

# Changes in Public and Private Health Consumption in the Era of Population Aging

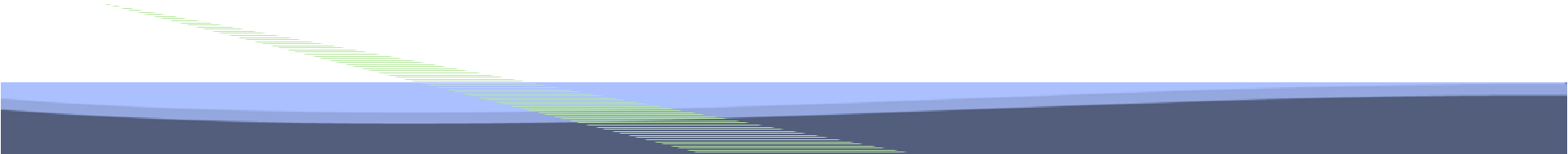
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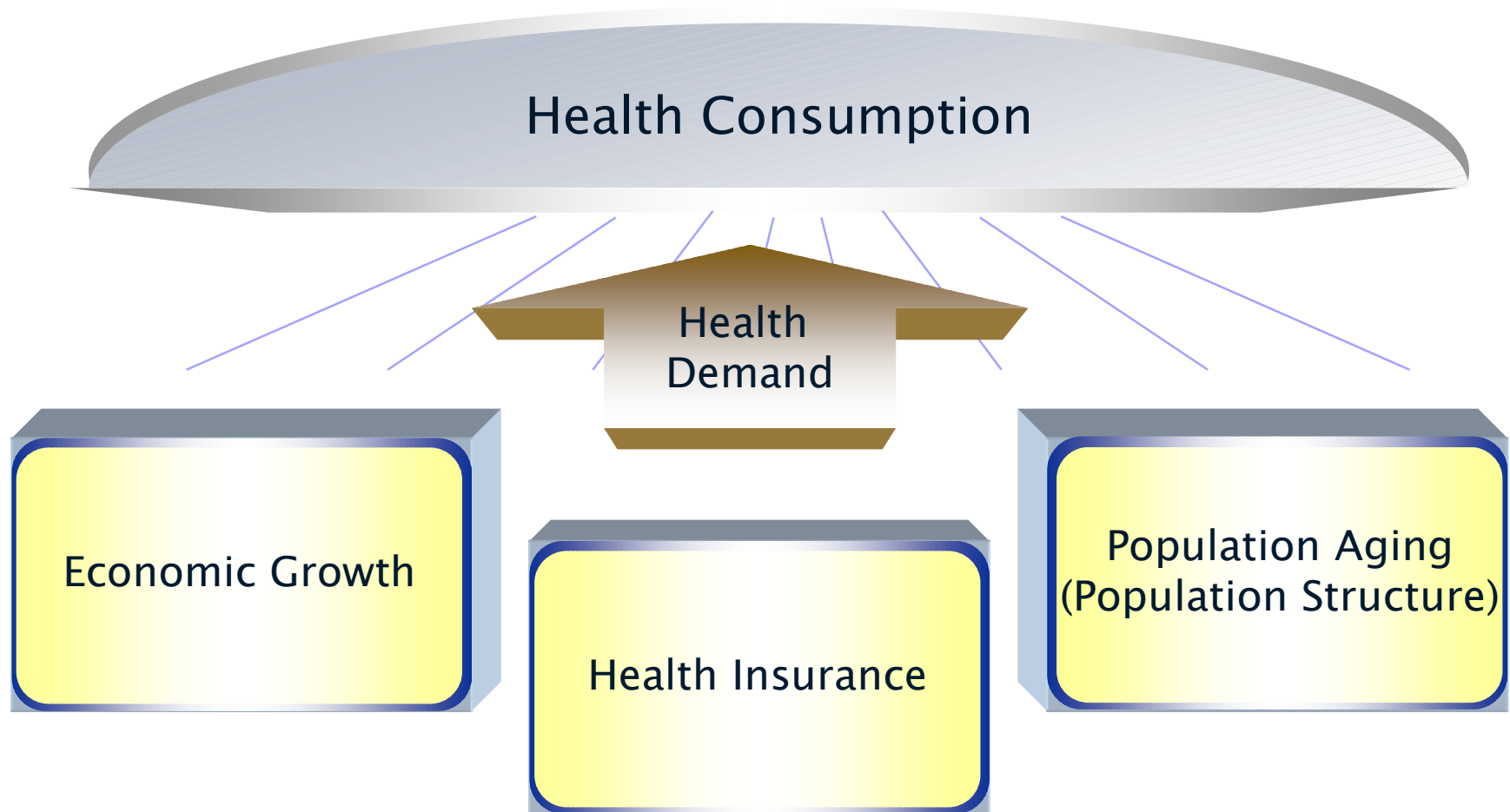
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# I. Motivation

## Population aging and Health consumption

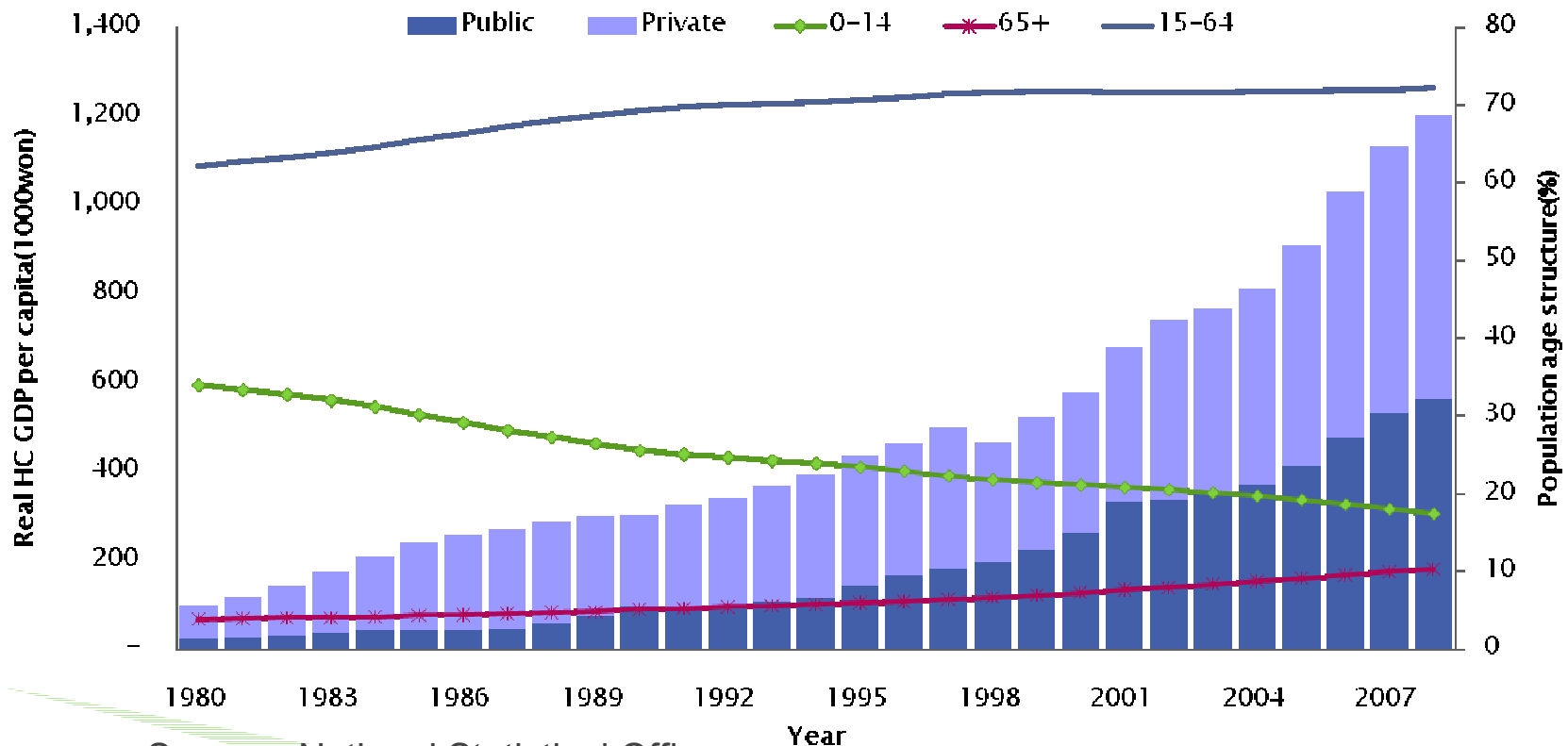
- health consumption change in Korea
- public vs private health consumption
- health consumption influenced by population aging?
- the same pattern as other countries?

