NTA Workshop II
NUPRI, Tokyo, Japan

NTA Project: China Case

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NTA Project: China Case

1. Database we used
2. On hand results and the problems
- Further work and discussions

I Databases (1)

- For the public account

--China Statistical Yearbook

--Population census data

China has population census every ten years, and the latest one is in year 2000.

--National Health Service Survey Data

--Some specific yearbooks

Almost all the departments of the central government in China have statistical yearbook, such as Finance Statistical Yearbook, Education Statistical.

I Databases (2)

- For the Private account
  - Rural Household Income Survey (RHIS2003)
    - The Ministry of Agriculture has an annual survey for rural people. The China Center for Economic Research co-organized the survey in 2003 with the MOA. But it lacks of detailed consumption information.
    - We will use these data to generate for the year 2002 estimates the components of lifecycle deficits, asset reallocation, transfer transfers in the National Transfer Flow Account.
  - National Aged Population Survey by National Committee for Old Age Affairs (NAPS2004)
    - The survey by National Committee for Old Age Affairs was conducted in 2005, Information concerning the aged population's health and economic status are reported. More luckily, the survey also include information concerning their adult child, including income and expenditure, which can be used as household survey data. We use the data to estimate the age profile of expenditure on healthcare, education and others for the urban area and the intra household transfer accounts for both rural and urban.

1. Lifecycle deficit
1.1 Consumption

- ***Public consumption (1)***
- Use the structure of Government Expenditure to estimate government consumption
- Note1: Some items can not be classified definitely. For example, Operating Expenses of the Departments of Transport and Commerce includes input to Vocational secondary school in those sectors and some training expense to the staffs, so the government education expenditure is under estimated and what we estimated is mainly focus on school education.
- Note2: Government consumption in the rural may over-estimated because the rural areas get less government services than the urban. We now just distribute some of government consumption by per capita across the whole country.

- Step 1: Pick up what we are sure that they are consumptions or not from the government expenditures. Then part of the remains is consumption and we should know its proportion to the total. The ratio should be:

R= (Government Consumption in the national account – Consumptions we take from the Government Expenditure) / (Government Expenditure - Consumptions we take – Non Consumptions we take from the Government Expenditure)

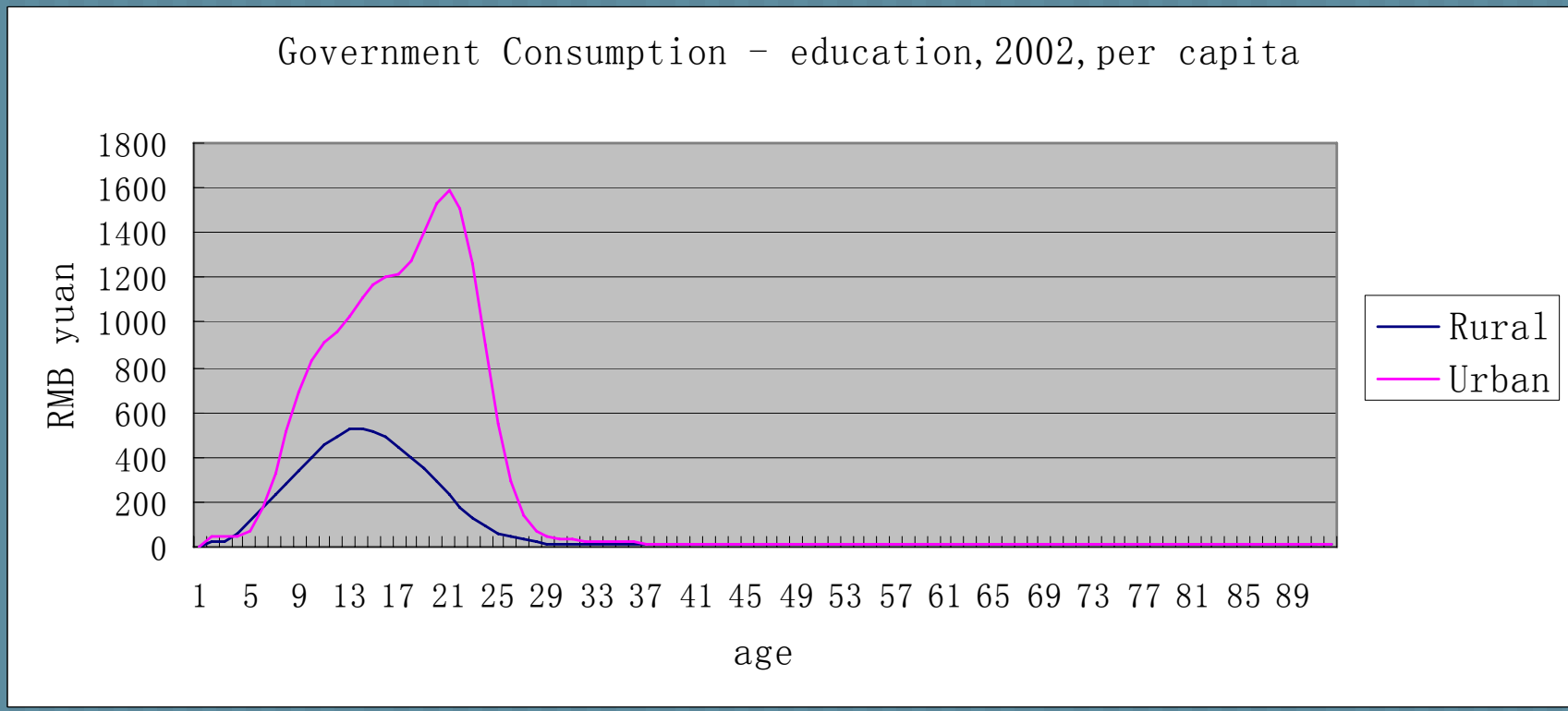
- Step 2: Assume that the proportions of consumption in the remains are consistent across all different items. So the government consumption of the remaining items is:

Government Consumption = those we picked up from the government expenditure + R * the maims

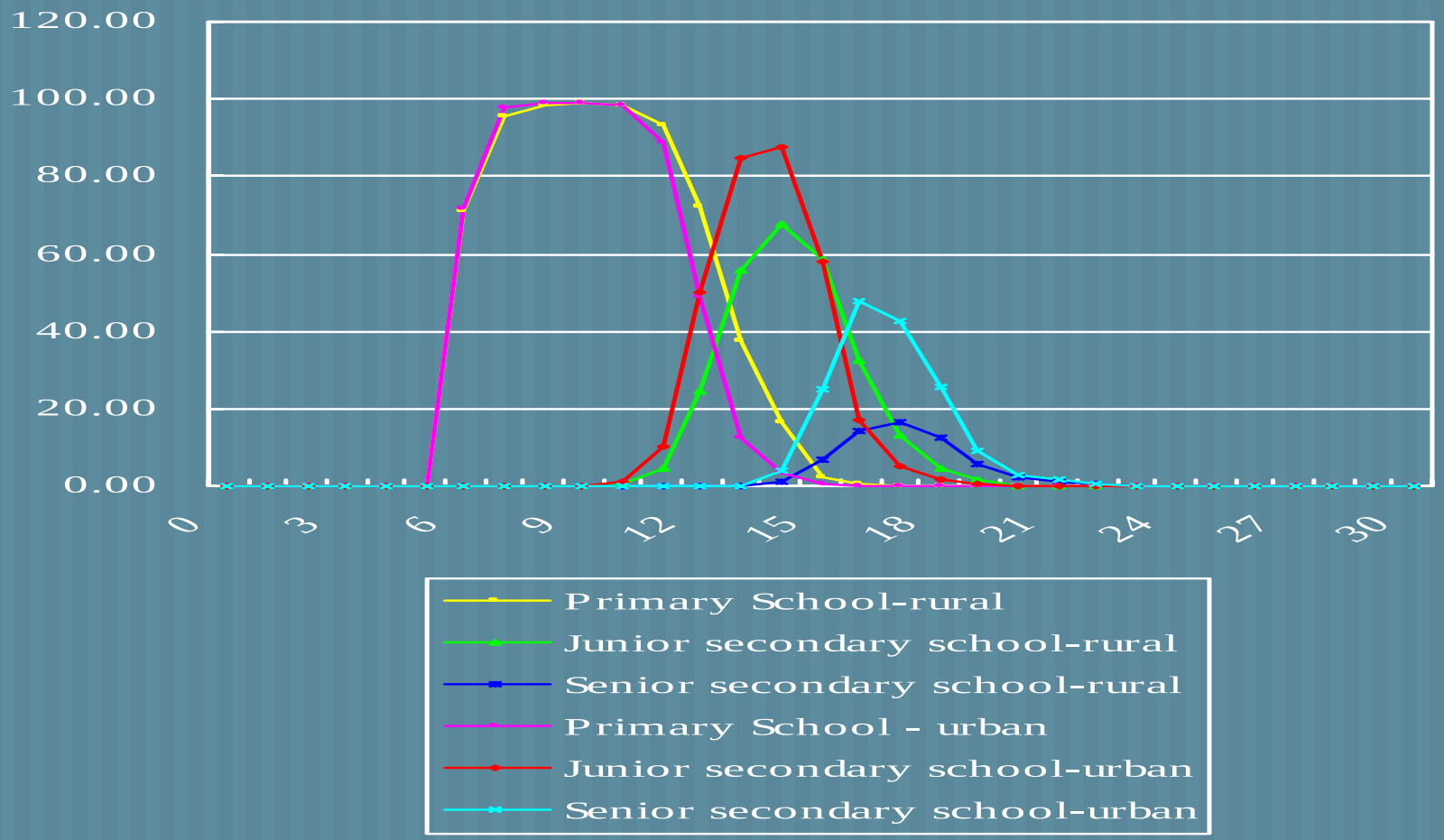
- Step 3: Separate the GC as rural and urban as possible as we can according to who will get the government services or where the GC is located.
- Step 4: Distribute these GC by some related age profile.

1. Lifecycle deficit
1.1 Consumption

- ***Public consumption (2)***
- **Education:** Distribute the total government education consumption by the budgetary expenditure of school at different level. Calculate enrolment from the population census data 2000. Assume that all student of the same level get equal government services.
- **Health:** Separate health account into public health (in urban and rural) and social health care services. Distribute the public health expenditure per capita by urban and rural. Social health care services expenditure is distributed by the age profile of health expenditure from the National health Service Survey 2003 by the MOH China.
- **Other Public consumptions** are allocated according to the target of each component of public expenditure. For example, expenditure for supporting agricultural R&D and Expenditure for supporting agricultural are distributed among rural populations in proportion to self-employee income.

