

# NTA

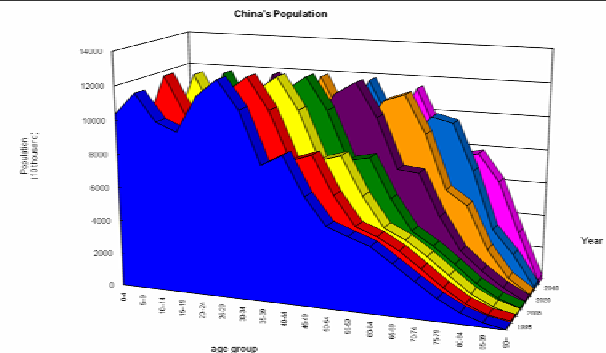
The 39<sup>th</sup> Summer Seminar on Population

NTA Application and Progress in

**CHINA**  
国民转移账户

July 1, 2008  
EWC, Hawaii

## China's Population

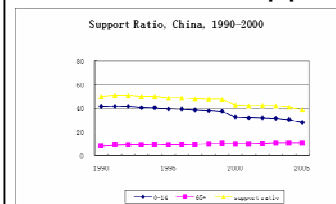


Sources: NBS, China

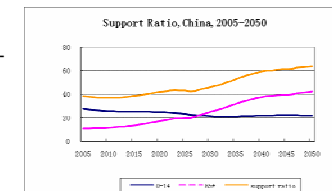
## Data Sources

- Year: 1995 & 2002
- Population
  - Census 1995 & 2000
- Aggregate
  - China Statistical Yearbook
  - National Accounts Statistics: Main Aggregates and Detailed Tables, 2005
  - GFS Statistics Yearbook
- Age Profile
  - CHIP1995 & 2002 (Merge the rural and urban data, weighted)
  - National Health Service Survey 1998 & 2003

## Support Ratio



- Note:
1. Support Ratio Decrease from 1990-2005
  2. Support Ratio will increase since 2015
  3. The increase of Support Ratio is mainly due to the increase of aging.



**Aggregate NTA, 1995**

SNA		Domestic Production and Cost Components by Sector	
<b>Expenditure on the Gross Domestic Product</b>			
Final Consumption Expenditure	33635.0		
General Government Final Consumption Expenditure	6690.5	Compensation of Employees	33660.0
Household Final Consumption Expenditure	26944.5	Operating Surplus (incl. mixed income)	17040.3
Gross Capital Formation	23877.8	Indirect Taxes on products and imports	7777.8
Gross Fixed Capital Formation	20300.5	Subsidies <sup>1</sup>	0.0
Changes in Inventories	3576.5	Consumption of Capital (Depreciation)	32.4
Net Export	998.5		
Exports of Goods and Services	12295.5		
Less: Imports of Goods and Services	11297.0		
Statistical Discrepancy	-32.4		
	58510.5		58510.5

NTA		Lifecycle Reallocation	
<b>Lifecycle Deficit</b>			-7481.5
Consumption	28019.9	Asset-based Reallocation	-7601.3
Private Consumption	21329.4	Net Private asset Income	15409.9
Public Consumption	6690.5	Private Savings	-21165.6
Labor Income	35501.4	Net Public asset Income	968.5
		Public Savings	-2814.1
		Net Transfers	119.8
		Net Private Transfers	95.0
		Net Public Transfers	24.8

**Lifecycle Surplus!**

## Some Documentations

### From NA to NTA

- Consistency of NA
  - The equivalence of Expenditure and Generation of GDP -- the statistics discrepancy in production account is assumed to be the consumption of capital in income account
  - Detail information is from other sources and have to be adjusted to the SNA –consumption; Indirect tax;
- Consumption-Health, Education, and others
  - Private: Proportion of household expenditure
  - Public: Proportion of government outlays in total government expenditure from GFS

**Aggregate NTA, 2002**

SNA		Domestic Production and Cost Components by Sector	
<b>Expenditure on the Gross Domestic Product</b>			
Final Consumption Expenditure	62798.5		
General Government Final Consumption Expenditure	13916.9	Compensation of Employees	62524.3
Household Final Consumption Expenditure	48881.6	Operating Surplus (incl. mixed income)	24813.6
Gross Capital Formation	42304.9	Indirect Taxes on products and imports	17834.2
Gross Fixed Capital Formation	41918.3	Subsidies <sup>1</sup>	0.0
Changes in Inventories	386.6	Consumption of Capital (Depreciation)	2725.6
Net Export	2794.2		
Exports of Goods and Services	30243.8		
Less: Imports of Goods and Services	27449.6		
Statistical Discrepancy	-2725.6		
	107897.6		107897.6

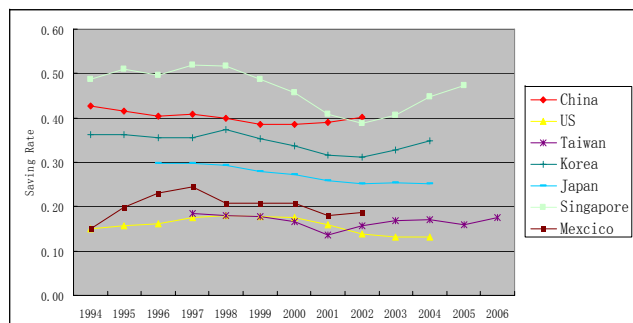
NTA		Lifecycle Reallocation	
<b>Lifecycle Deficit</b>			-16100.8
Consumption	52294.4	Asset-based Reallocation	-17235.9
Private Consumption	38377.5	Net Private asset Income	24611.1
Public Consumption	13916.9	Private Savings	-34608.9
Labor Income	68455.2	Net Public asset Income	365.6
		Public Savings	-7603.7
		Net Transfers	1075.1
		Net Private Transfers	1072.2
		Net Public Transfers	2.9

**Lifecycle Surplus!**

## Life Cycle Surplus

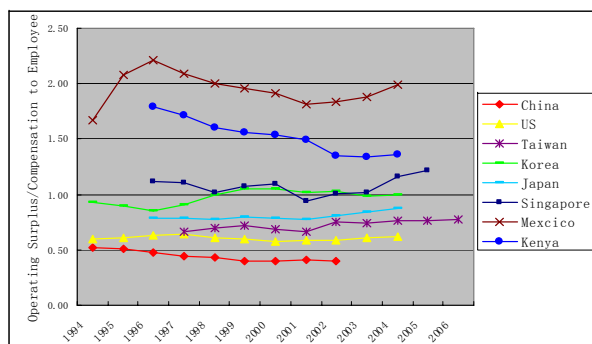
- Special case of China or not?
  - It's Obvious in NA:
    - $C = \text{Final consumption} - T_C$
    - $Y = \text{Compensation to employee} + (\text{Self-employment Labor Income} + T_L)$
    - Indirect tax =  $T_L + T_A + T_C$
  - It may due to
    - Higher saving rate in China
    - Lower Compensation to employee regards to operating surplus
- ◀ Statistical Problem: calculate total farmer's income as Compensation to employee
- ◀ Is It probably a certain period of developing?