## II. Background



- HC per capita increased about 12 times between 1980 and 2008, while real GDP per capita about 5.3 times.
- The share of age 14 and below decreased and the share of over age 65 increased. (34% → 17.4%, 3.8% → 10.3%)

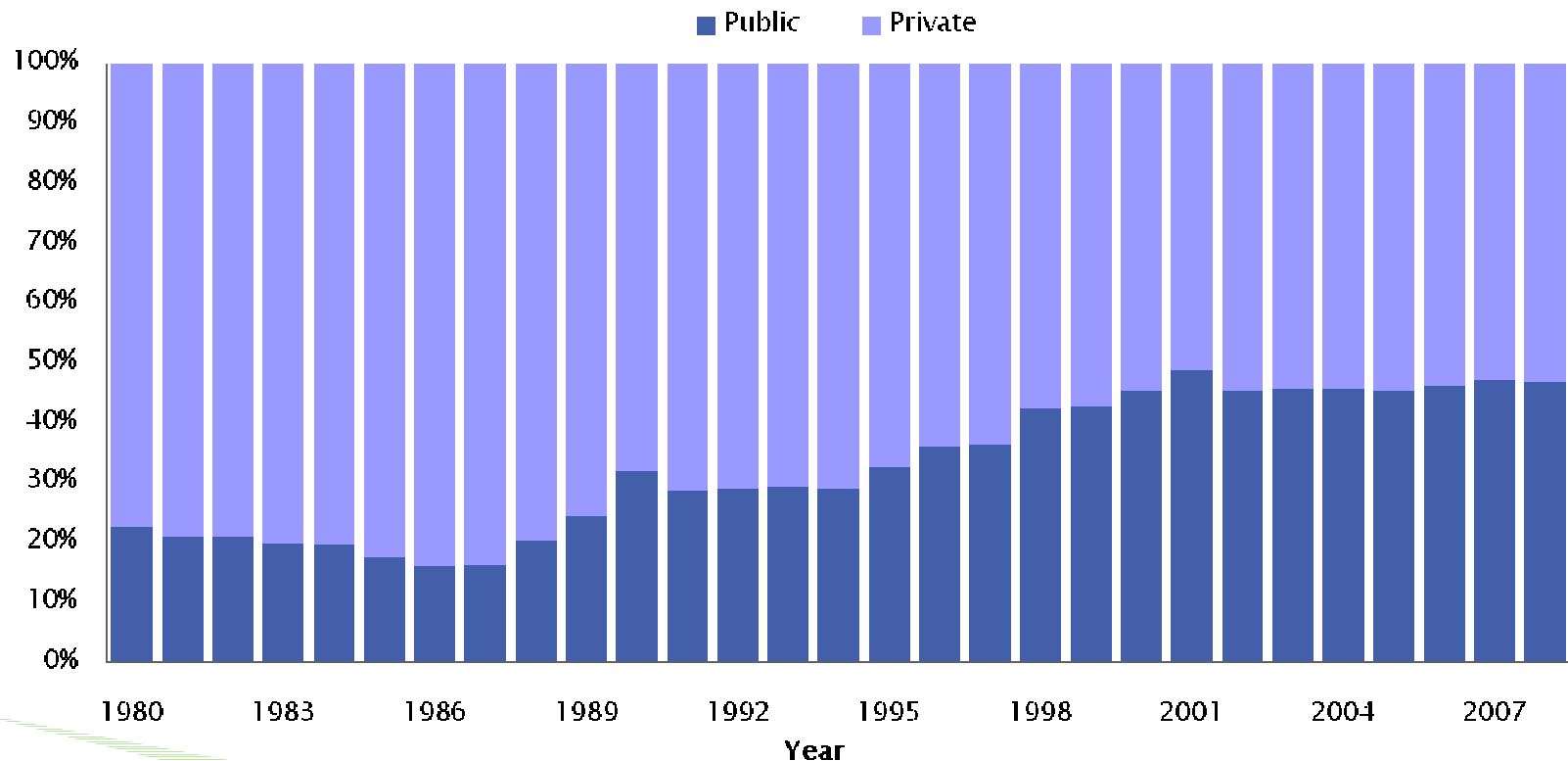
<Figure 1> Real HC GDP per capita & Population age structure



Source : National Statistical Office

- Public HC < Private HC
- But, the share of public HC has reached to about 47% since 1998.

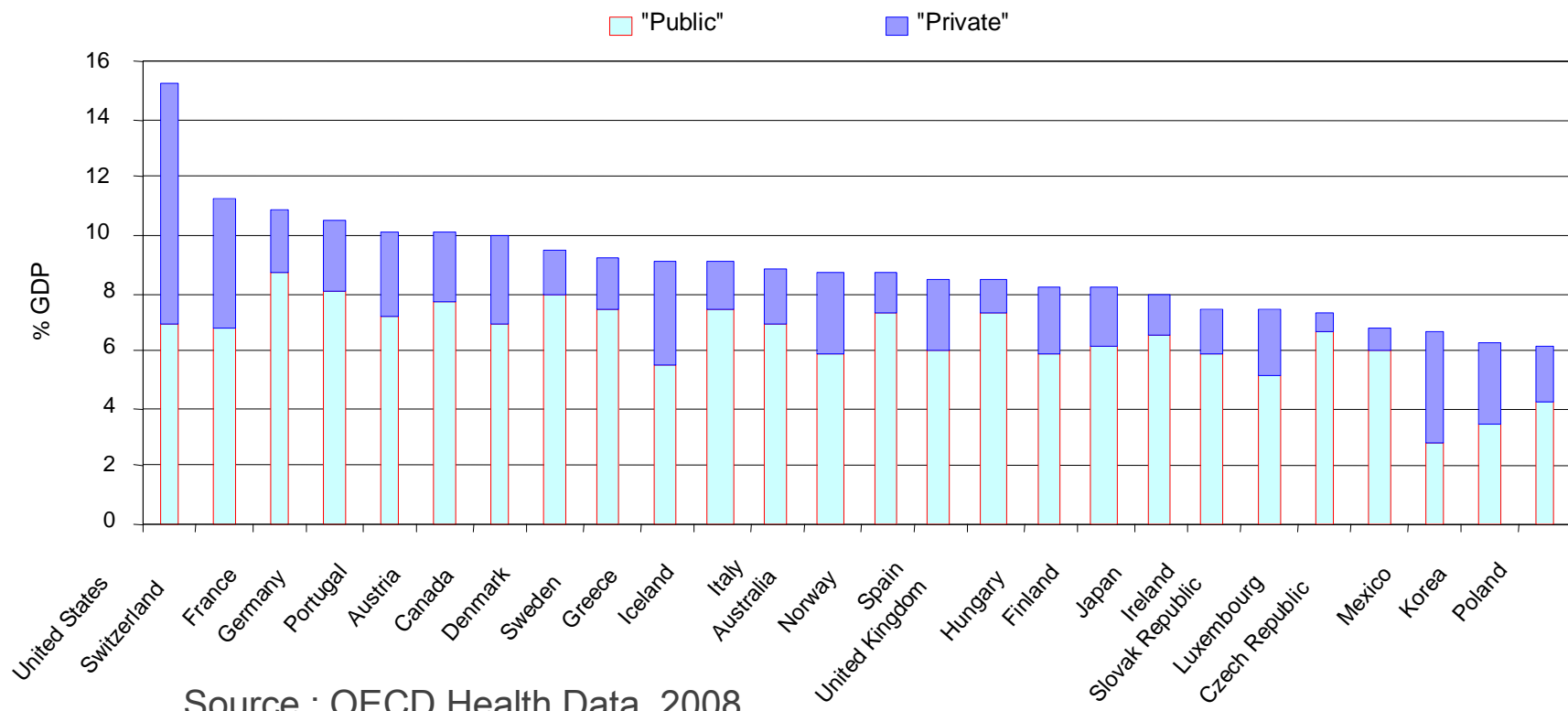
<Figure 2> The share of Public and Private HC (based on GDP)



Source : National Statistical Office

- Total HC in Korea is very low compared to OECD countries.