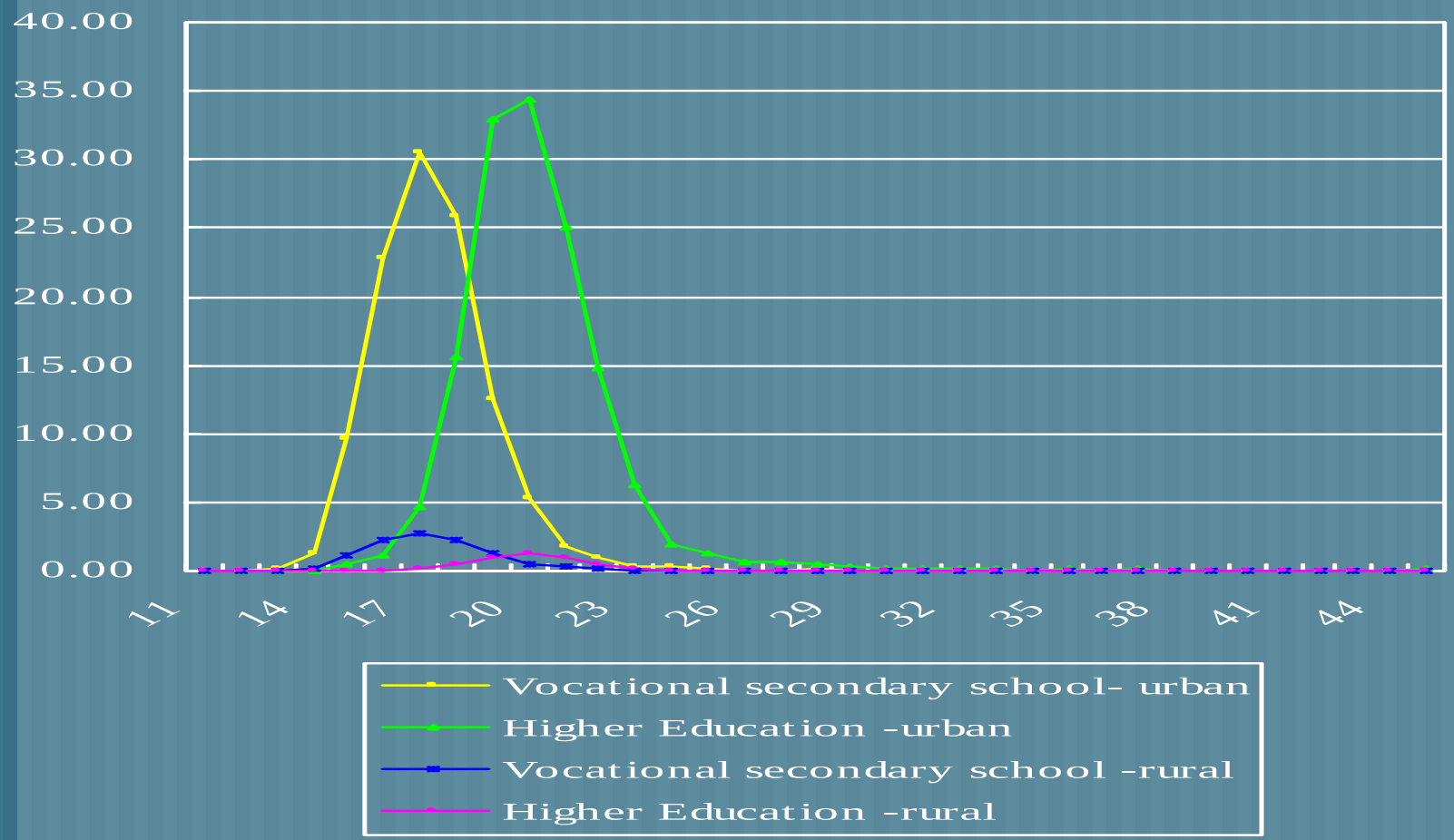

Government Consumption - education, 2002, per capita
RMB yuan
1800
1600
1400
1200
1000
800
600
400
200
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
age
Rural
Urban

School Enrollment Rate by Levels (1)

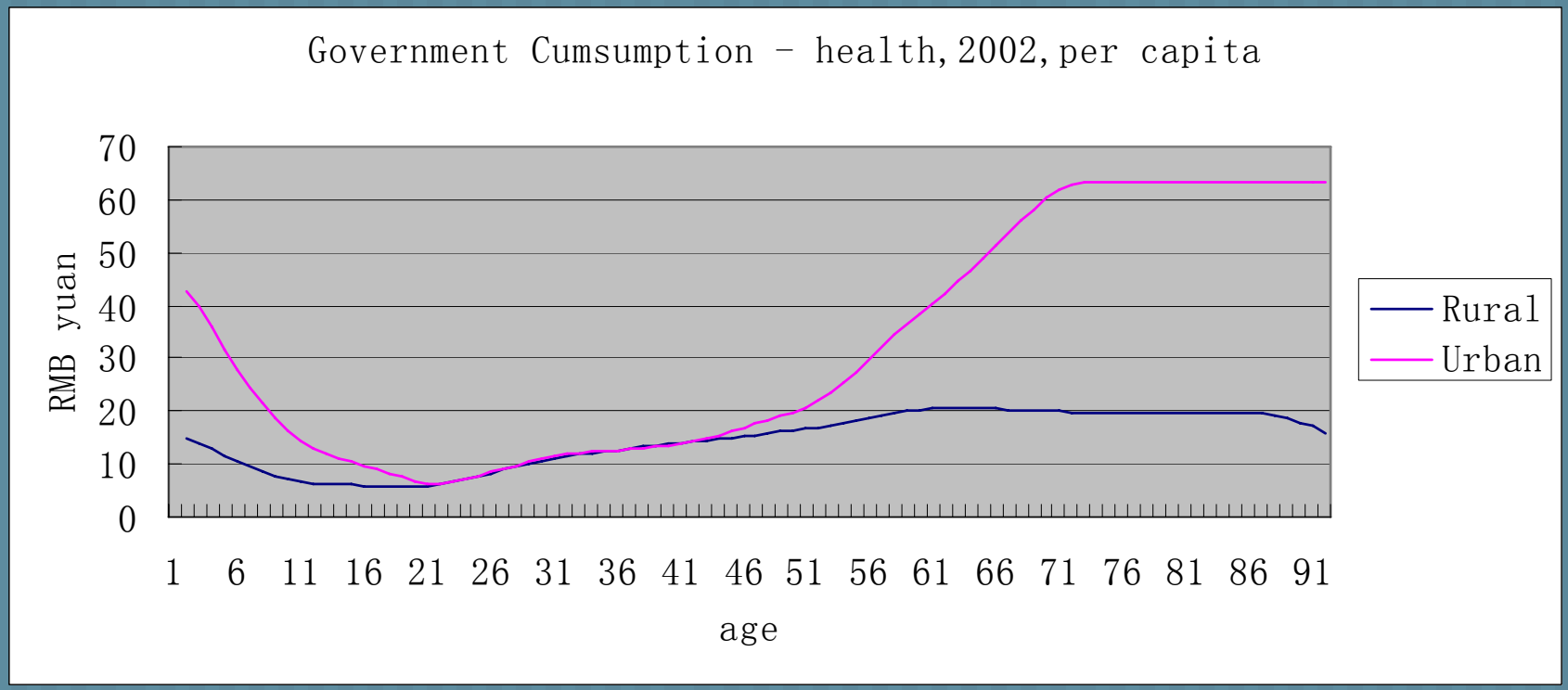


Source: China Population Census, 2000

School Enrollment Rate by Levels (2)



Source: China Population Census, 2000



Source: National Health Service Survey, MOH, 2003

1. Lifecycle deficit
1.1 Consumption

- ***Private consumption (1)***
- Data source: *Income and Expenditure Survey (IES2003), National Health Service Survey (NHSS2003), National Aged Population Survey (NAPS2004)*
- Aggregate data concerning household consumption and its component are available in *China Statistic Yearbook.*

1. Lifecycle deficit
1.1 Consumption

- ***Private consumption (2)***
  - **Rural**

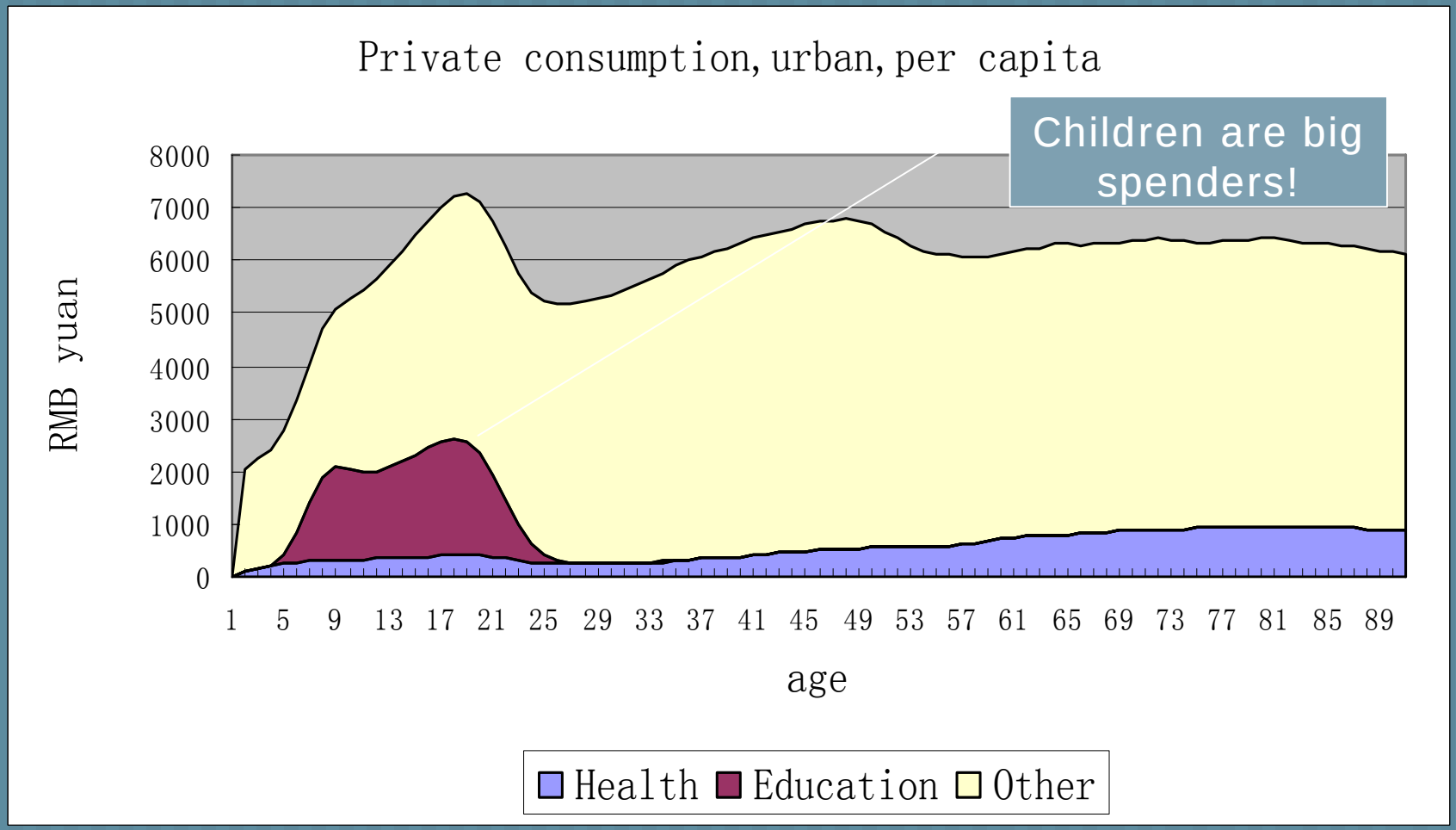
    Note1: the education expenditure is estimated by the *NAPS2004, because the lack of related data in the* IES2003
  - **Urban**

    Note1: Only the education expenditure on household head's children are reported, so it would be under estimated if there were some other family members still in some school.