## Higher Saving Rate in China



Data Source: UNSNA 2005

## Lower Operating Surplus in China



Data Source: UNSNA 2005

## Some Documentations

### Self-employment income—two methods

- Method 1
  - Assume: HH o.s. / Mixed income of HH o.s. from SNA = imputed rent / Self-employment income from HH survey.
  - Rural's= Urban's for only urban survey has it.
- Method 2- currently used
  - Add one more step (by S.Y. Lee): Separate the aggregate labor income to compensation to employees and self-employment income with proportion of wage and 1/3 mixed income in HH survey.

Year: 2002	Method 1	Method 2
<b>Labor Income</b>		<b>68455.2</b>
Compensation to Employees	67531.3	47550.9
Self-employment Labor Income	923.9	20904.3

	-7481.5		-7481.5
<b>Lifecycle Deficit</b>			
Consumption	28019.9	asset-based Reallocation	-7601.3
Private Consumption	21329.4	Net Private asset Income	15409.9
Private Consumption, Education	1388.5	Private Savings	-21165.6
Private Consumption, Health Care	479.9	<b>Net Public asset Income</b>	968.5
Private Consumption, Housing	0.0	Public Savings	-2814.1
Private Consumption, Durables	0.0	<b>Net Transfers</b>	<b>119.8</b>
Private Consumption, Tobacco	0.0	Net Private Transfers	95.0
Private Consumption, Alcohol	0.0	Net Inter-household Transfers, Inflows <sup>11</sup>	1683.7
Private Consumption, Others	19460.9	Net Inter-household Transfers, Outflows	-1588.8
Public Consumption	6490.5	Net Intra-household Transfers, Inflows <sup>12</sup>	0.0
Public Consumption, Education	681.5	Net Intra-household Transfers, Outflows	-0.0
Public Consumption, (Public) Health	217.8	<b>Net Public Transfers</b>	<b>248.8</b>
NHI	0.0	inflows	8088.4
Public Consumption, Others	5791.3	Public Transfers, In-kind, Inflows <sup>13</sup>	6600.5
<b>Labor Income</b>	35501.4	Education, Inflows	681.5
Compensation to Employees	21942.7	Public health	217.8
Self-employment Labor Income	13558.7	Other In-kind, Inflows	5791.3
		Public Cash Transfers, Inflows <sup>14</sup>	1370.1
		Social Security Welfare	888.4
		Social benefits other than social transfers in kind	509.1
		Other current transfers	2.7
		public transfer from ROW	24.8
		public transfer surplus (deficit, if <0)	-1886.6
		outflows	-9947.3
		Direct Taxes, Fees and Fines, and Other Transfers <sup>9</sup>	-870.9
		Net Indirect Taxes	-777.8
		Social Security contributions	-970.7
		Other current transfers	-327.8
		Public transfers to ROW	-0.0

Labor Income :  
Redistributed by  
the proportion  
form HH survey

Lifecycle Deficit	-16160.8	Lifecycle Reallocation	-16160.8
<b>Consumption</b>	<b>52394.4</b>	<b>asset-based Reallocation</b>	<b>-17235.9</b>
Private Consumption	38377.5	Net Private asset Income	24611.1
Private Consumption, Education	2741.9	Private Savings	-34608.9
Private Consumption, Health Care	2339.4	<b>Net Public asset Income</b>	<b>365.6</b>
Private Consumption, Housing	0.0	Public Savings	-7603.7
Private Consumption, Durables	0.0	<b>Net Transfers</b>	<b>1078.1</b>
Private Consumption, Tobacco	0.0	<b>Net Private Transfers</b>	<b>1072.2</b>
Private Consumption, Alcohol	0.0	Net Inter-household Transfers, Inflows <sup>11</sup>	2231.7
Private Consumption, Others	30854.0	Net Inter-household Transfers, Outflows	-1159.4
<b>Public Consumption</b>	<b>13916.9</b>	Net Intra-household Transfers, Inflows <sup>12</sup>	0.0
Public Consumption, Education	1341.3	Net Intra-household Transfers, Outflows	-0.0
Public Consumption, (Public) Health	283.5	<b>Net Public Transfers</b>	<b>2.9</b>
NHI	0.0	<i>inflows</i>	<b>18422.6</b>
Public Consumption, Others	12292.1	Public Transfers, In-kind, Inflows <sup>13</sup>	13916.9
<b>Labor Income</b>	<b>68455.2</b>	Education, Inflows	1341.3
Compensation to Employees	47550.9	Public health	283.5
Self-employment Labor Income	20904.2	Other In-kind, Inflows	12292.1
		Public Cash Transfers, Inflows <sup>14</sup>	4502.1
		Social Security Welfare	3470.8
		Social benefits other than social transfers in kind	1018.0
		Other current transfers	13.3
		Public transfers from ROW	3.6
		<i>public transfer surplus (deficit, if &lt;0)</i>	<b>-7270.8</b>
		<i>outflows</i>	<b>-25080.5</b>
		Direct Taxes, Fees and Fines, and Other Transfers <sup>15</sup>	-3799.8
		Net Indirect Taxes	-17834.2
		Social Security contributions	-4048.7
		Other current transfers	-7.2
		Public transfers from ROW	0.0