<Figure 3> Public and private health consumption as a ratio to GDP : OECD Countries, 2006



Source : OECD Health Data, 2008

# Health Security System in Korea

## National Health Insurance(NHI)

- a compulsory social insurance system with contributions

## Medical Aid

- a public assistance scheme for low-income households

Long-term Care Insurance : introduced in July 2008

<Table 1 > Population coverage

| Classification |                       | %    |
|----------------|-----------------------|------|
| Total          |                       | 100  |
| NHI            | Employee Insured      | 59.2 |
|                | Self-Employed Insured | 37.1 |
| Medical Aid    |                       | 3.7  |



# National Health Insurance

- 1977 : more than 500 employees
  - 1979 : more than 300, Government & Private School Employees
  - 1981 : more than 100 employees
  - 1988 : self-employed in rural areas
  - 1989 : self-employed in urban areas
- Medical security for whole population was accomplished.
- 2000 : separation of prescription and dispensing of drugs
  - 2003 : financial integration between employee and self-employed



# Method for HC

Public : age distribution of benefits

Private

1. Age profile of individual utilization measures

$$CFE_j = \sum_a \alpha(a) IN_j(a) + \sum_a \beta(a) OUT_j(a) + \epsilon_j$$

2. Age profile of utilization from alternatives source  
: a single utilization measure for each age

$$CFE_j = \sum_a \beta_0 U(a) M_j(a) + \sum_a \beta_1 a U(a) M_j(a) + \sum_a \beta a^2 U(a) M_j(a) + \epsilon_j$$

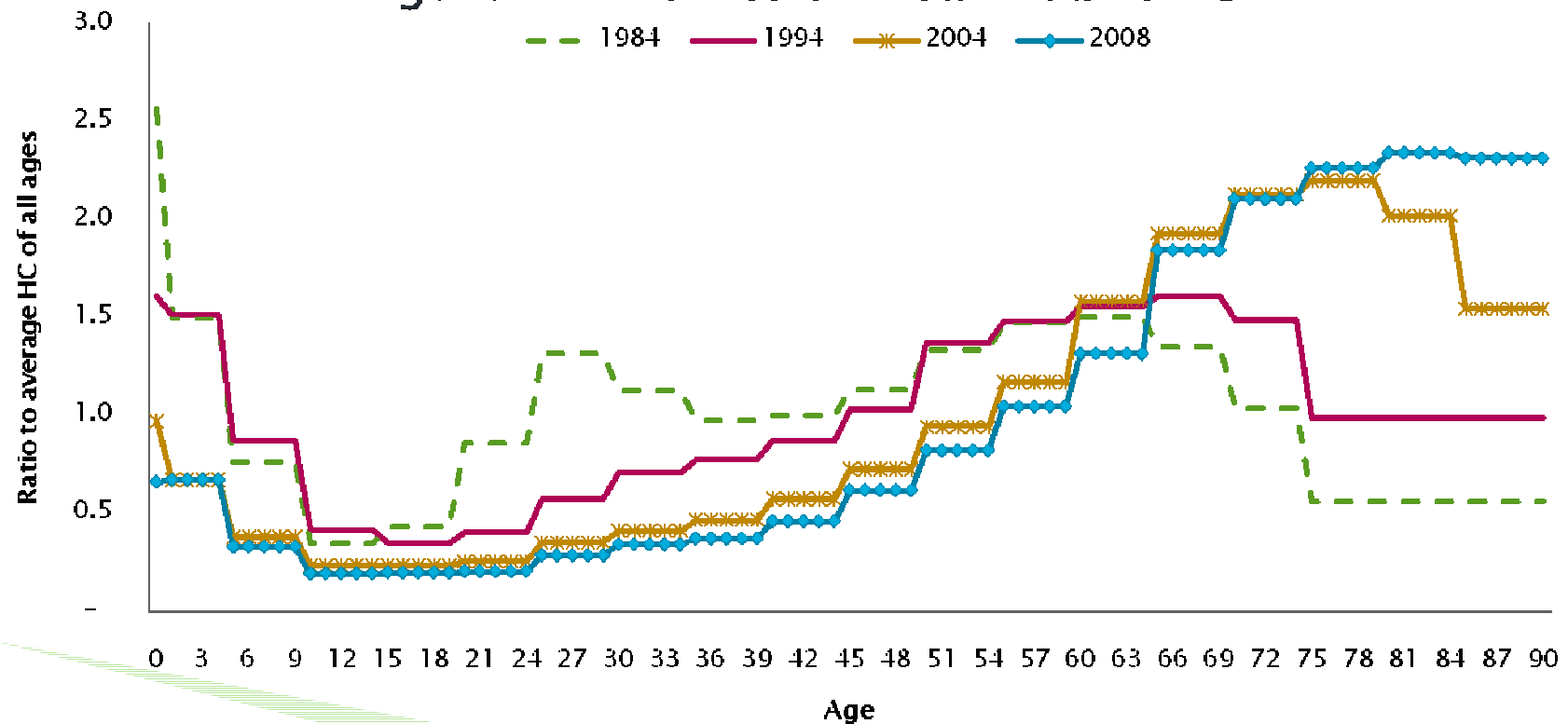
3. Iterative method → used here
4. Simple regression approach

$$CFE_j = \sum_a \beta(a) M_j(a) + \epsilon_j$$

## IV. Results

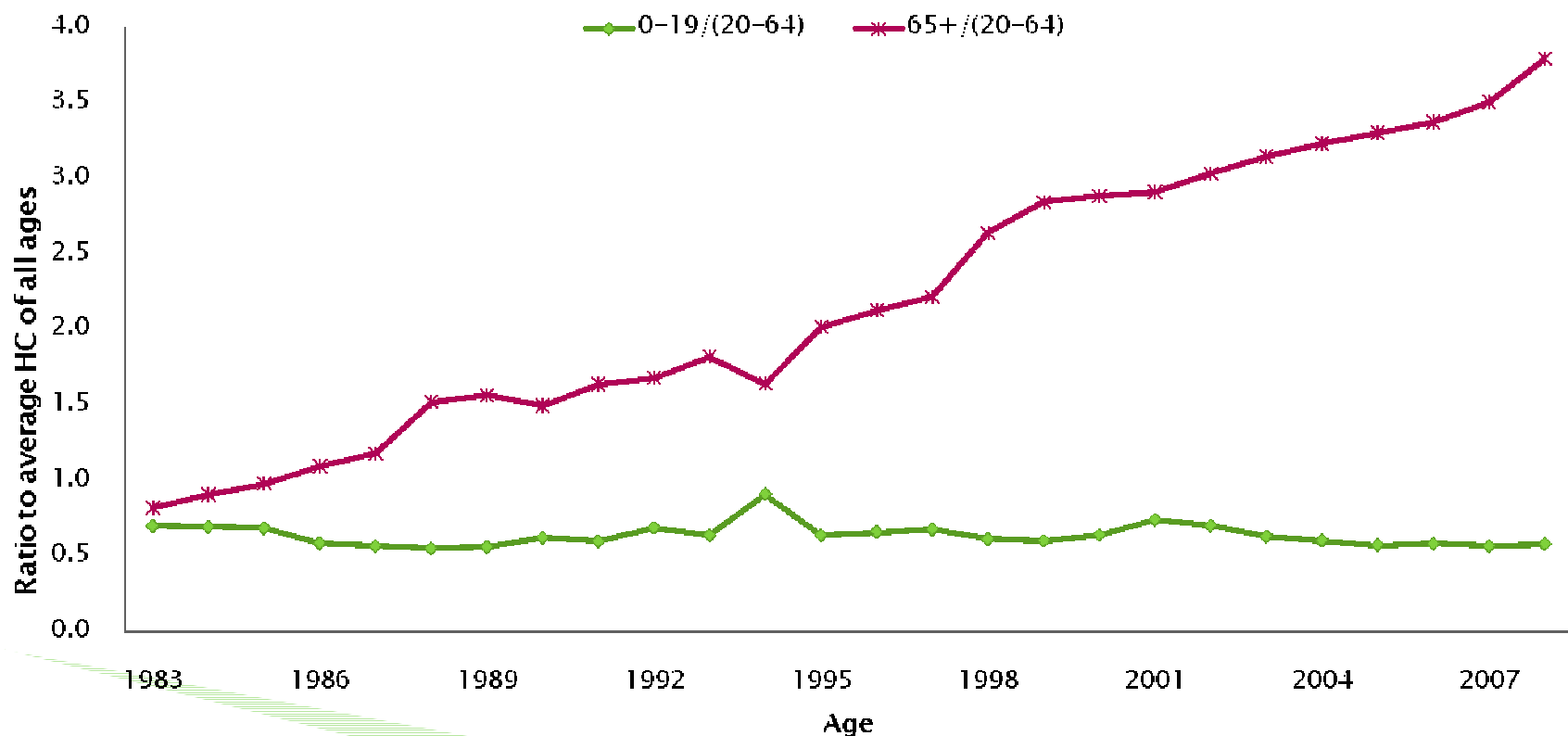
- Normalization : ratio to average HC of all ages
- There was a sharp increase in the elderly HC
- There was a decrease in HC of children & working ages.

