because of the unpredictability in the changes in households' income, in housing prices and in the flows of new housing it is impossible to “plan” an exact match between supply and demand for each income groups

The market will eventually adjust between surplus and deficit by income category on conditions that:

- Yearly supply of new housing units is at least equal to migration + new households formation;
- Sales transactions of existing units can happen quickly and without high transactions costs

If these 2 conditions are not met, the mismatch between supply and demand will always results in higher housing prices and a deterioration of housing conditions for all income groups, but more dramatically for the poor

Application to housing policy for Chinese cities

- monitor the price of all housing units transactions, do not focus only on new units
- Pay attention to the existing housing of low income groups and recent migrants: monitor standards, prices and rents;
- Farmers' housing ,rental or ownership, is the type of housing the most immediately responsive to demand from low income groups

Existing housing for sale
as advertized by a real
estate broker in Suining
(Sichuan) in 2006

The market of existing
housing is often ignored
in China, statistics on
prices and affordability
focusing mainly on new
housing.

5楼 遂州南路 一室一厅 清水房 51.5平方米 3.8万 738元/㎡ 编号:619 97年建成 两证已办	5楼 南小区 一室一厅 清水 41.1平方米 4.3万 900元/㎡ 编号:829 99年建成 两证未办			
5楼 新市场旁单位宿舍 一室一厅一卫 清水 64平方米 5.5万 860元/㎡ 编号:345 89年建成 两证已办	5楼 南兴街 二室二厅一卫 新房 57.4平方米 5.7万 990元/㎡ 编号:558 95年建成 三个月内办证	5楼 油房街 二室二厅一卫 清水房 67.24平方米 6.4万 950元/㎡ 编号:699 2003年建成 两证未办 可更名	5楼 天宫路 二室二厅一卫 新房 90平方米 8.1万 900元/㎡ 编号:492 2004年建成 两证未办 直接更名	5楼 东南角 二室一厅一卫 简装 71平方米 9万 1208元/㎡ 编号:688 2003年建成 两证已办
	5楼 新市场单位宿舍 一室一厅一卫 简装 64平方米 6万 938元/㎡ 编号:828 88年建成 两证已办		5楼 育才路单位宿舍 三室一厅一卫 简装 80平方米 8.5万 1062元/㎡ 编号:558 88年建成 两证已办	5楼 东南商场 二室一厅 简装 71.45平方米 9.5万 1300元/㎡ 编号:645 2000年建成 两证已办
	5楼 育才大厦 一室二厅一卫 简装 已售 6万 968元/㎡ 编号:441 92年建成 两证已办			5楼 蓬溪大厦 二室二厅一卫 精装 85.99平方米 9.5万 1106元/㎡ 编号:662 2000年建成 两证已办
6楼 南小区 二室一厅一卫 未装修 69平方米 4.8万 695元/㎡ 编号:591 1999年建成 两证未办 可更名	6楼 南津桥 二室二厅一卫 简装 80平方米 7万 875元/㎡ 编号:632 99年建成 两证已办	6楼 电江路附近 四室二厅一卫 简装 108平方米 8.4万 780元/㎡ 编号:255 96年建成 两证已办		
6楼 南兴街 二室二厅一卫 新房 57.4平方米 5.1万 890元/㎡ 编号:558 2005年建成 三个月内办证	6楼 西门单位宿舍 二室一厅一卫 简装 64平方米 7.5万 1172元/㎡ 编号:729 1994年建成 两证已办	6楼 南小区单位宿舍 二室二厅一卫 精装 71.64平方米 8.5万 1097元/㎡ 编号:648 96年建成 两证已办	6楼 育才路单位宿舍 二室二厅 简装 91平方米 8.8万 967元/㎡ 编号:830 93年建成 两证已办	6楼 城北粮站附近 二室二厅一卫 新房 89平方米 9.3万 1050元/㎡ 编号:357 2005年建成 两证未办
6楼 渠河路 二室二厅一卫 清水房 91.5平方米 6.5万 710元/㎡ 编号:635 96年建成 两证已办		6楼 开发区花园小区 二室一厅一卫 精装 73平方米 8.5万 1164元/㎡ 编号:449 2005年建成 两证已办	6楼 开发区南兴街 三室二厅二卫 新房 132平方米 9万 680元/㎡ 编号:158 2003年建成 两证已办	6楼 蓬溪大厦 三室二厅一卫 简装 108平方米 9.5万 876元/㎡ 编号:744 1995年建成 两证已办
			6楼 明月桥 三室二厅一卫 精装 92平方米 9万 980元/㎡ 编号:170 2002年建成 两证已办	
			6楼 明月桥花园小区 三室二厅一卫 简装 97平方米 9万 928元/㎡ 编号:427 2003年建成 两证已办	

Supply side strategies to avoid:

- **Governments should not attempt to fine tune the supply of commodity housing through regulations**
- Government actions attempting to modify market supply by imposing quotas, price controls or floor size limits are usually counterproductive as they usually result in reducing the number of housing units supplied.
- Government subsidies reducing the interest rate paid by housing developers are also counterproductive as they allow developers to keep a large inventory of vacant housing units rather than forcing developers to reduce prices to put unsold units immediately on the market.

Recommended supply side strategies

- Remove barriers that prevent or slow down existing housing transactions, for instance:
 - Administrative bottlenecks
 - High transactions costs such as high registration or legal fees
 - High capital gains on the resale of owner occupied housing
 - Administrative restrictions in housing units resale
- Review regulations that contribute to the high price of residential land in new developments:
 - Restrictions on land conversion within the urban perimeter
 - Restrictive floor area ratios (FAR)
 - Excessive and uniform land development standards for all housing types

Upgrading the infrastructure and urban environment in existing low income residential areas seems to be the only type of supply side subsidies that may work and be able to reach the poor.

The experience of other countries suggests that well designed demand side subsidies are the only ones that can improve the housing consumption of low income urban households

Policy for farmers' housing in down town enclaves and at urban periphery of Chinese cities

- Farmers enclaves in urban area are specific to China urbanization.
- Within the limits of the village collective, urban farmers' housing is completely demand driven
- Rental housing provided by farmers is the only type of housing affordable to low income migrants
- Providing the enclaves are not demolished, rental units built by farmers can respond rapidly to increasing demand from migrants
- Demolition of farmers' housing enclaves progressively destroy the only rental housing available to low income migrants, even if farmers households owners are relocated into better housing
- Quotas and restrictions on land conversion are mostly responsible for the large scale demolition of farmers' housing

Commodity housing
encroaching on
farmers' housing in a
northern suburb of
Tianjin