Labor Income :  
Redistributed by  
the proportion  
form HH survey

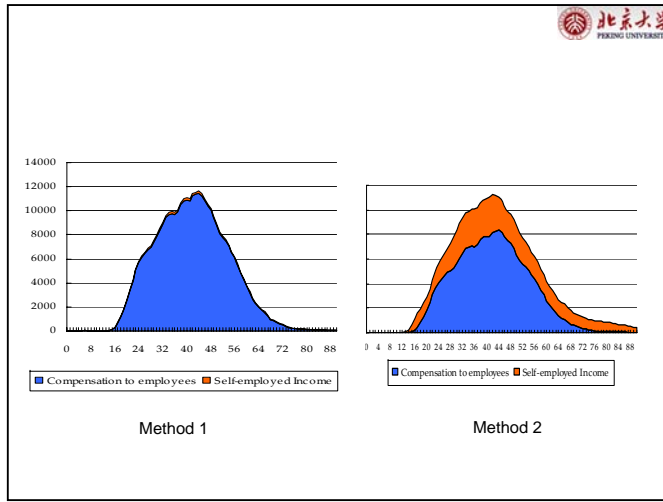
## Some Documentations

### Indirect Tax allocation—three methods

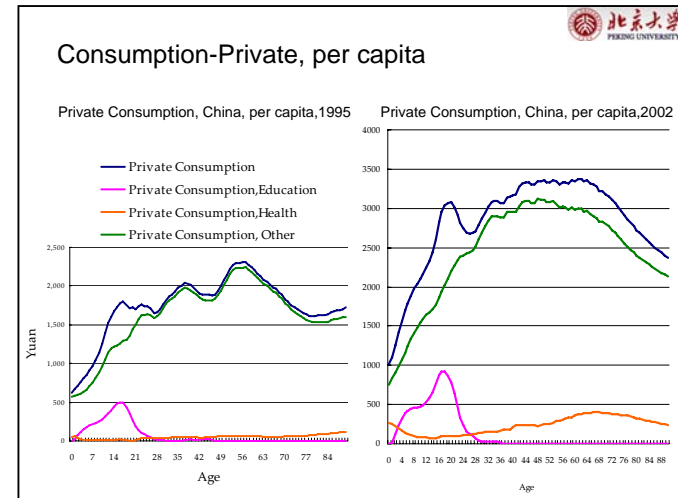
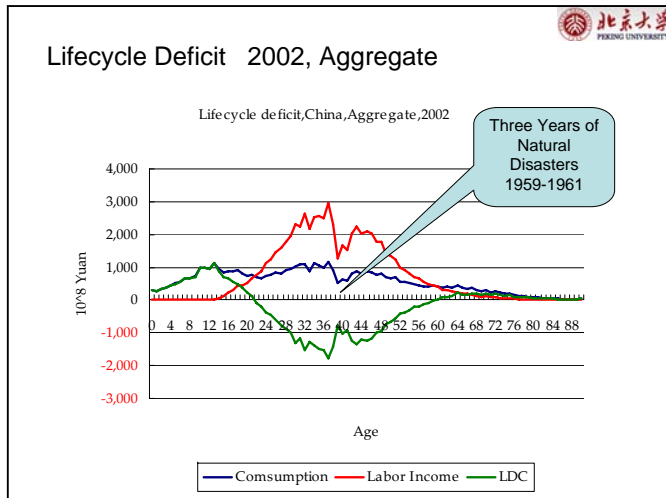
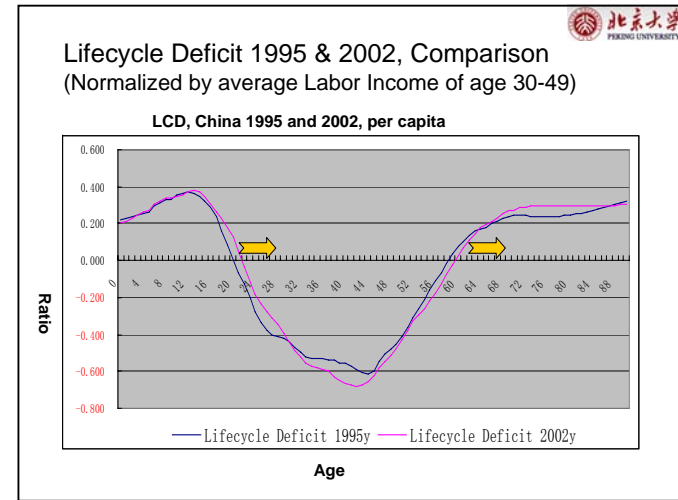
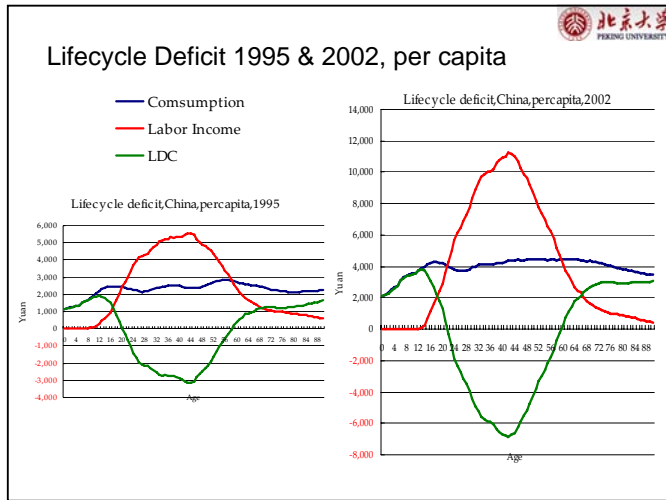
- Method 1—previous
  - Based on proportion of taxes on production
- Method 2—currently used
  - Prof. Andy Mason's profile-GFS
- Method 3—Compared with Method 2
  - Prof. Andy Mason's profile-SNA