<Figure 4> Profiles of Mean Public HC



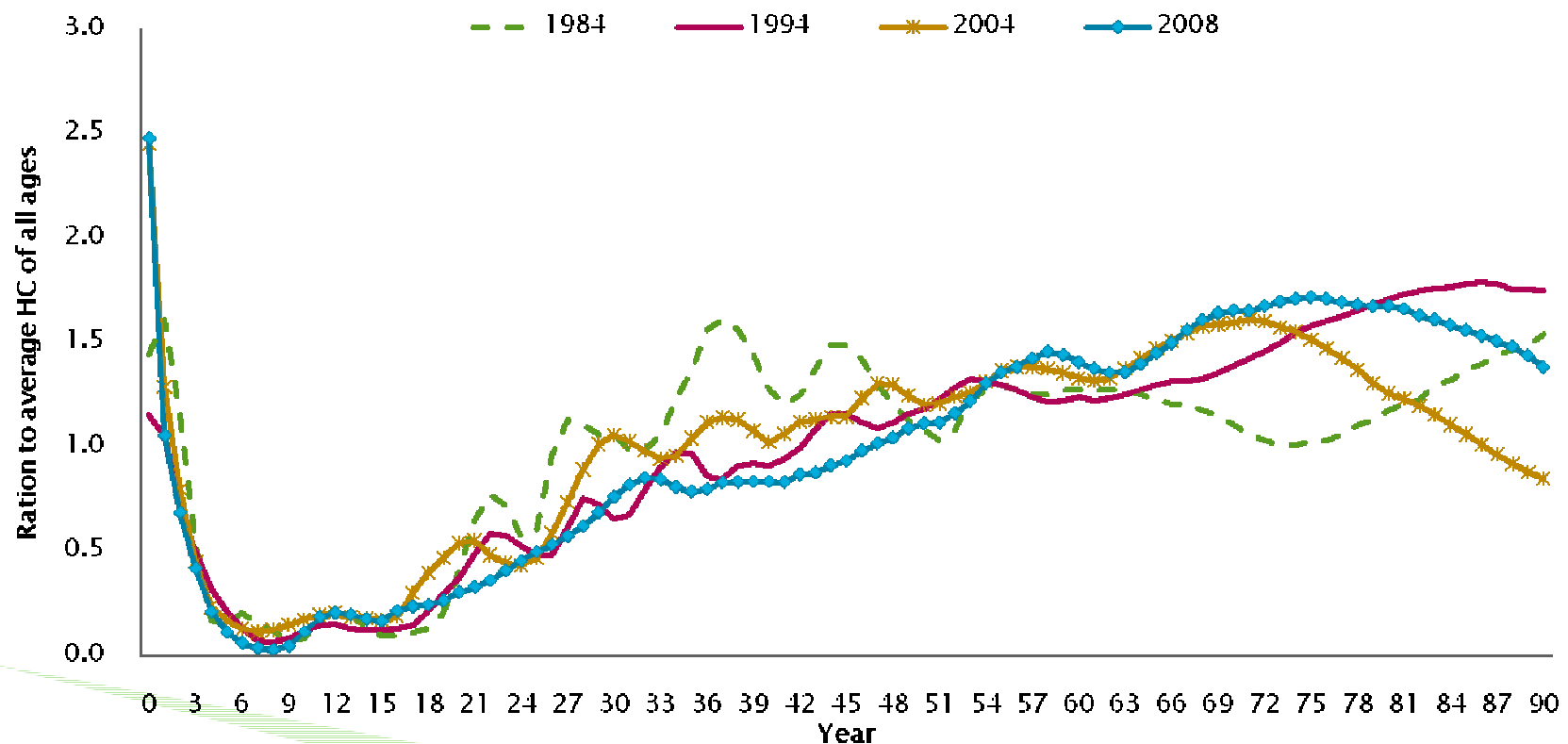
- Public HC for the elderly increased rapidly.(the mid & late of 90's, '08)
- Especially, rapid increase in '08 was related to long-term care insurance.
- Public HC for children has not changed.

<Figure 5> Trends of Mean Public HC by broad age groups



- Private HC of working ages decreased from 1984 to 2008.
- The pattern of the elderly over 80 is complicated to explain.