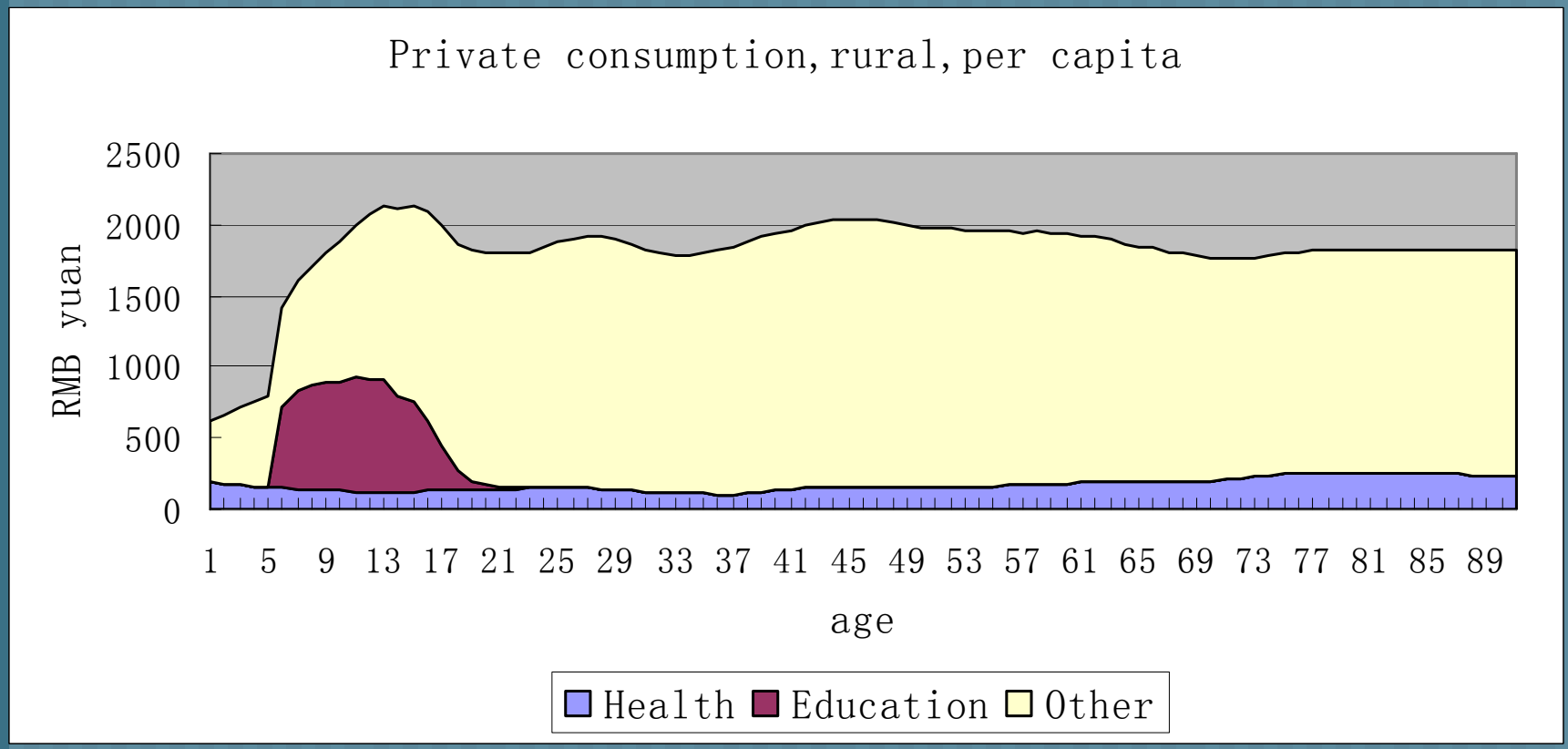
    Note2: Families with some of their children in school did not report who are in school. We just assume that the youngest ones upper 6 years old are at school.

    Note3: No enough data on health. Only those who answer the question" which of the following is the main expenditure in your family last year" as healthcare reported the total amount spent on health. So it may be over estimated

Private Consumption-urban



Private Rural



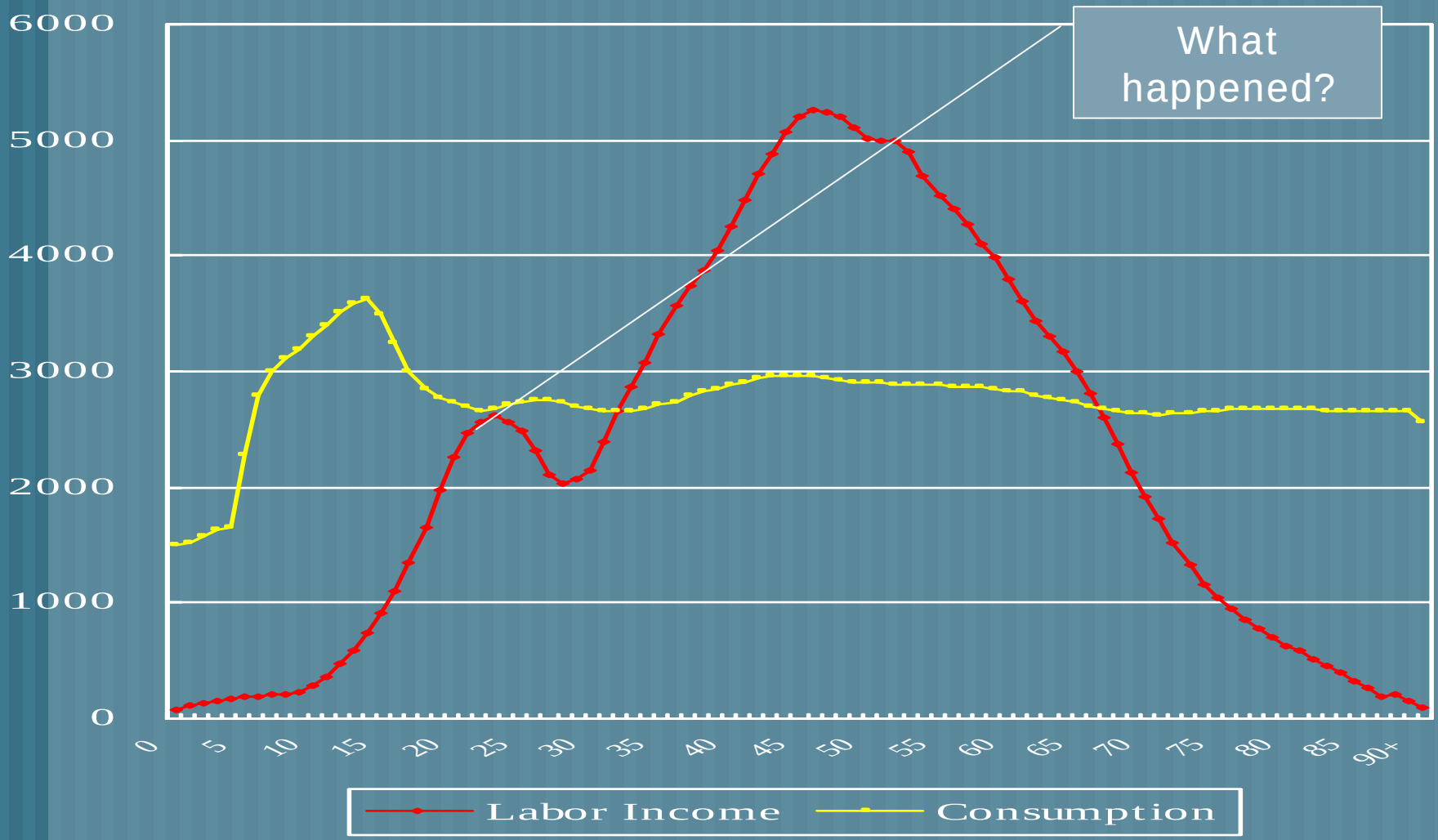
1. Lifecycle deficit
1.2 Labor income

- ***For the rural Labor Income***
- Income from labor working for a factory or government is regarded as earnings here.
- Income from Agriculture is regarded as self- employee income. All household members whose work status is Self-employment are classified into different age groups and apply regression method.
- Labor income = earnings + 2/3 self employee income.

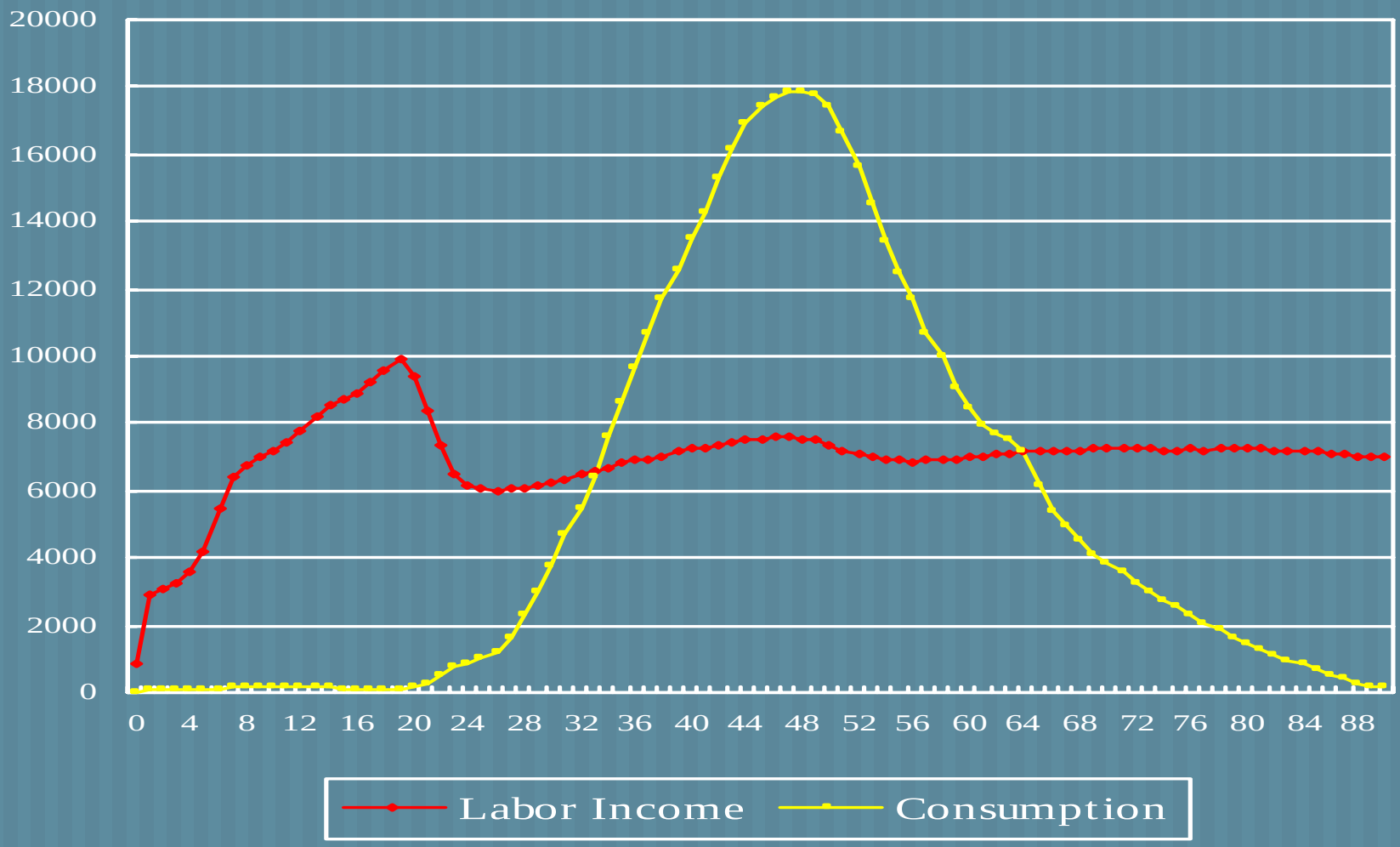
1. Lifecycle deficit
1.2 Labor income

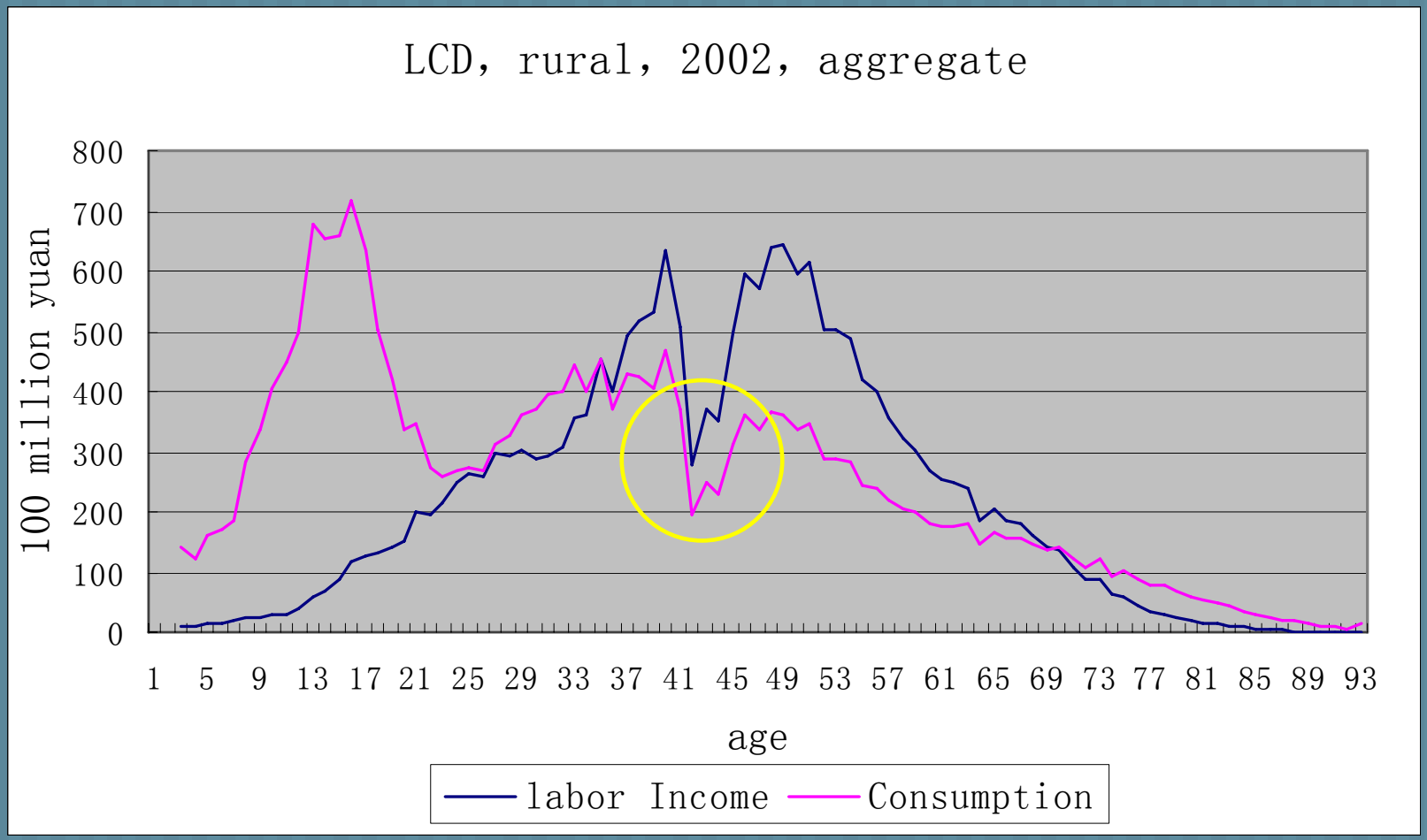
- ***For the urban Labor Income***
- Only the detailed information concerning the investigated aged person and one of her/his adult children, as well as the child's spouse (the adult child is regarded as the household head). Other house members just report her/his age and sex.
- Use only the age and earnings of the adult child to constructed the age profile.
- Only total household income and earnings are reported and can not classify the self-employee income. For self-employee income, we just use the same age profile as earnings.
- Income from Management (regarded as self-employee income) is a small share of the total income in the urban. (around 4%)