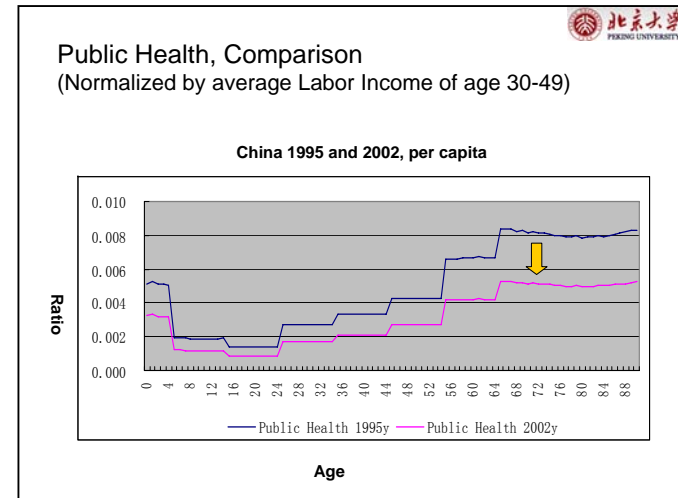
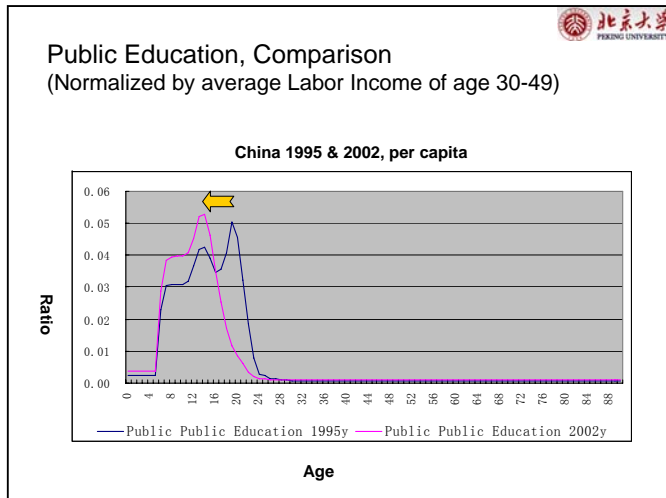
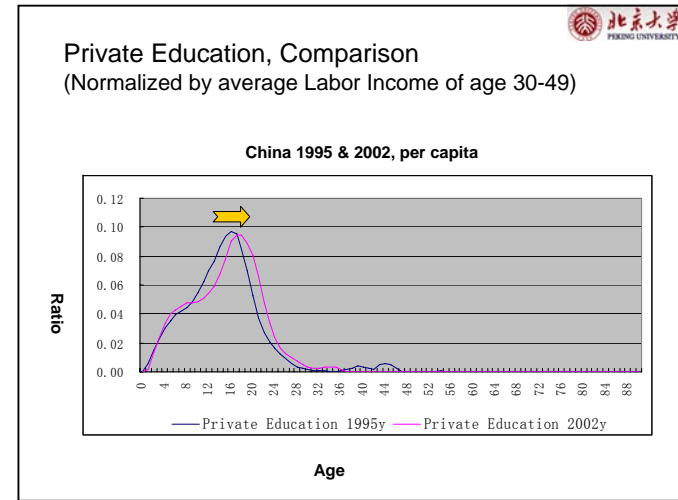
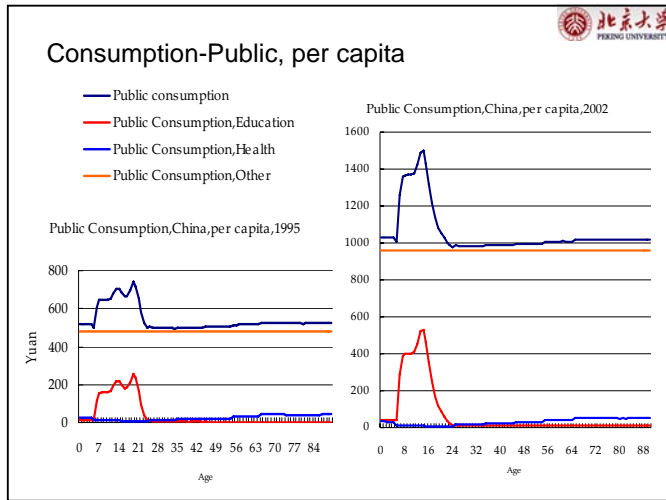
	L	K	C
Method 1	12.70%	7.23%	80.07%
Method 2	28.59%	12.51%	58.90%
Method 3	31.10%	17.83%	51.07%

The difference is mainly due to GFS has less information about structure of indirect tax revenue, while we use detailed tax revenue structure to separate the indirect tax in SNA.

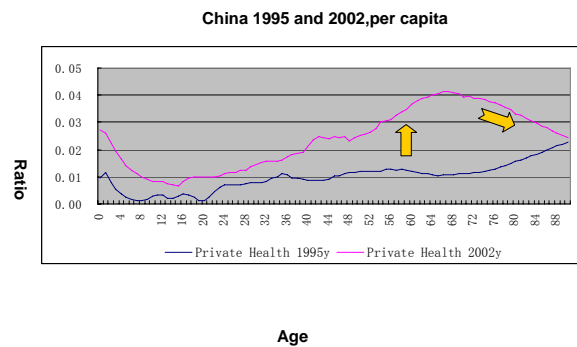


## Age Profiles

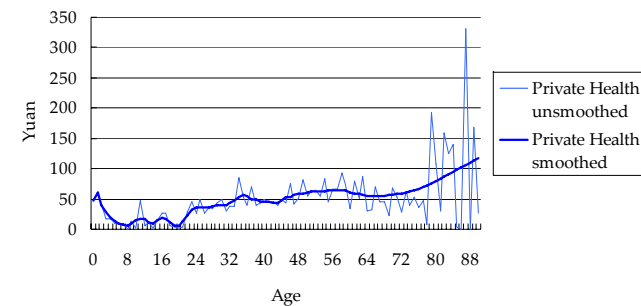




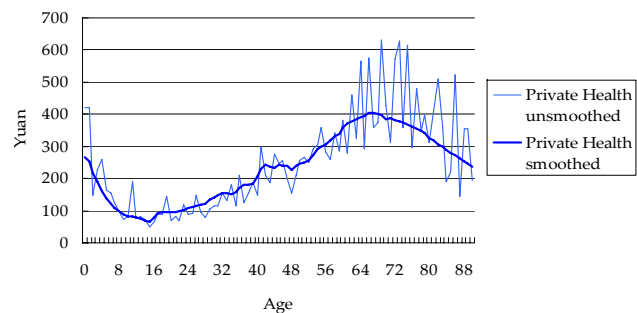
### Private Health, Comparison (Normalized by average Labor Income of age 30-49)



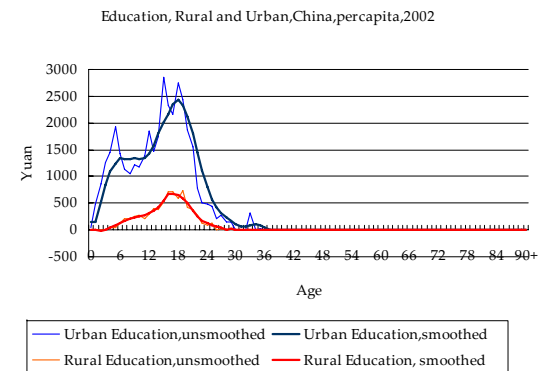
### Private Health Expenditure ,China,per capita, 1995