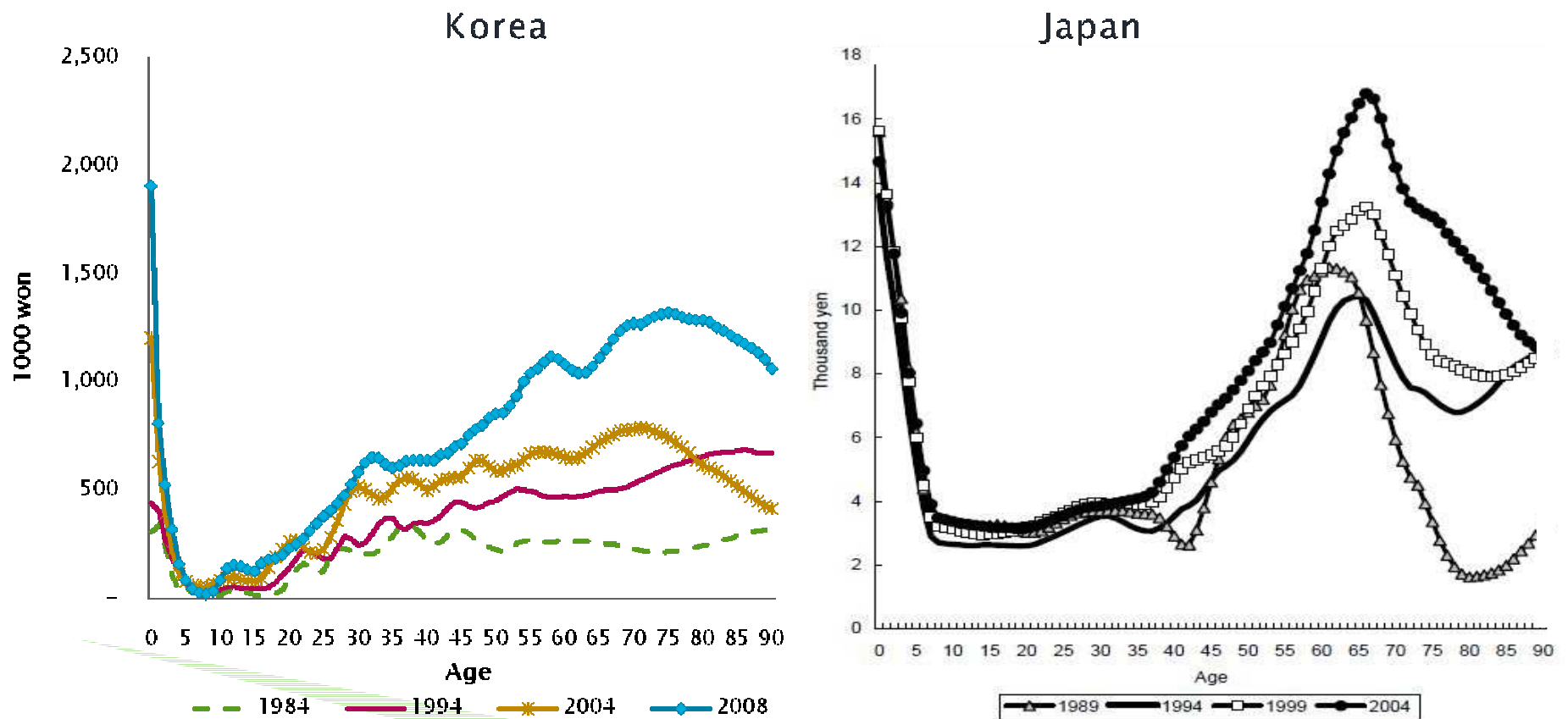
<Figure 6> Profiles of Mean Private HC



# Private

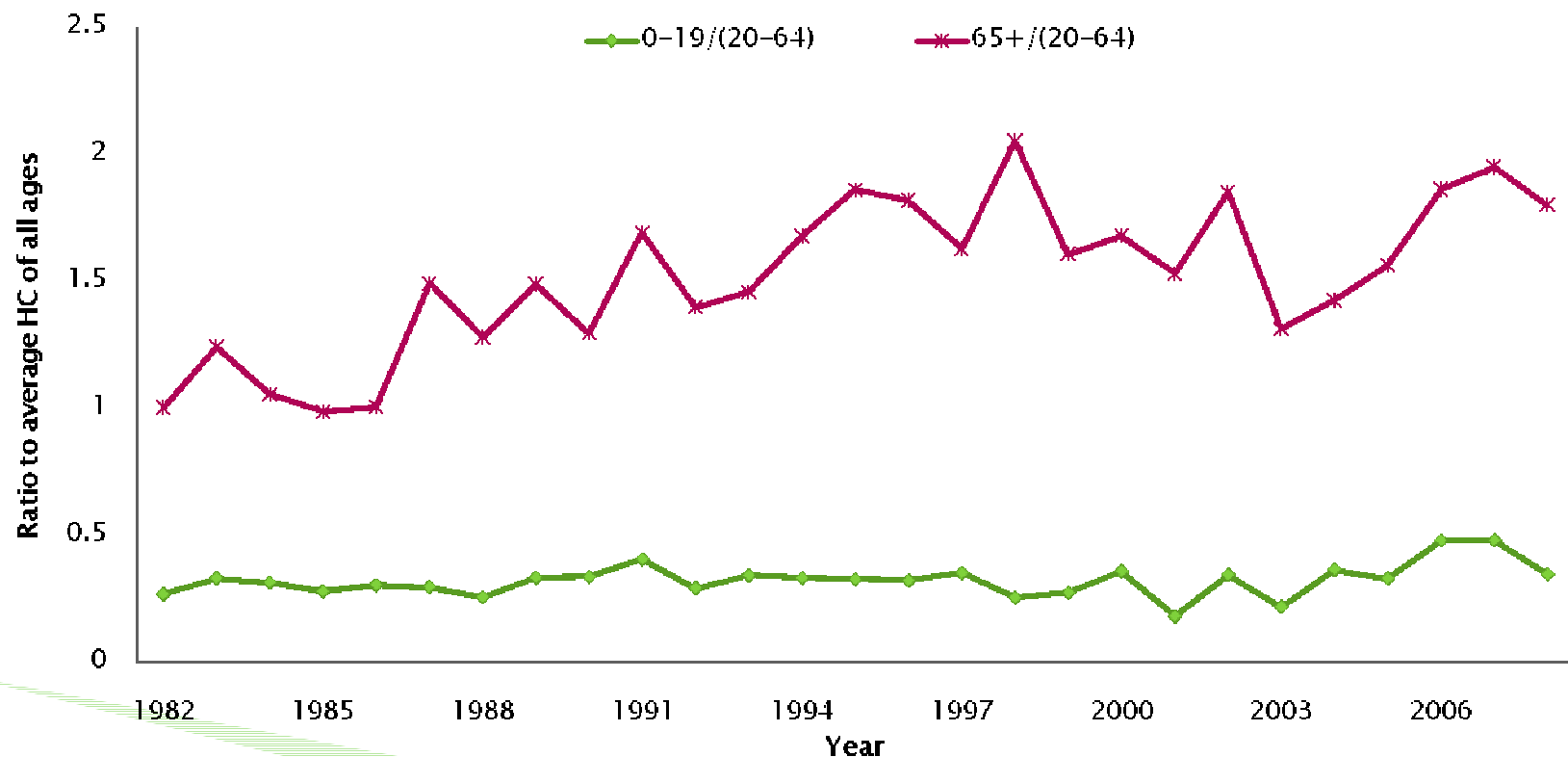
- Japanese private HC of the elderly was larger than Korean.
- But, private HC of Korean elderly becomes similar to Japanese pattern since 2000's due to rapid population aging.

<Figure 7> Mean Private HC by age, real value : Korea, Japan



- Private HC for the elderly had increased steadily and decreased between 1997 and 2003 and increased thereafter.
- Private HC for children seldom changed.

<Figure 8> Trends of Mean Private HC by broad age groups

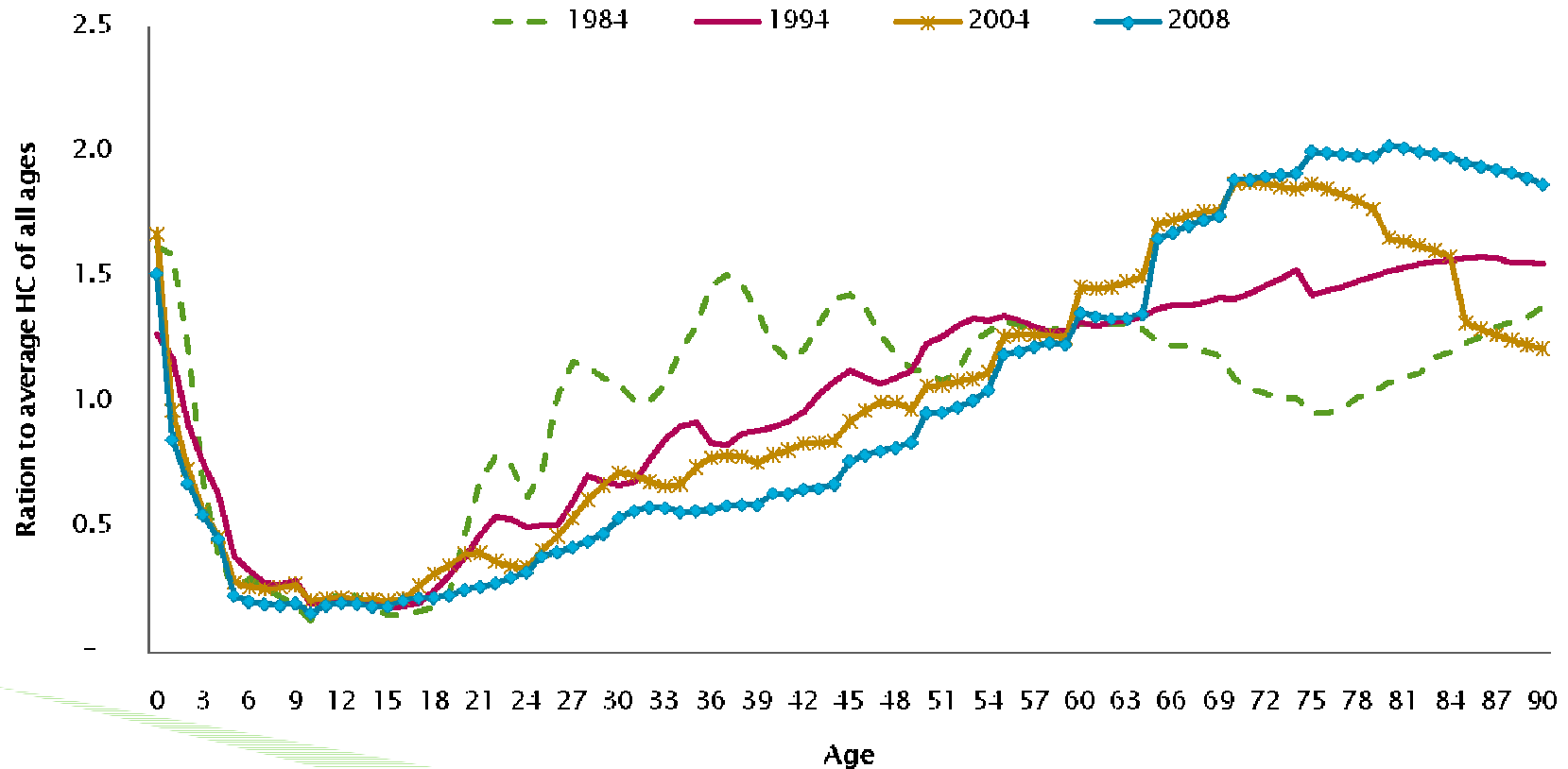




# Total

- There was a sharp increase in HC of the elderly.
- It was mainly due to a rise in public elderly HC.
- HC for working age decreased.