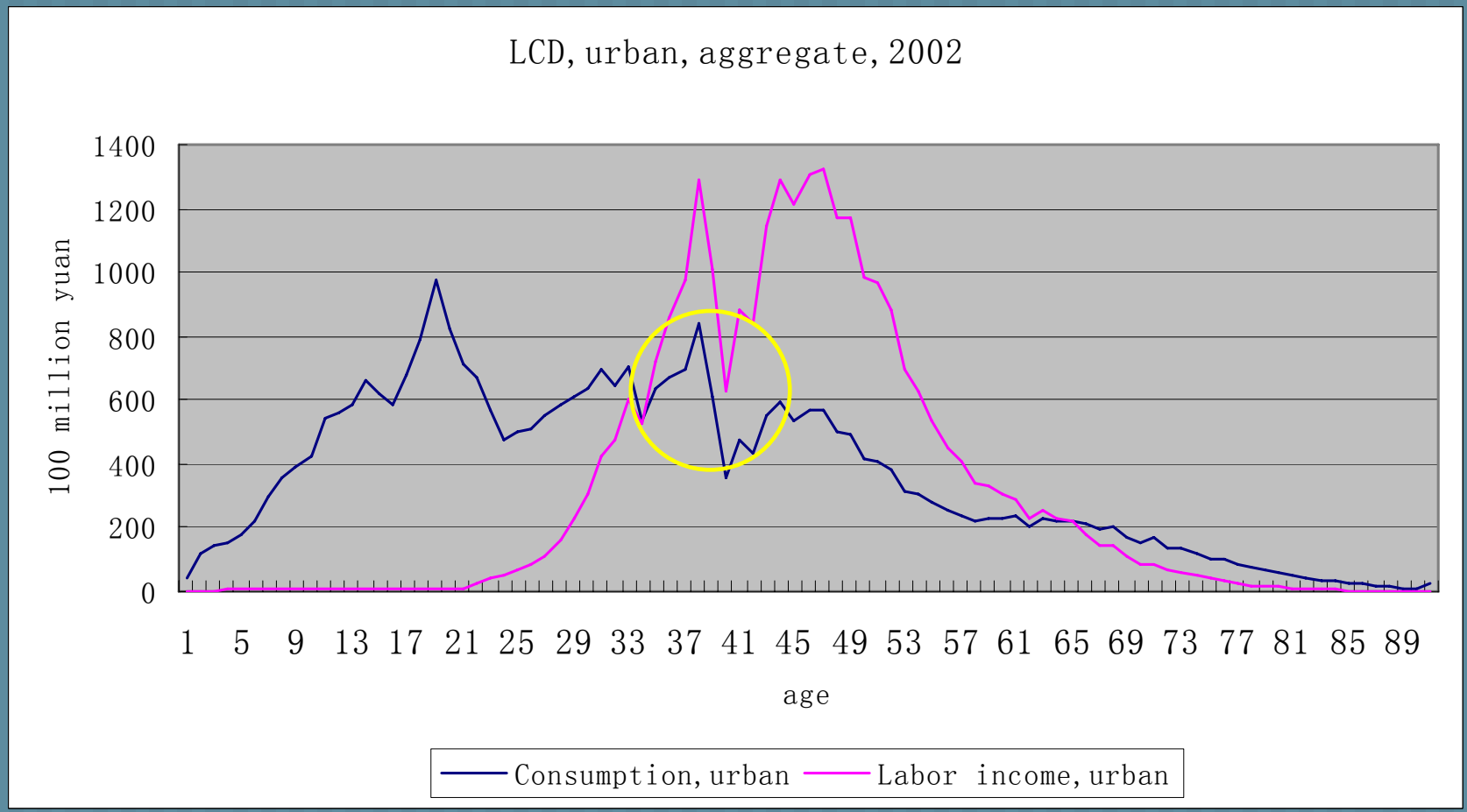
LCD, Rural, Per capita, 2002

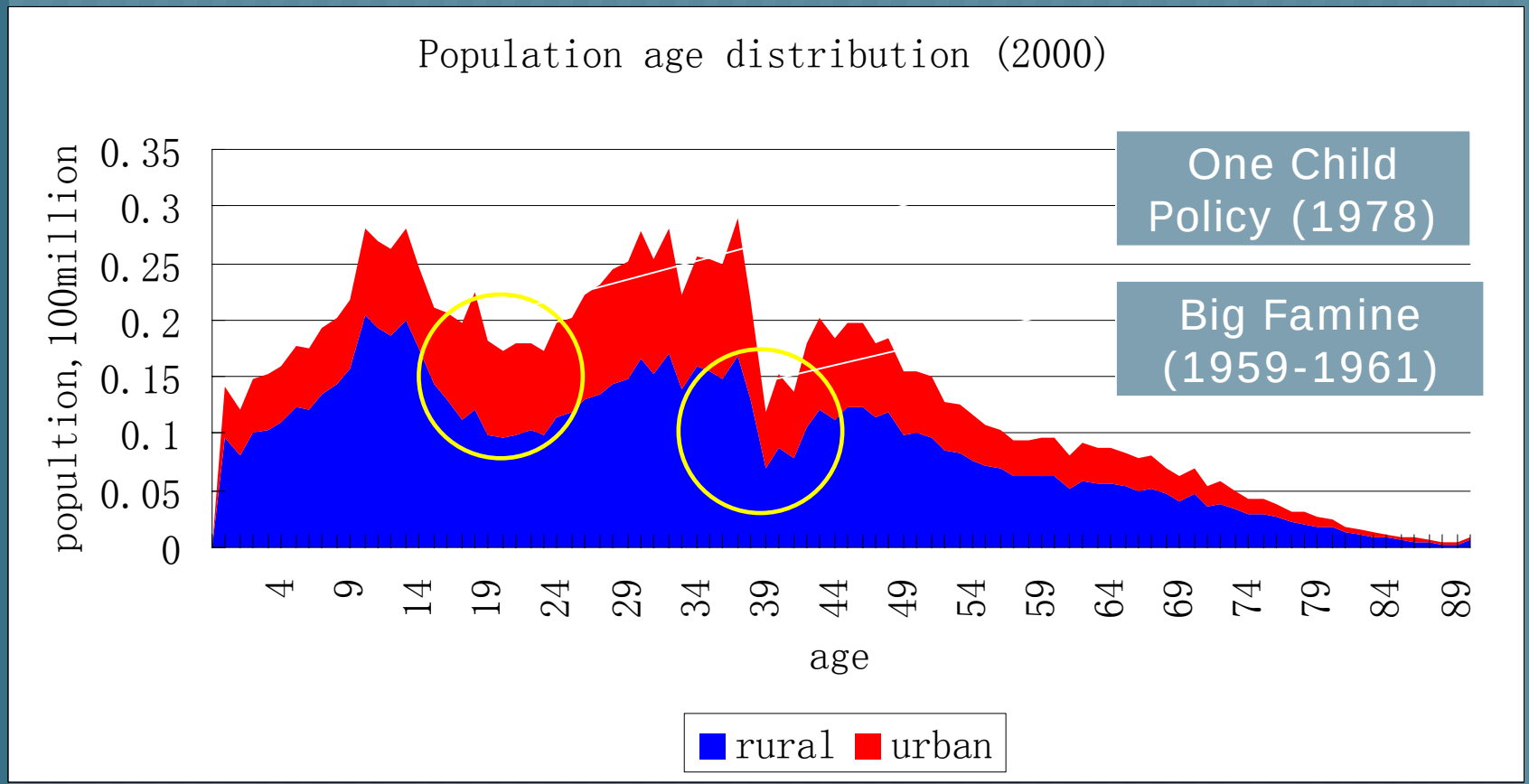


LCD, Urban, Per capita, 2002




LCD, rural, 2002, aggregate
100 million yuan
800
700
600
500
400
300
200
100
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89 93
age
labor Income
Consumption


LCD, urban, aggregate, 2002
100 million yuan
1400
1200
1000
800
600
400
200
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
age
Consumption, urban
Labor income, urban


Population age distribution (2000)
popultion,100million
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
4
9
14
19
24
29
34
39
44
49
54
59
64
69
74
79
84
89
age
One Child Policy (1978)
Big Famine (1959-1961)
rural
urban