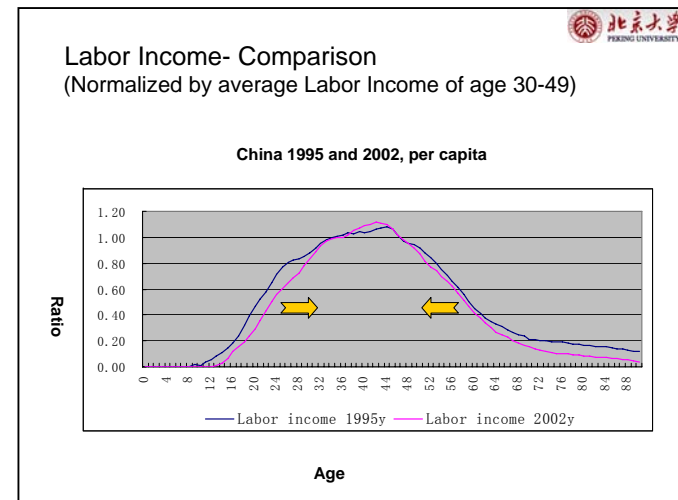
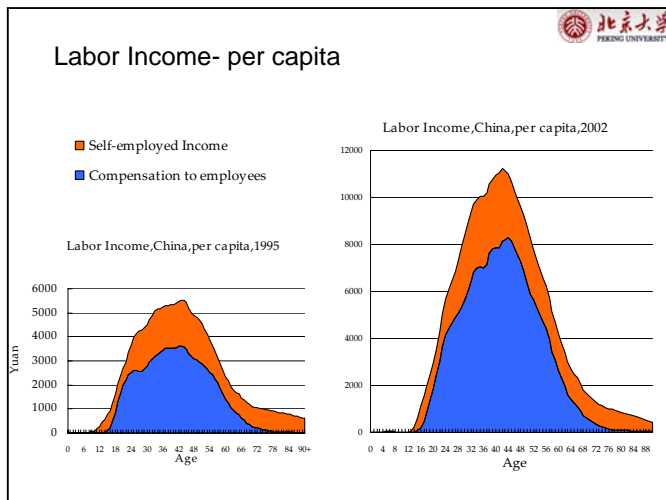
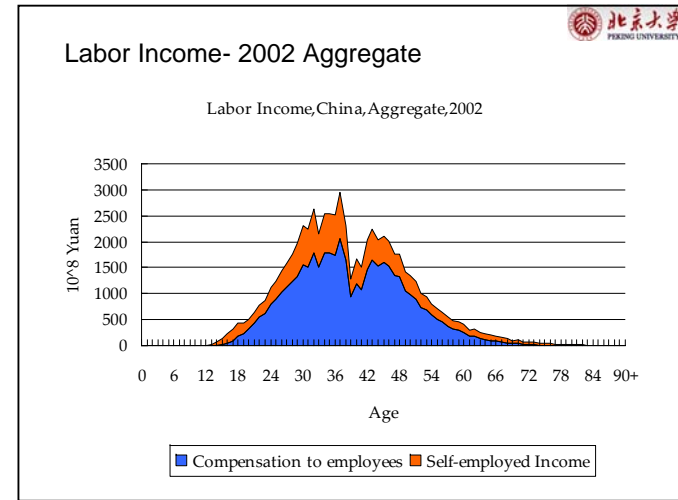
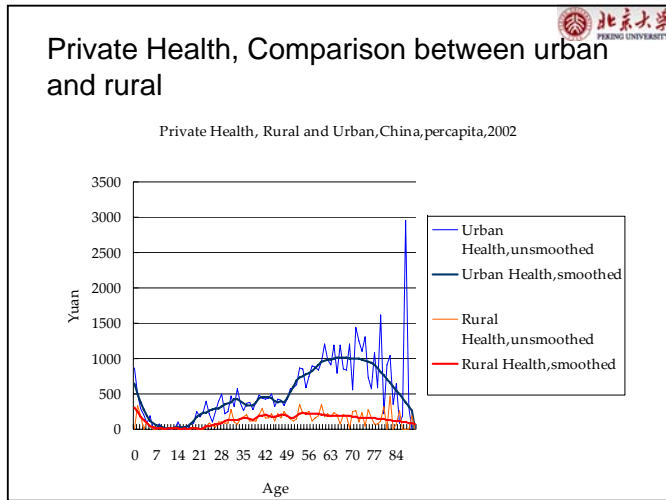