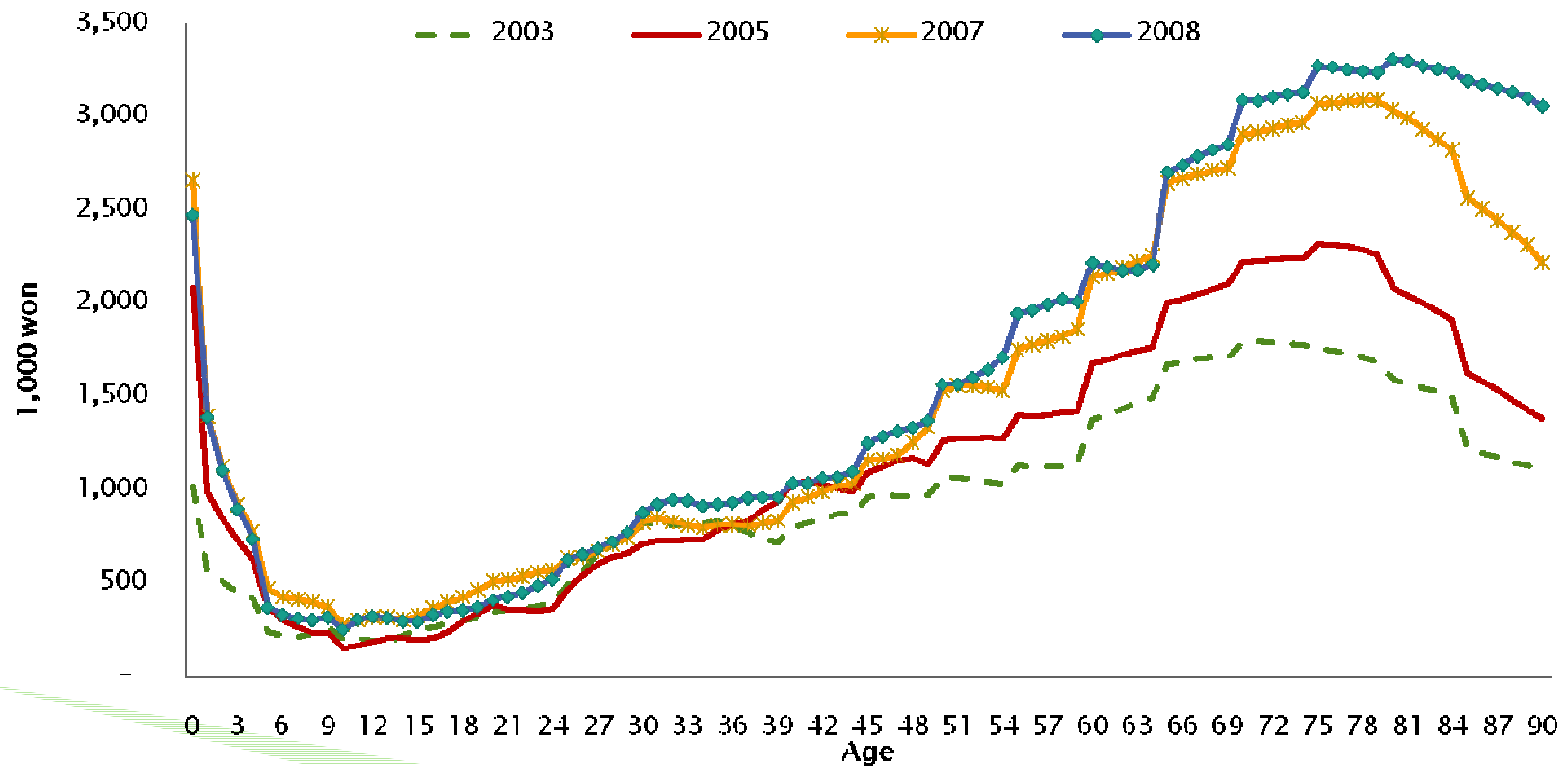
<Figure 9> Profiles of Mean HC



# Total

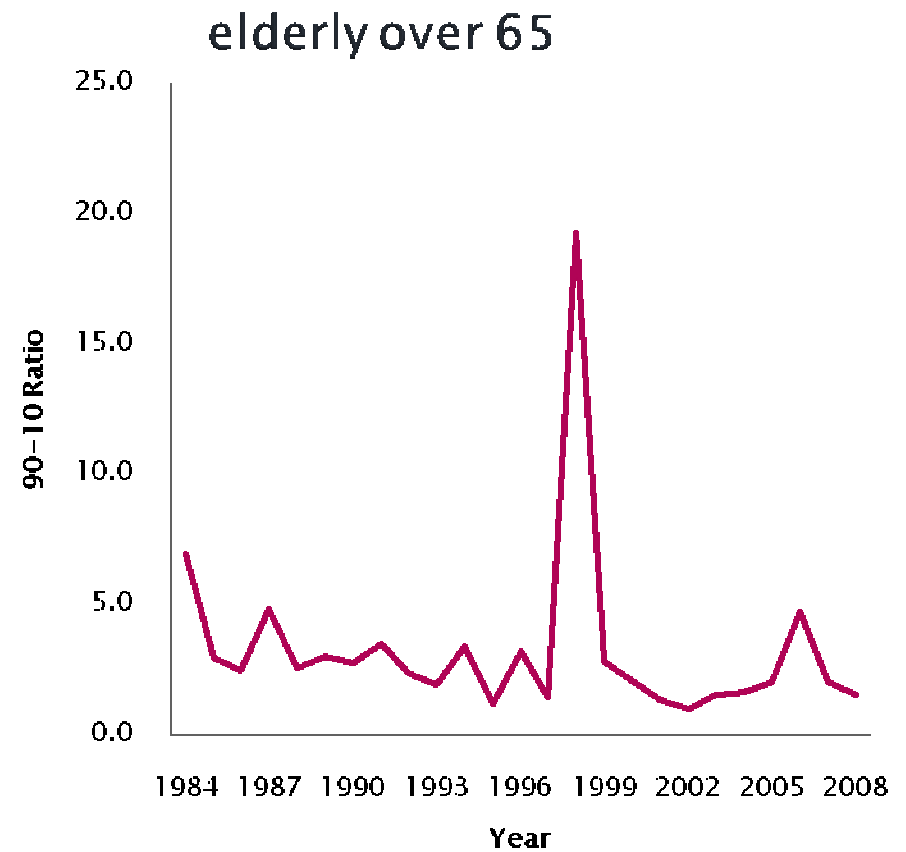
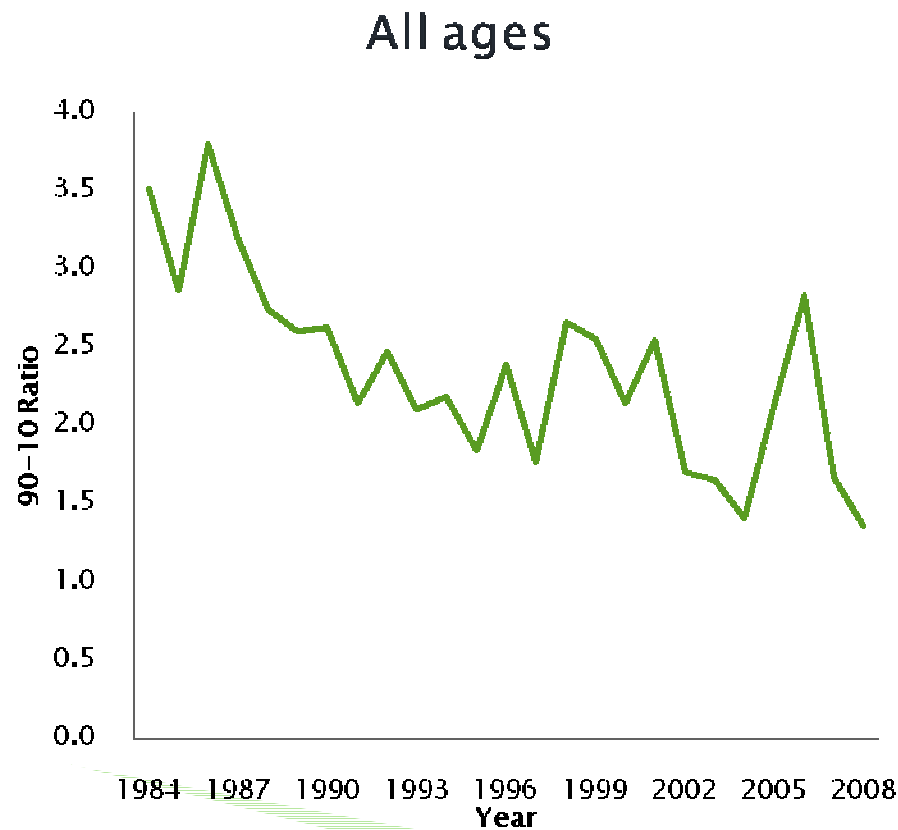
- In recent years, mean HC for the elderly increased remarkably.
- Peak age increases from 2003 to 2008.
- HC for middle old ages also increased.