2. Asset reallocation

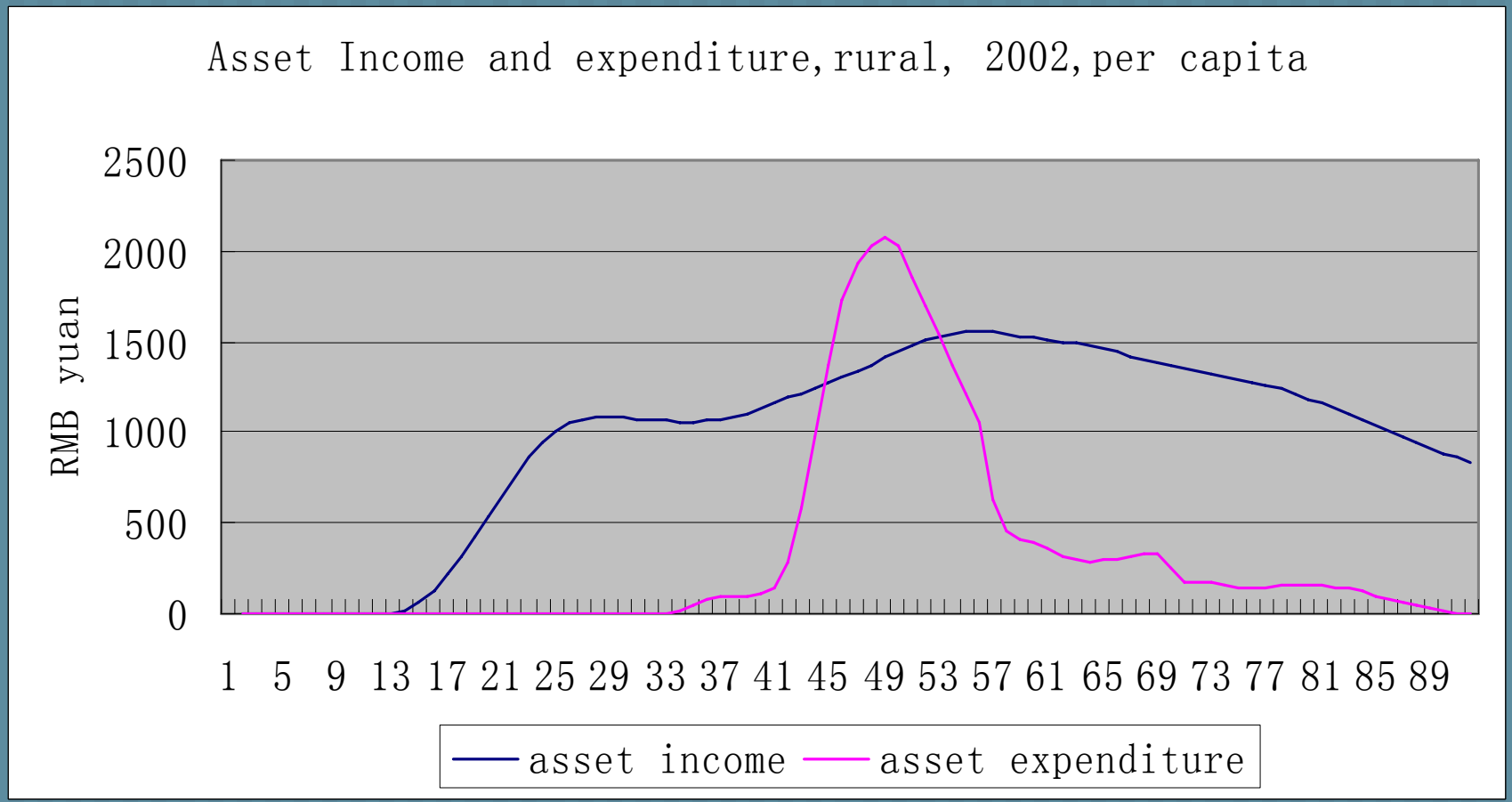
2.1 Public Asset Reallocations

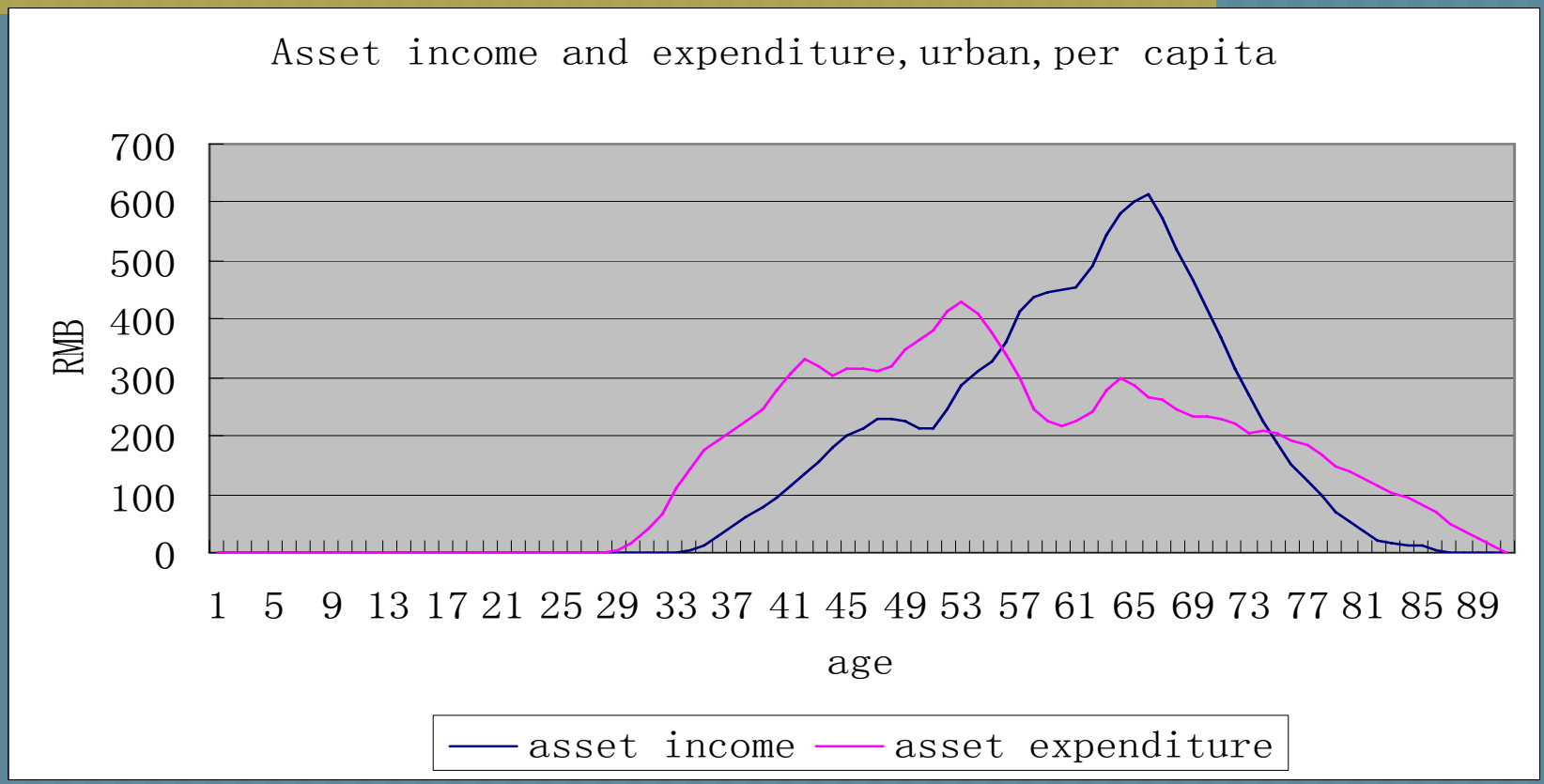
- Need to find a right way to classify the Public asset income and expenditure to the rural and urban.
- Otherwise only can simply use per capita

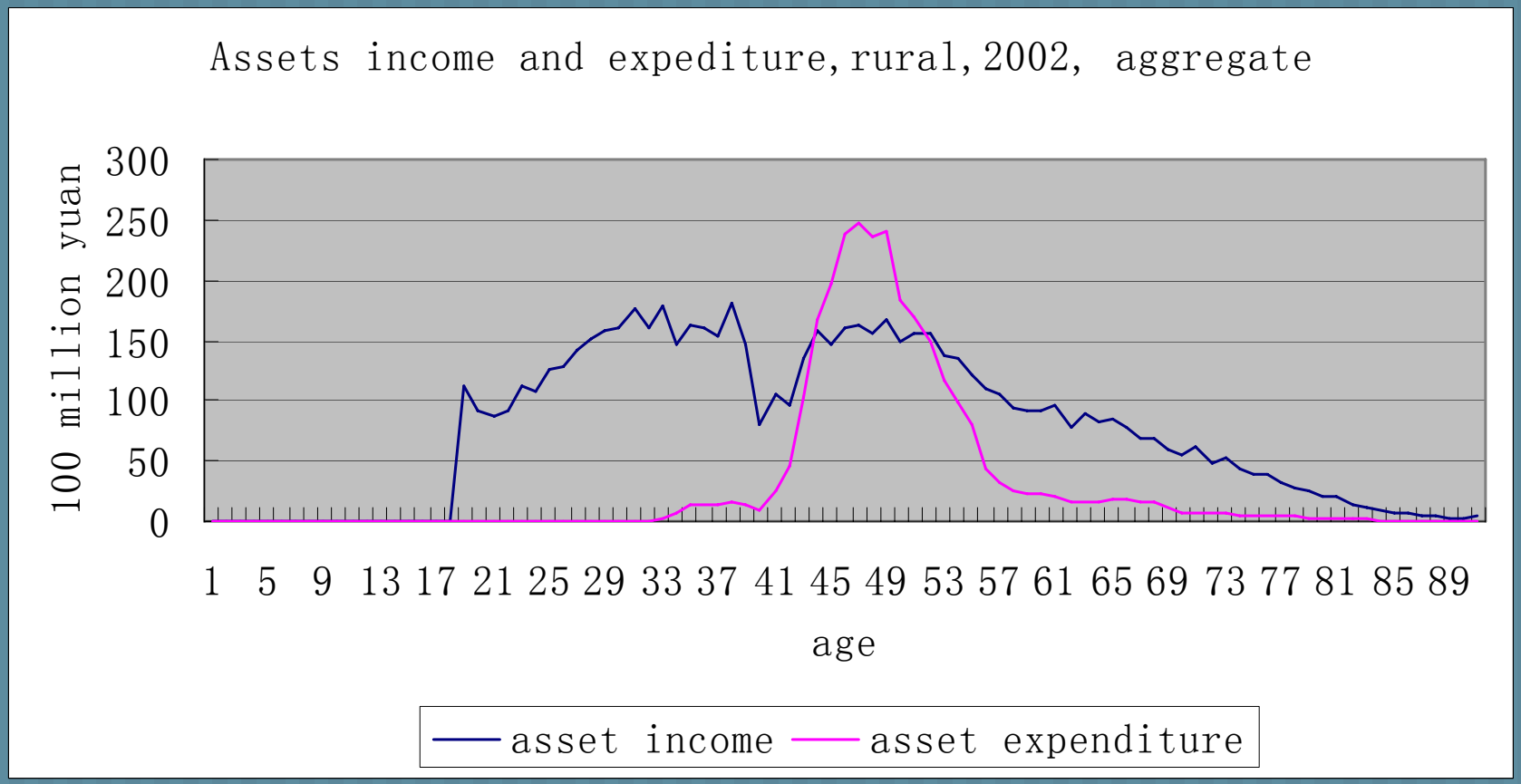
2. Asset reallocation

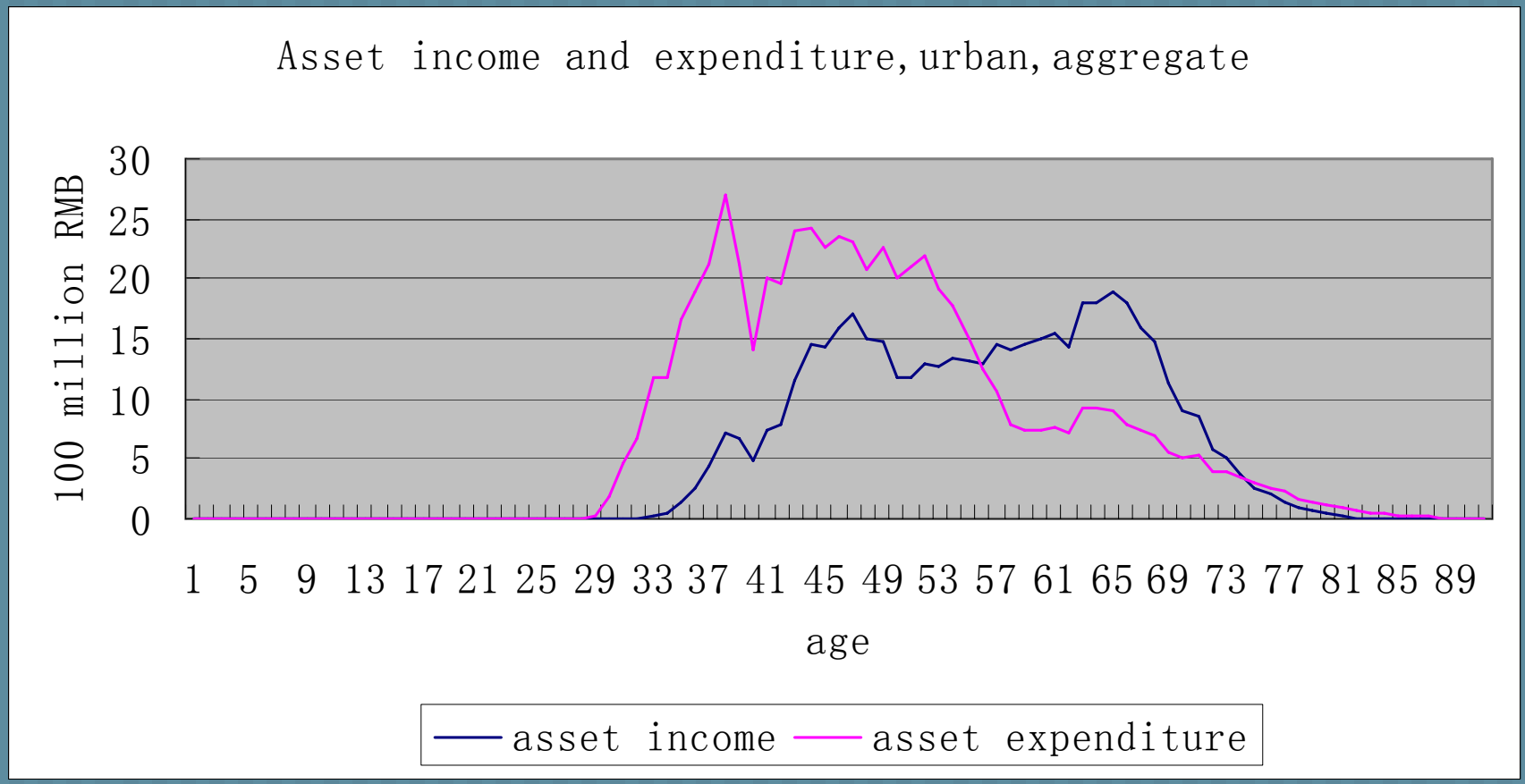
2.1 Private Asset Reallocations

- Lack of ideal data in these two databases to estimate this account, so we try to find some alternatives!
- **Rural**
- Asset income: age profile of 1/3 self-employee Income
- Asset expenditure: age profile of 1/3 Expenditure for Household Business.
- **Urban**
- Asset income: age profile of other income
- Asset expenditure: age profile of housing rent