### Private Health Expenditure ,China,per capita, 2002

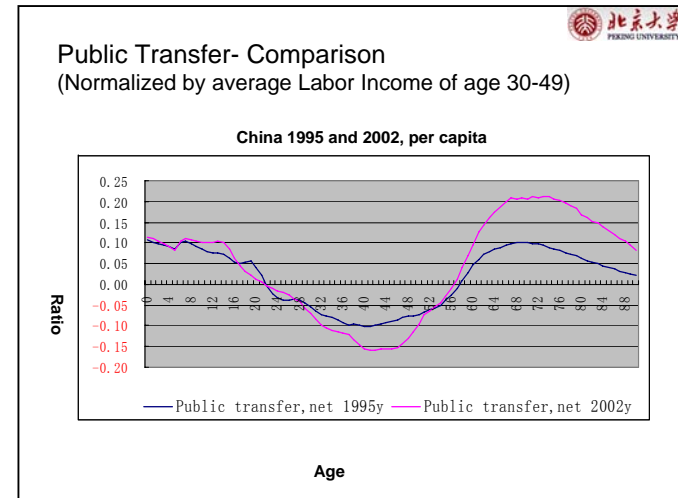
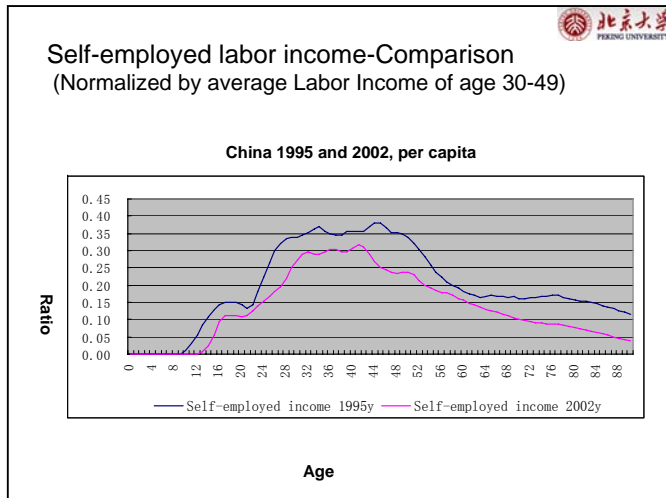
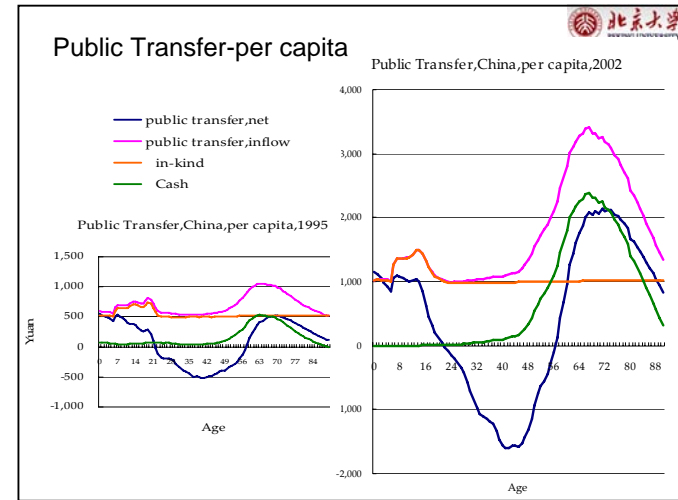
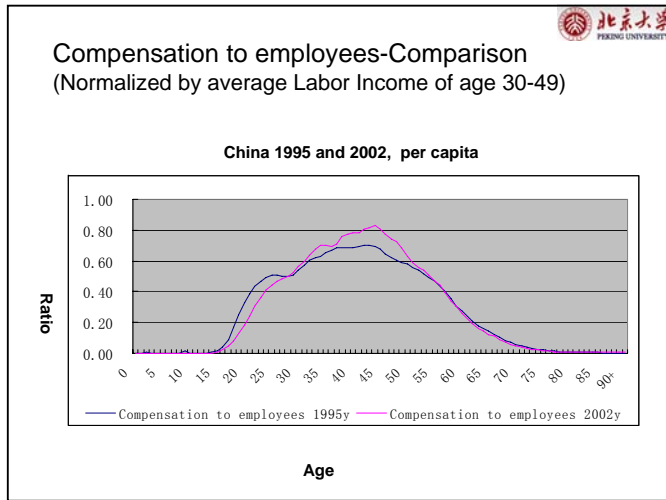


### Private Education, Comparison between urban and rural

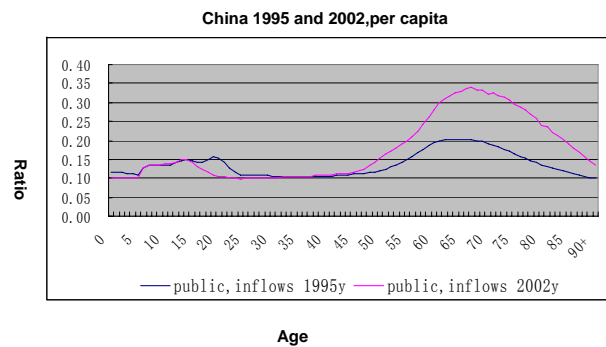




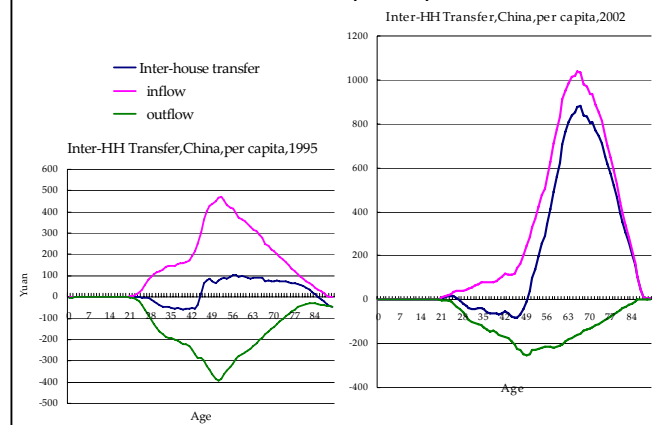




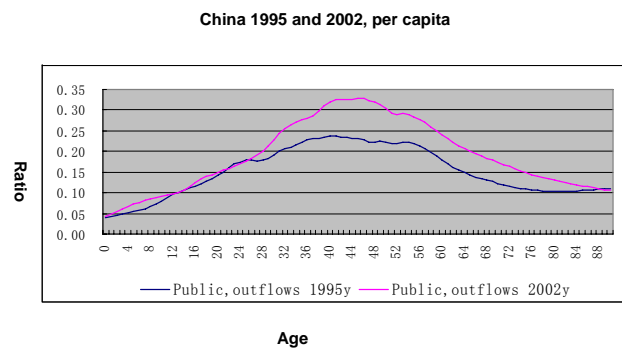
### Public Transfer Inflows- Comparison (Normalized by average Labor Income of age 30-49)



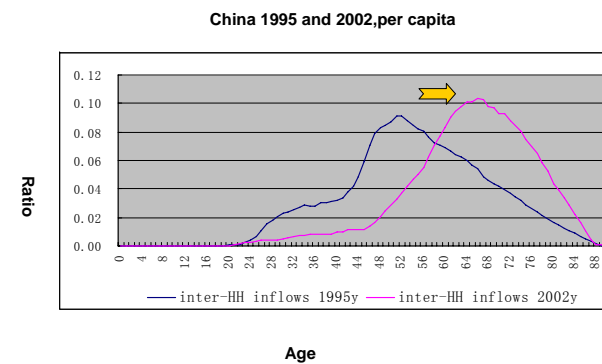
### Private Transfer: Inter HH-per capita