<Figure10> Profiles of Mean HC, real value, 2003~2008



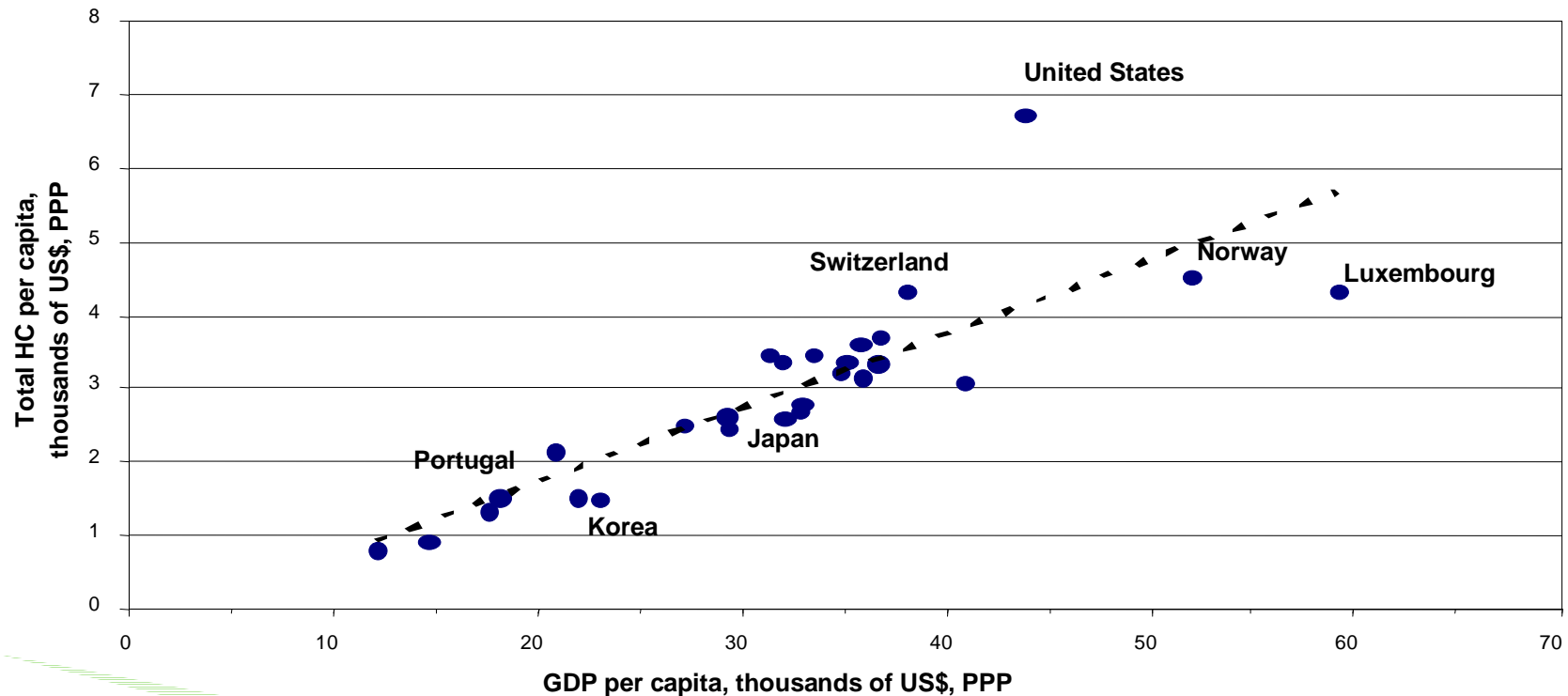
- Private HC shows an improvement in equity.

<Figure11> 90-10 ratio of Private HC



- A positive relation between GDP per capita and HC per capita.

<Figure 12> Total Health Expenditures per Capita versus GDP per Capita  
: OECD Countries, 2006



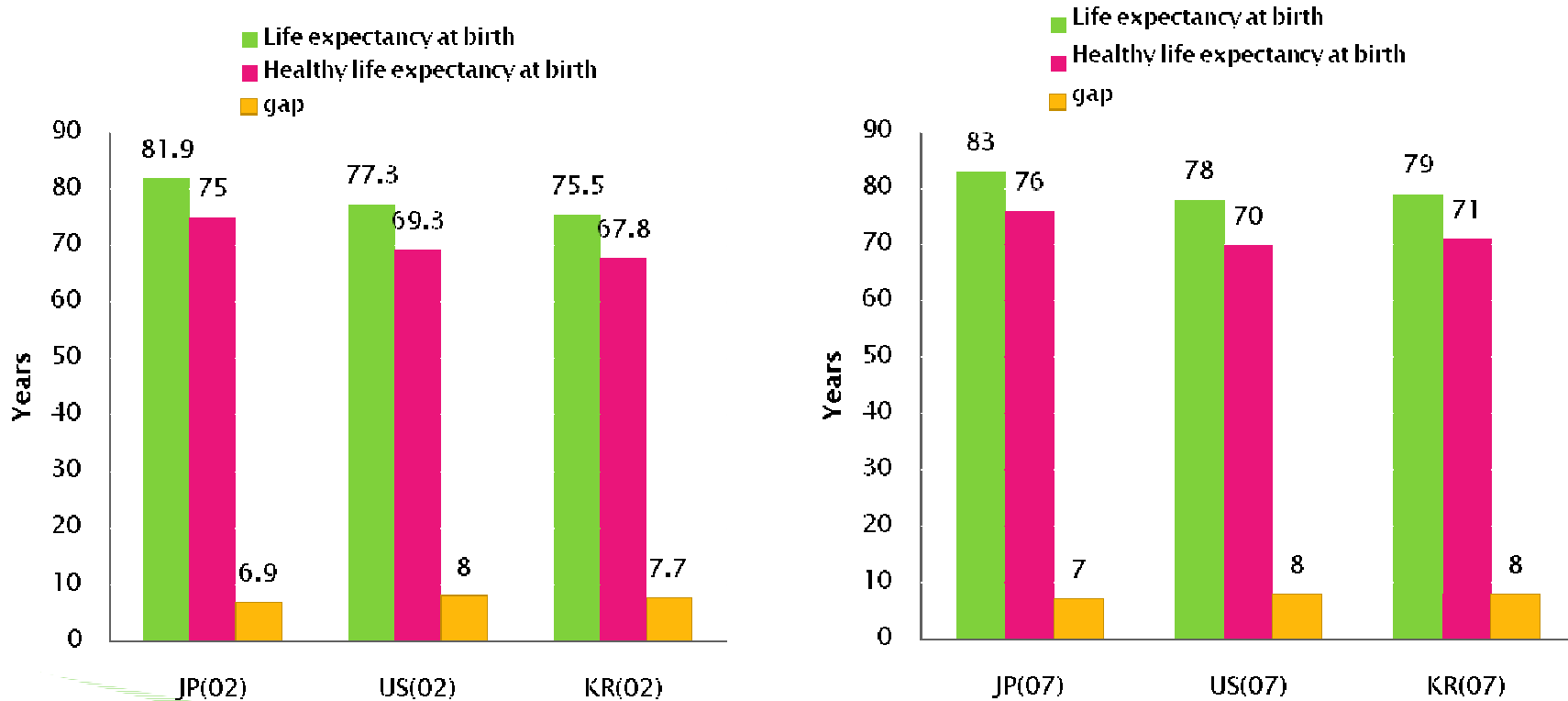
Source : OECD Health Data, 2008

# Comparision

In 2002

- Life expectancy at birth : Japan > US > Korea
- Healthy life expectancy at birth : Japan > US > Korea
- Gap : US > Korea > Japan