Asset Income and expenditure,rural, 2002,per capita
RMB yuan
2500
2000
1500
1000
500
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
asset income
asset expenditure

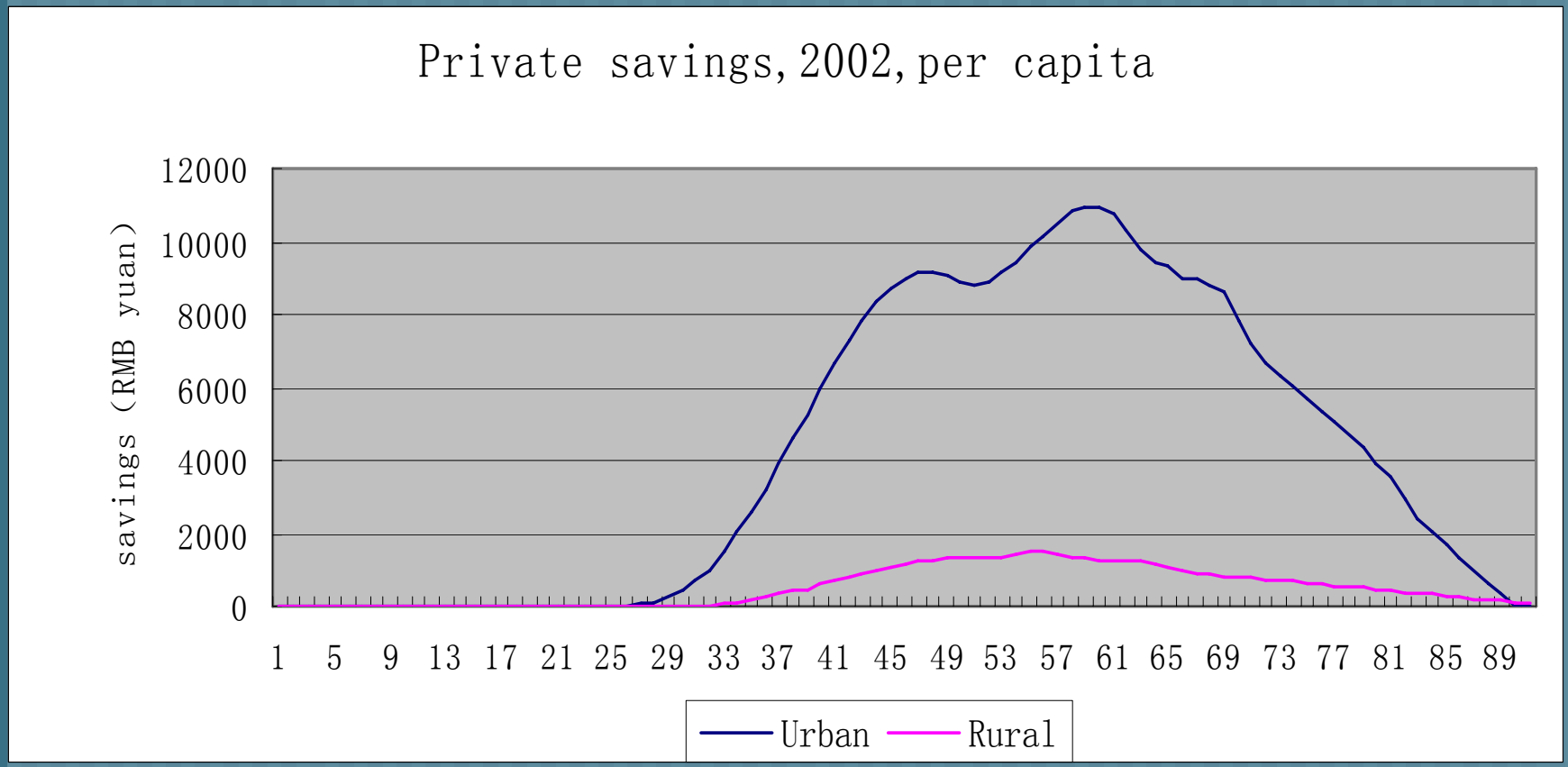

Asset income and expenditure,urban,per capita
700
600
500
400
300
200
100
0
RMB
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
age
asset income
asset expenditure

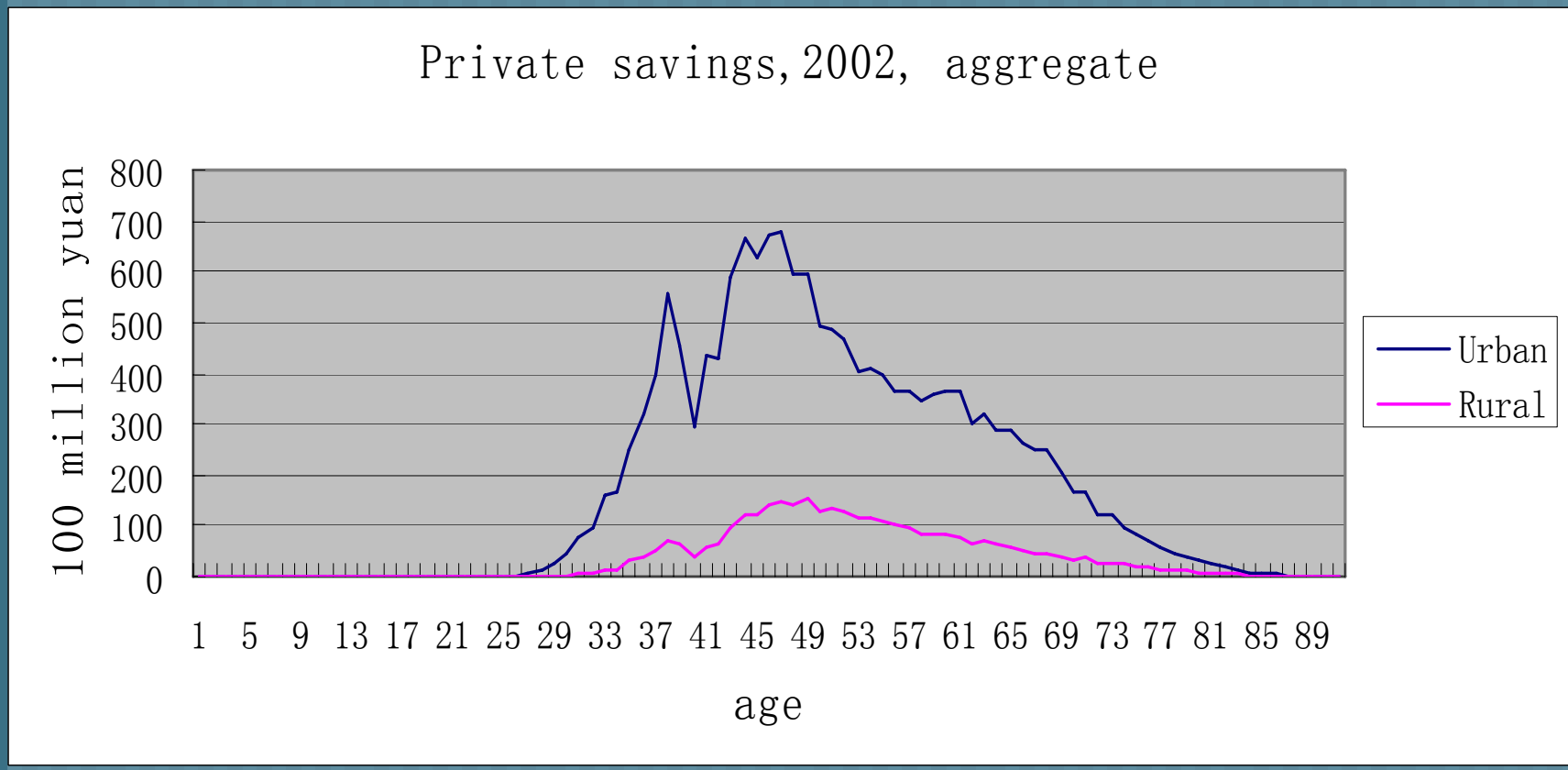

Assets income and expediture,rural,2002, aggregate
100 million yuan
300
250
200
150
100
50
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
age
asset income
asset expenditure


Asset income and expenditure, urban, aggregate
100 million RMB
30
25
20
15
10
5
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
age
asset income
asset expenditure

One Alternative

- Because of the data restriction, we may use the capital income account as residual while estimate the savings.
- Public saving
  - The same as public asset income, Need to find a right way to classify the Public asset income and expenditure to the rural and urban. Otherwise only can simply use per capita
- Private saving
  - Using data from these two database both in rural and urban


Private savings, 2002, per capita
savings (RMB yuan)
12000
10000
8000
6000
4000
2000
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
Urban
Rural


Private savings, 2002, aggregate
100 million yuan
800
700
600
500
400
300
200
100
0
1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89
age
Urban
Rural