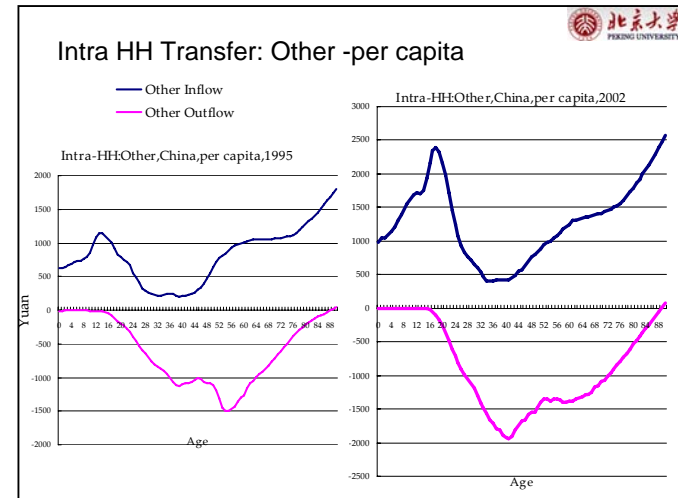
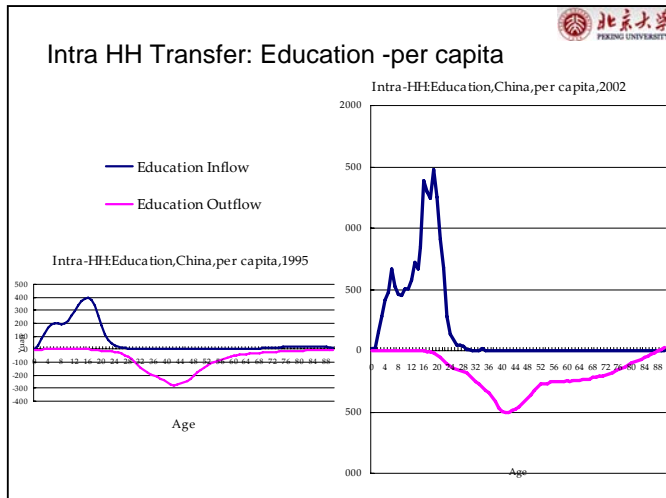
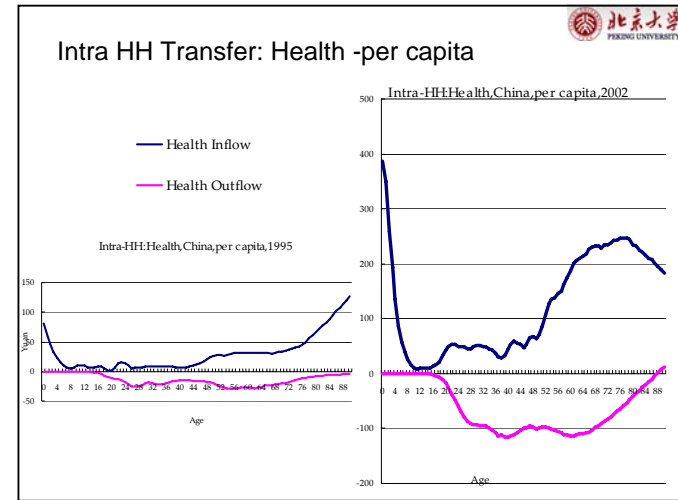
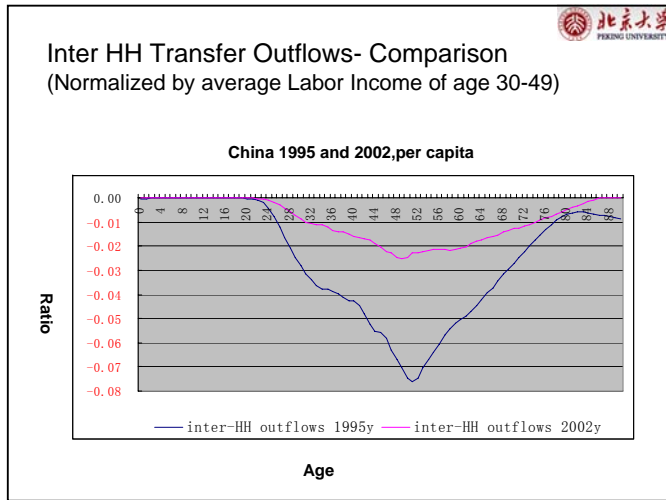


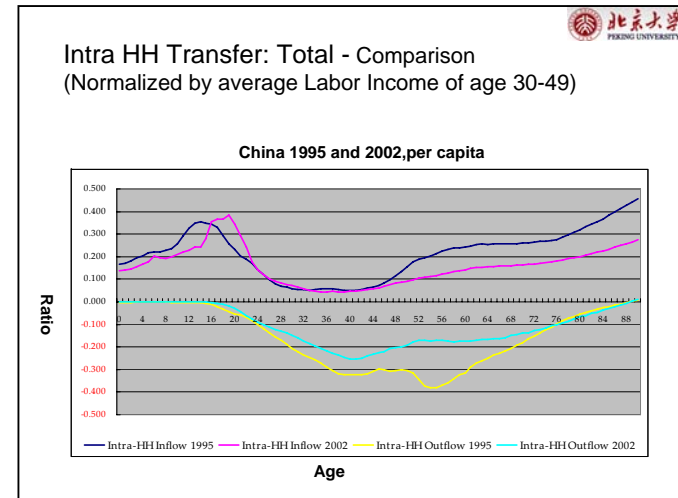
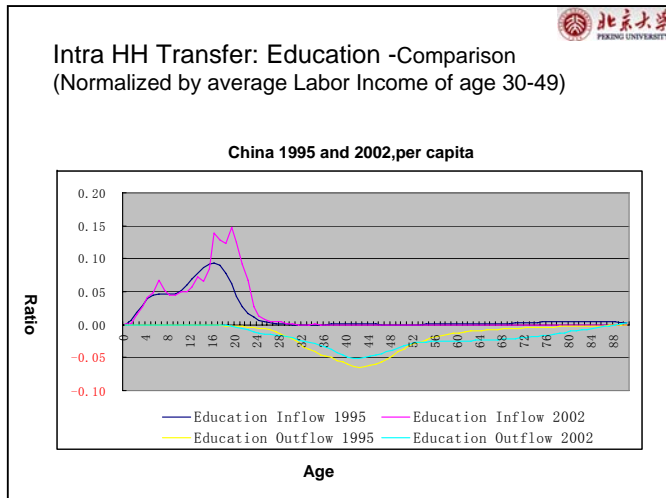
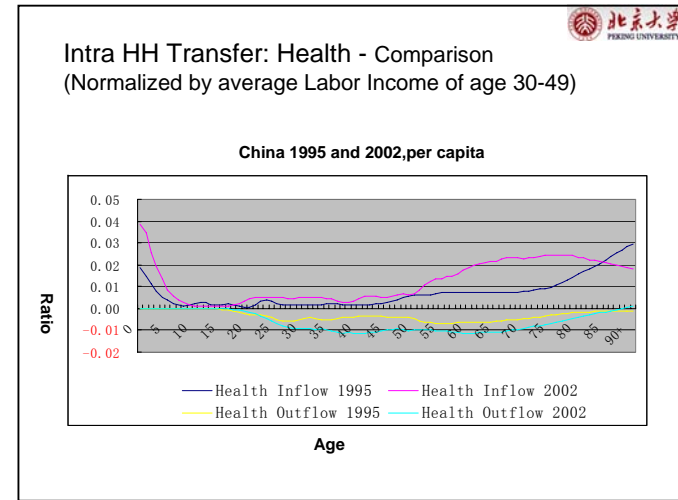
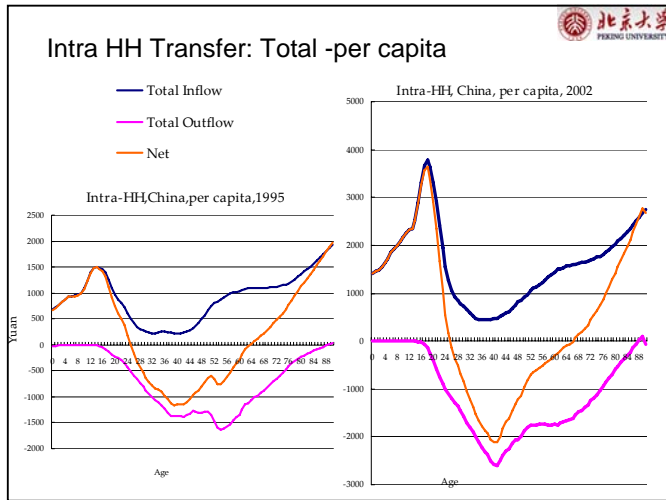
### Public Transfer Outflows- Comparison (Normalized by average Labor Income of age 30-49)