<Figure 1 3> Life expectancy & Healthy life expectancy

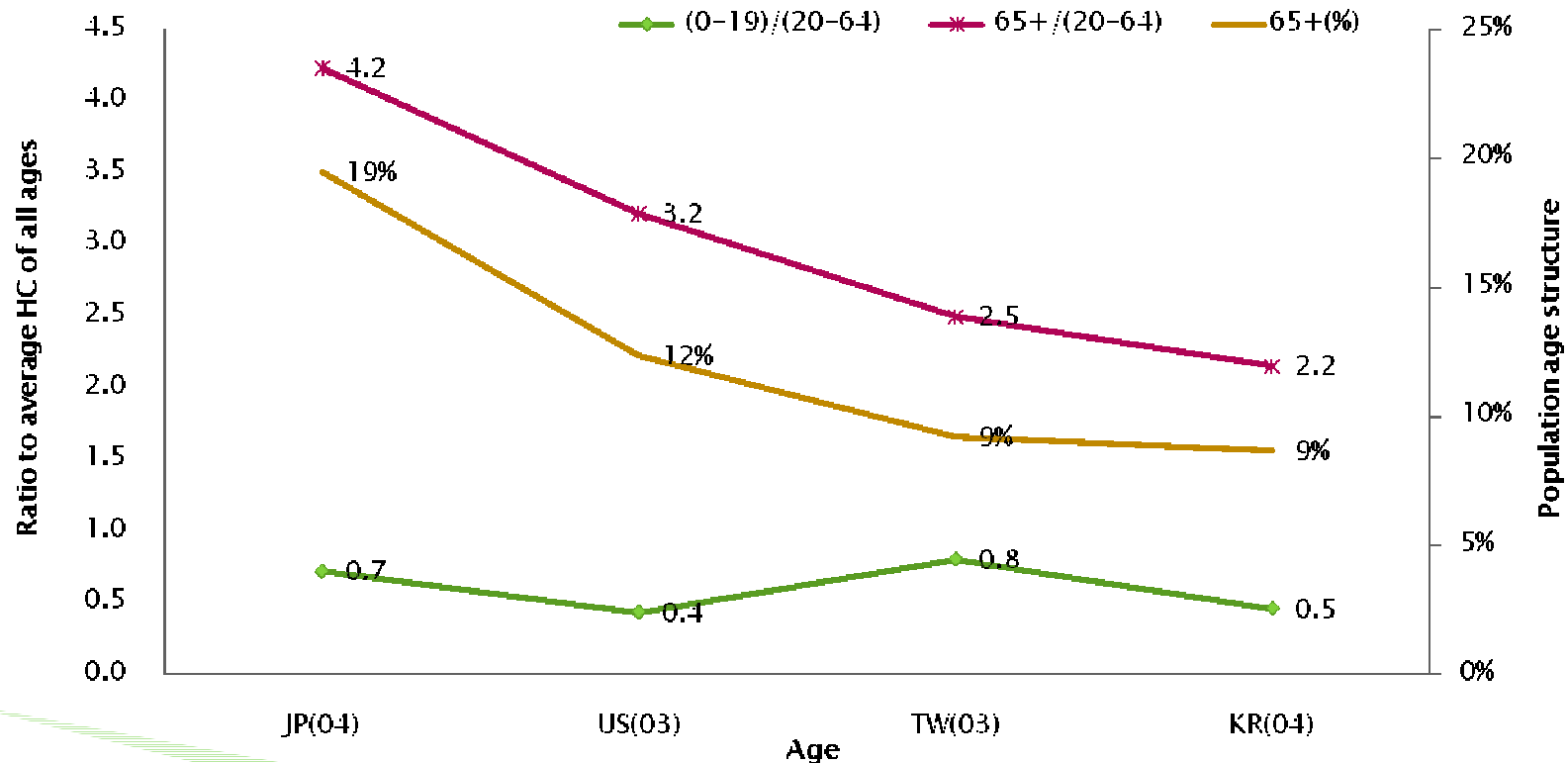


Source : <http://www.who.int>

# Comparision

- A share of over age 65 population affected mean HC.
- Japan > U.S. > Taiwan > Korea

<Figur 1 4> Ratio to mean HC by broad age groups, selected countries

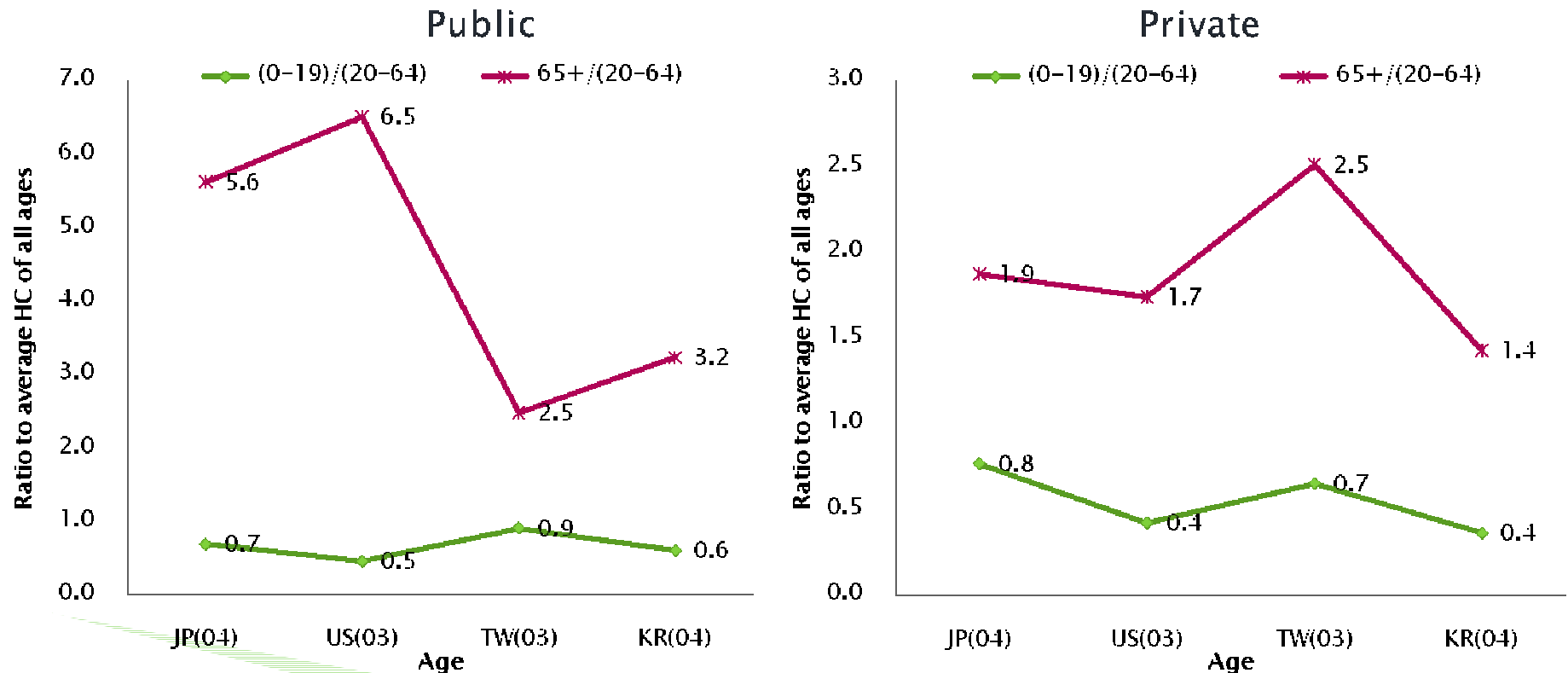


Source : <http://www.ntaccounts.org>

# Comparison

- In Taiwan, private HC was the largest regardless of age.
- In US, public HC was the largest among over age 65.
- Korean private HC was the smallest regardless of age and it means that working age relatively consumed more within household income.

<Figure 15> Ratio to mean HC by broad age groups, selected countries



Source : <http://www.ntaccounts.org>

## V. Conclusion & Implications

- 1) There was a big growth in HC for the elderly, mainly due to the sharp increase in public HC.
- 2) HC is expected to keep increasing due to a rapid population aging which induces the sharp increase in the demand for health care service.
- 3) It could be a huge burden for public finance in the future, especially from the long-term care insurance.



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# Thank you!