3. Transfer

3.1 Public Transfers

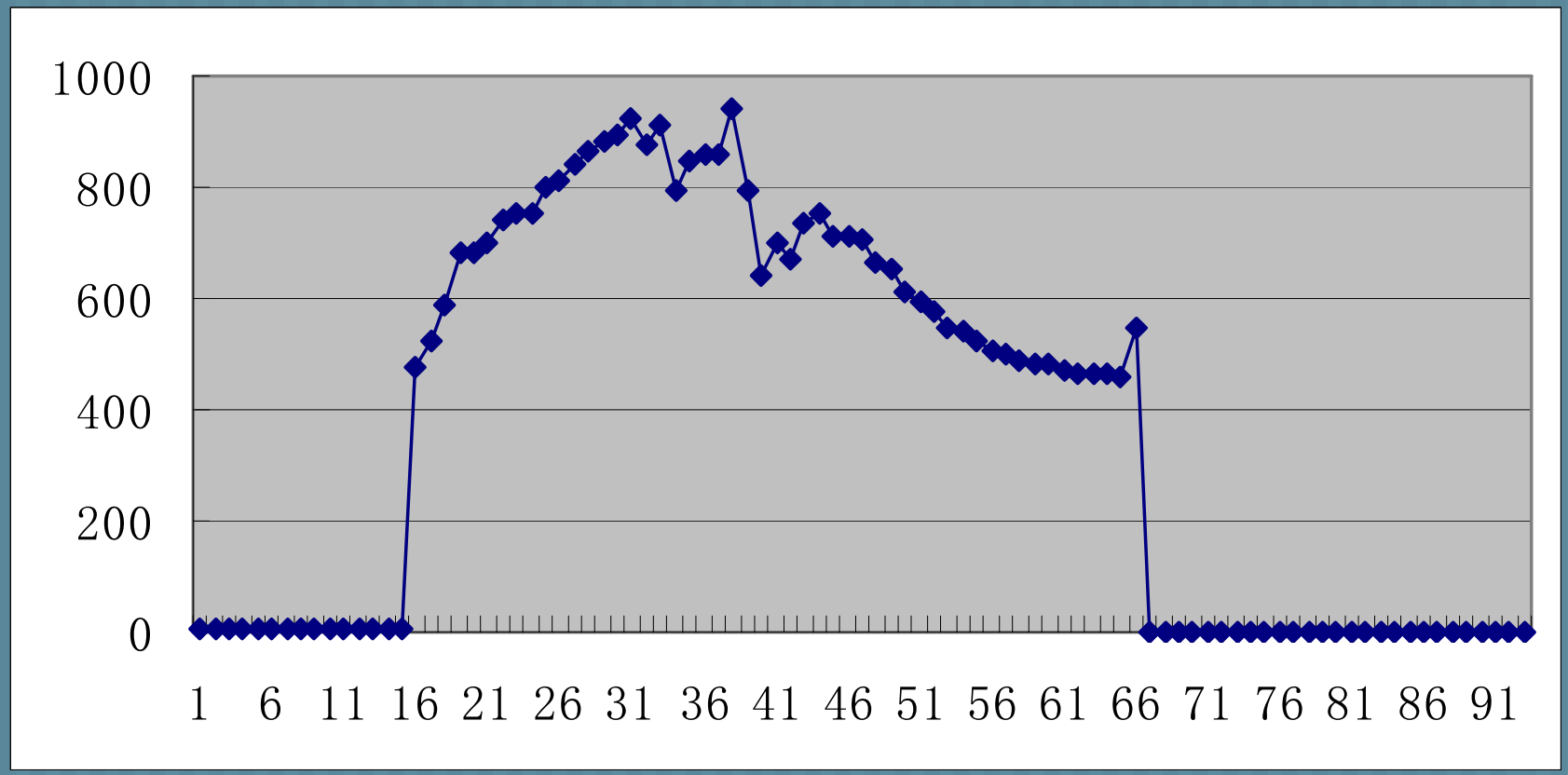
- ***Inflow***
- On the way…
  - Need to classify the rural and urban
  - Need age profile of different government program
- Up to now: Simply per capita for both rural and urban

3. Transfer

3.1 Public Transfers

- ***Outflow***
- (1) Value added Tax are firstly separated to different sectors, then distributed to by the age profile of non labor income and 2/3 is distributed by the age profile of labor income.
- (2) Consumption tax and tariff in proportion with individual other consumption
- (3) Income taxes are distributed in proportion with wage income
- (4) Agriculture taxes are distributed according to the self-employment income among rural populations
- (5) Corporation income taxes are distributed in proportion with wage income for each industry sectors
- (6) In lake of enough data, other taxes and government income are distributed averagely per capita.

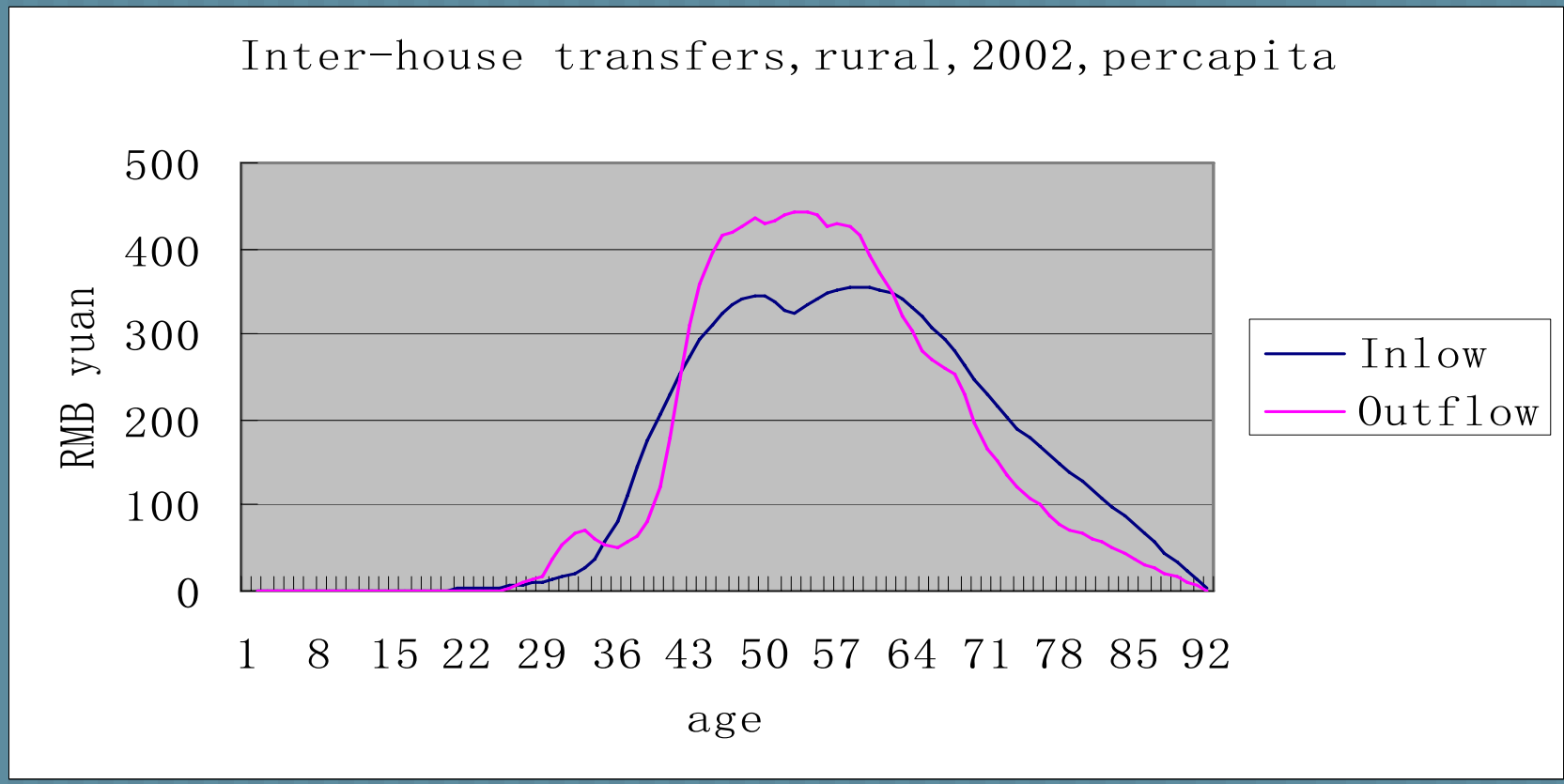
Public transfer: outflow, 2002

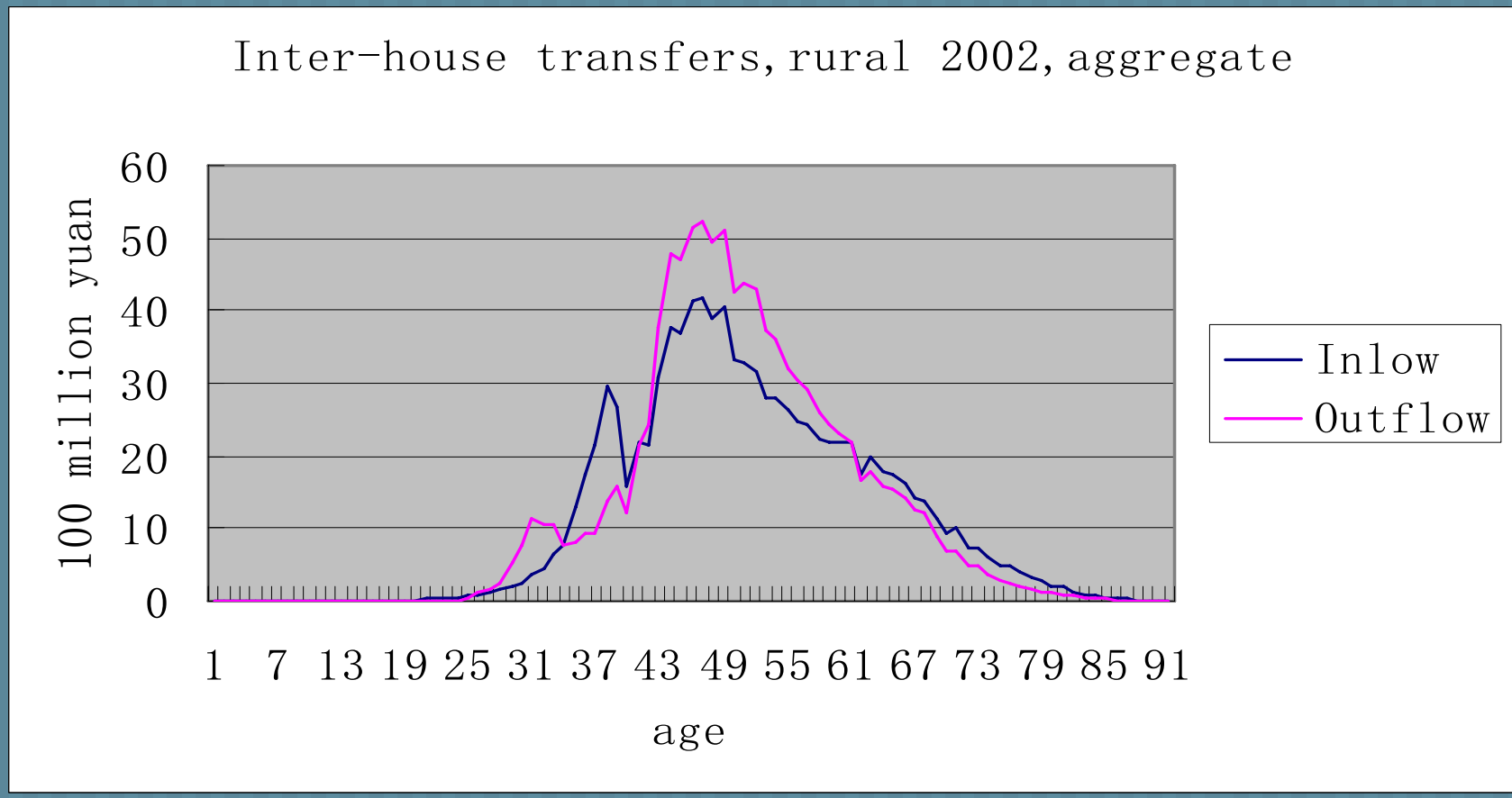


3. Transfer

3.2 Private Transfers

- Inter-house transfer – rural
  - Inflow: household reported transfer income – public transfer
  - Outflow: household reported other expenditure
- To be improved...