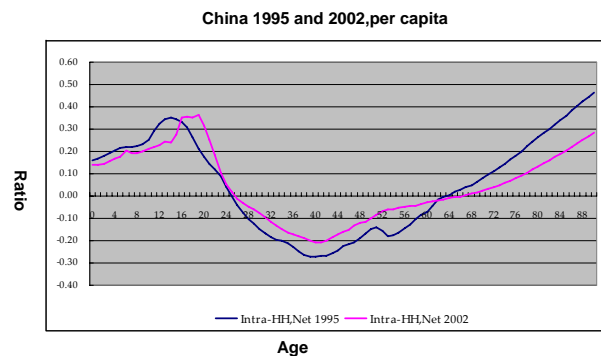
### Inter HH Transfer Inflows- Comparison (Normalized by average Labor Income of age 30-49)



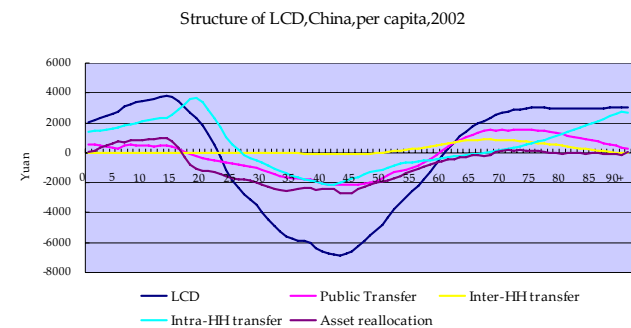




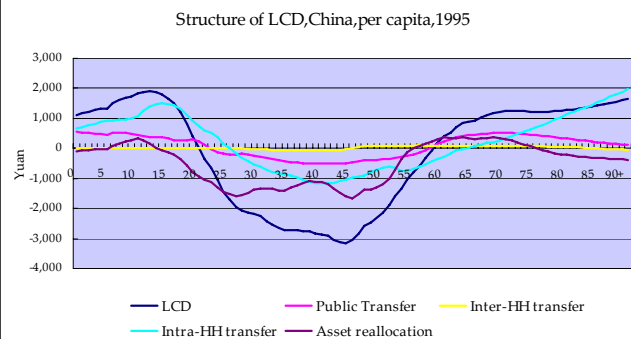
### Intra HH Transfer: Net - Comparison (Normalized by average Labor Income of age 30-49)



### Structure of the Lifecycle Deficit (Assets Reallocation as residual)



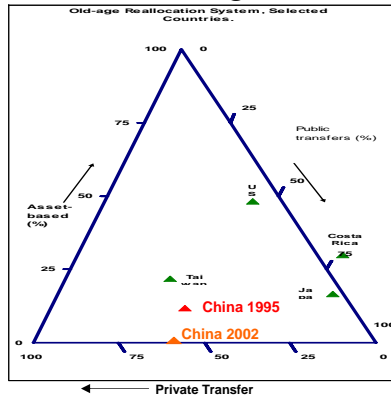
### Structure of the Lifecycle Deficit (Assets Reallocation as residual)



### Structure of the Lifecycle Deficit (Assets Reallocation as residual)

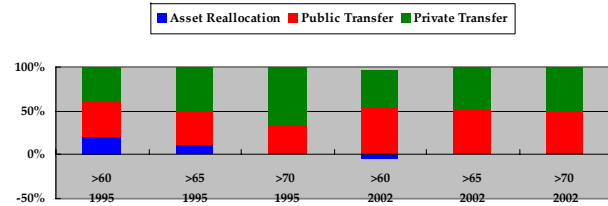
	1995		2002		
	Cutting Ages	Duration	Cutting Ages	Duration	
Lifecycle Deficit	20	58	21	59	38
Public Transfer	22	58	17	59	42
Private Transfer	25	62	26	57	31
- Inter Household			27	50	23
- Intra Household	25	63	26	67	41
Residual (Asset reallocation)	13	55	16	68	52

# Triangle



谢谢  
THANKS

## Old-age Reallocation System



	1995			2002		
	>60	>65	>70	>60	>65	>70
Asset Reallocation	19.9	11.7	0.7	-4.3	0.7	2.7
Public Transfer	40.2	37.1	32.4	56.0	51.7	45.8
Private Transfer	39.9	51.2	66.9	44.3	47.6	51.5