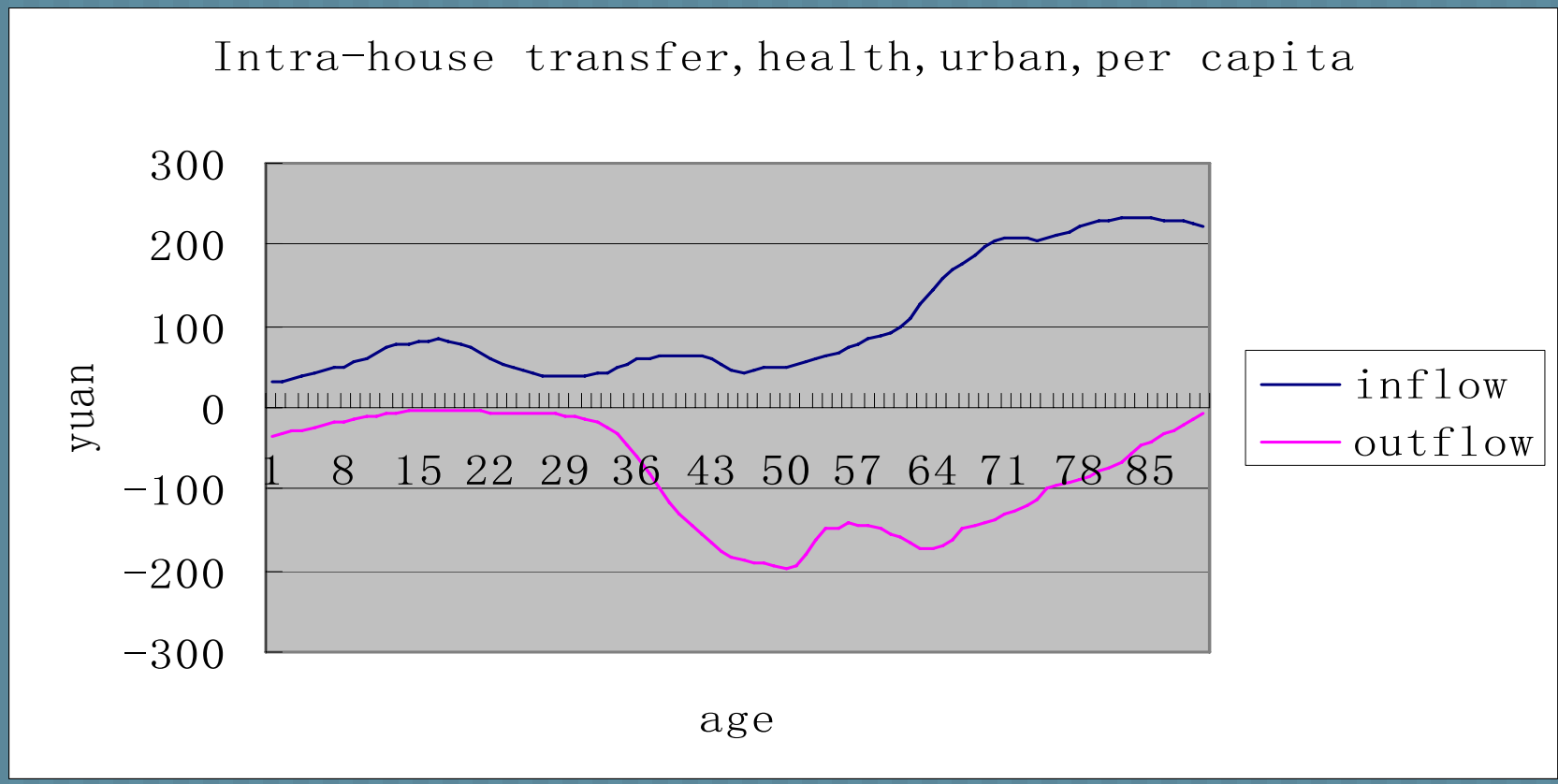

Inter-house transfers, rural, 2002, percapita
500
400
300
200
100
0
RMB yuan
1 8 15 22 29 36 43 50 57 64 71 78 85 92
age
Inlow
Outflow

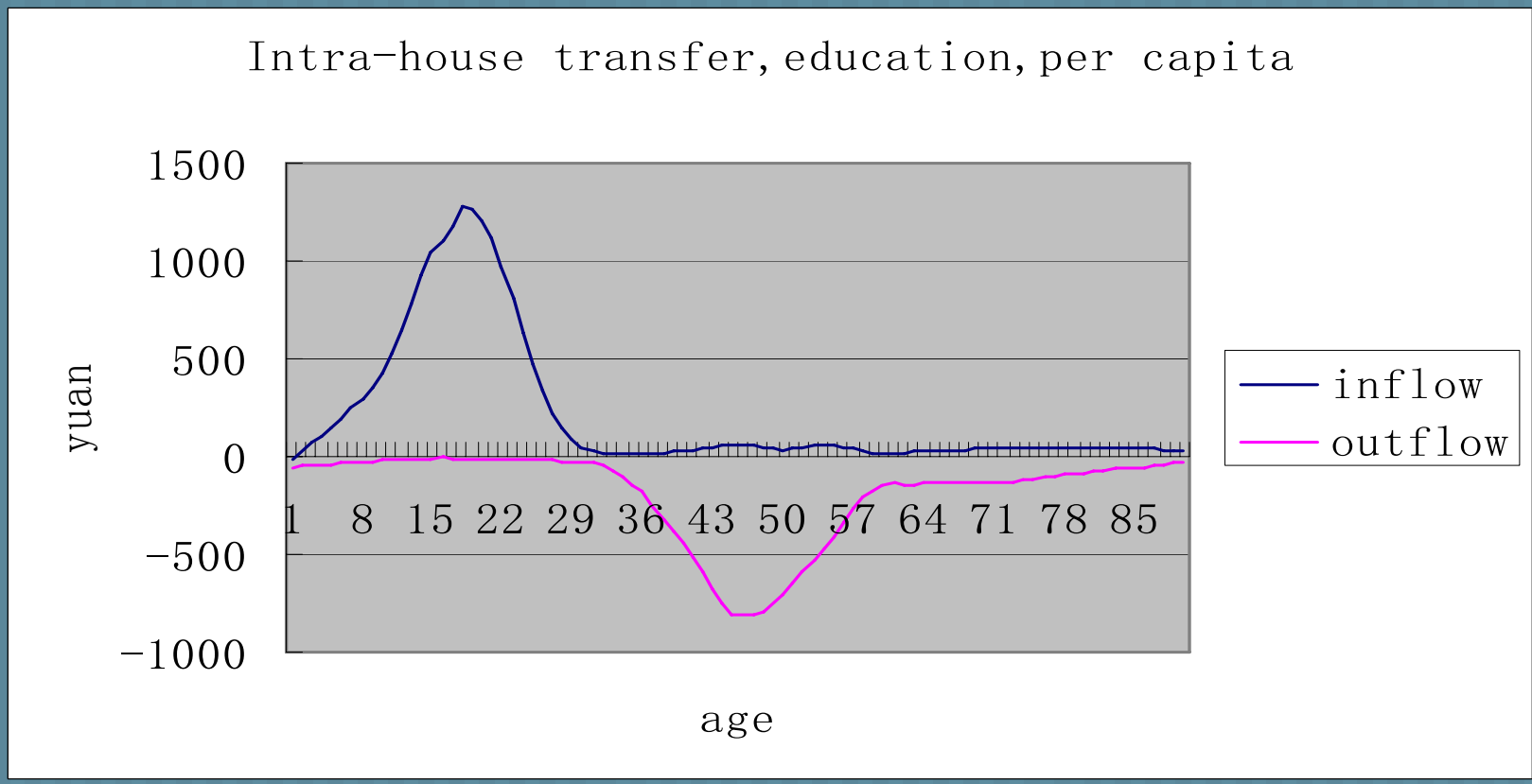

Inter-house transfers, rural 2002, aggregate
100 million yuan
60
50
40
30
20
10
0
1 7 13 19 25 31 37 43 49 55 61 67 73 79 85 91
age
Inlow
Outflow

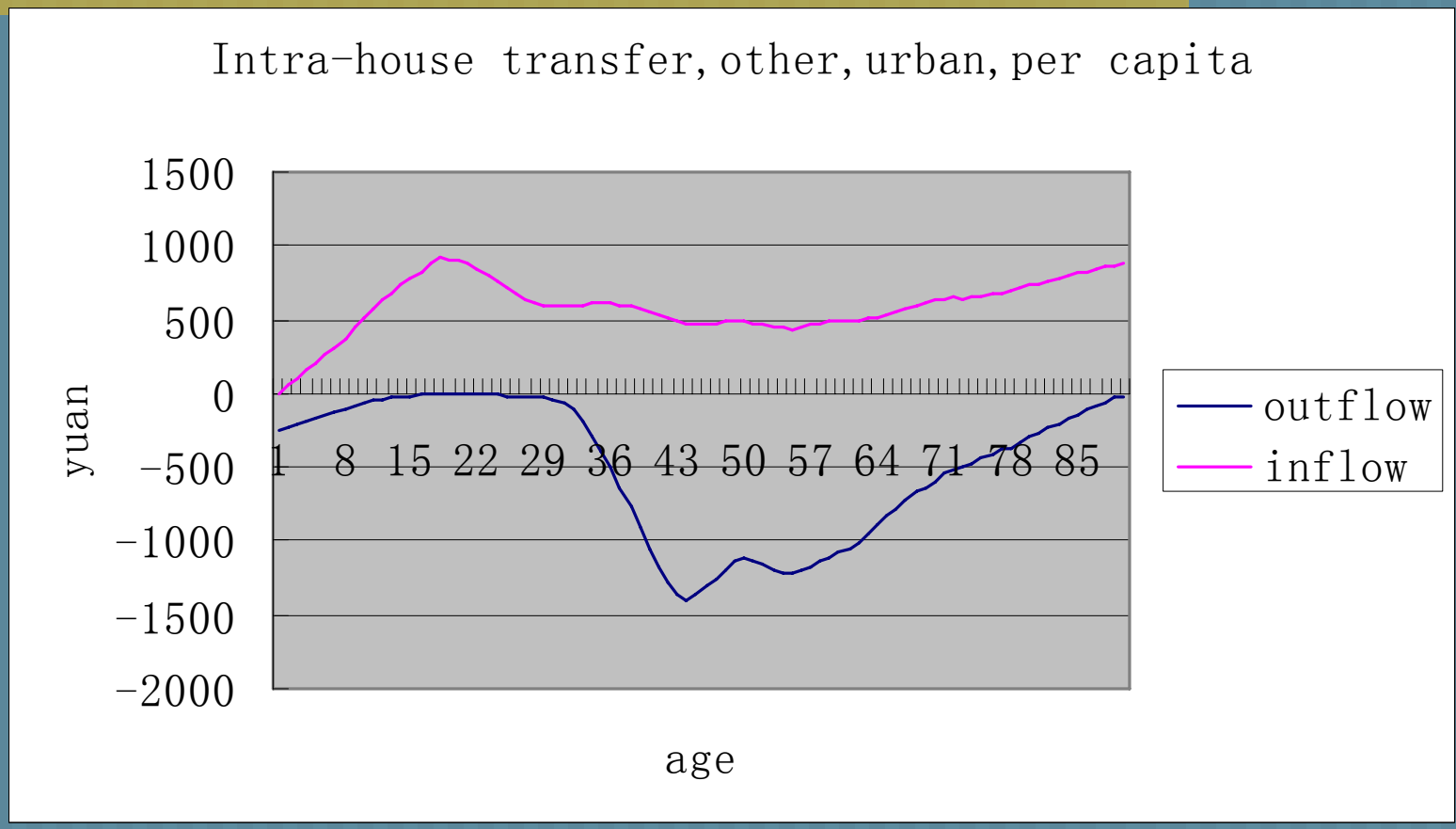
3. Transfer

3.2 Private Transfers

- Intra-house transfer - Urban
- Data source: *National Aged Population Survey (NAPS2004)*


Intra-house transfer, health, urban, per capita
300
200
100
0
-100
-200
-300
yuan
1
8
15
22
29
36
43
50
57
64
71
78
85
age
inflow
outflow


Intra-house transfer, education, per capita
1500
1000
500
0
-500
-1000
yuan
1 8 15 22 29 36 43 50 57 64 71 78 85
age
inflow
outflow


Intra-house transfer, other, urban, per capita
1500
1000
500
0
-500
-1000
-1500
-2000
yuan
1 8 15 22 29 36 43 50 57 64 71 78 85
age
outflow
inflow

Further Work and Discussion (1)

- ***1. Rural and Urban Difference***.
  - Big gap between the rural and urban China.
    - Socialistic New County Construction Policy
  - Most of the data in China is collected and reported separately, especially the household level data.
  - In order to figure out the flows between urban and rural sectors, we should make clear both the government income from rural and urban and government expenditure to rural and urban areas.
- ***2. Big regional gap***. (This is also an important and interesting issue in China)

Further Work and Discussion (2)

- ***3. States-owned Enterprises and NTA***
  - In the guideline, States-owned Enterprises (SOEs) are suggested to be classified as private sector. However, as China is a transitional economy from planned to market. Before the reform, SOEs are not only productive units, but also public service units, providing various public service—— from pension, education, health care to police, even marriage match. At present, it has been changed a lot, it still plays an important role in the social service. How to deal with such kind of SOEs in NTA?
- ***4. The adjustment of GDP***
  - China adjust the GDP after a Economy census in 2005
  - The real national account may also be changed.
- ***5. Policy changes***
  - There are more reform policies in a transitional economy which will affect people's behaviors a lot
  - It will be more difficult to forecast the future change based on the present account.

Further Work and Discussion (3)

- ***Further Data Availability***
  - Rural Household Survey
  - Urban Household Survey
  - Data quality:
    - Two different system and with different variables
    - better on the Labor Income, education and other consumption
    - No enough data on health in both rural and urban
    - No enough data about capital income and transfer

Thank you !