

Panel Discussion on the International Conference on Trends and Problems  
of the World Population in the 21<sup>st</sup> Century, 50 years since Rome 1954

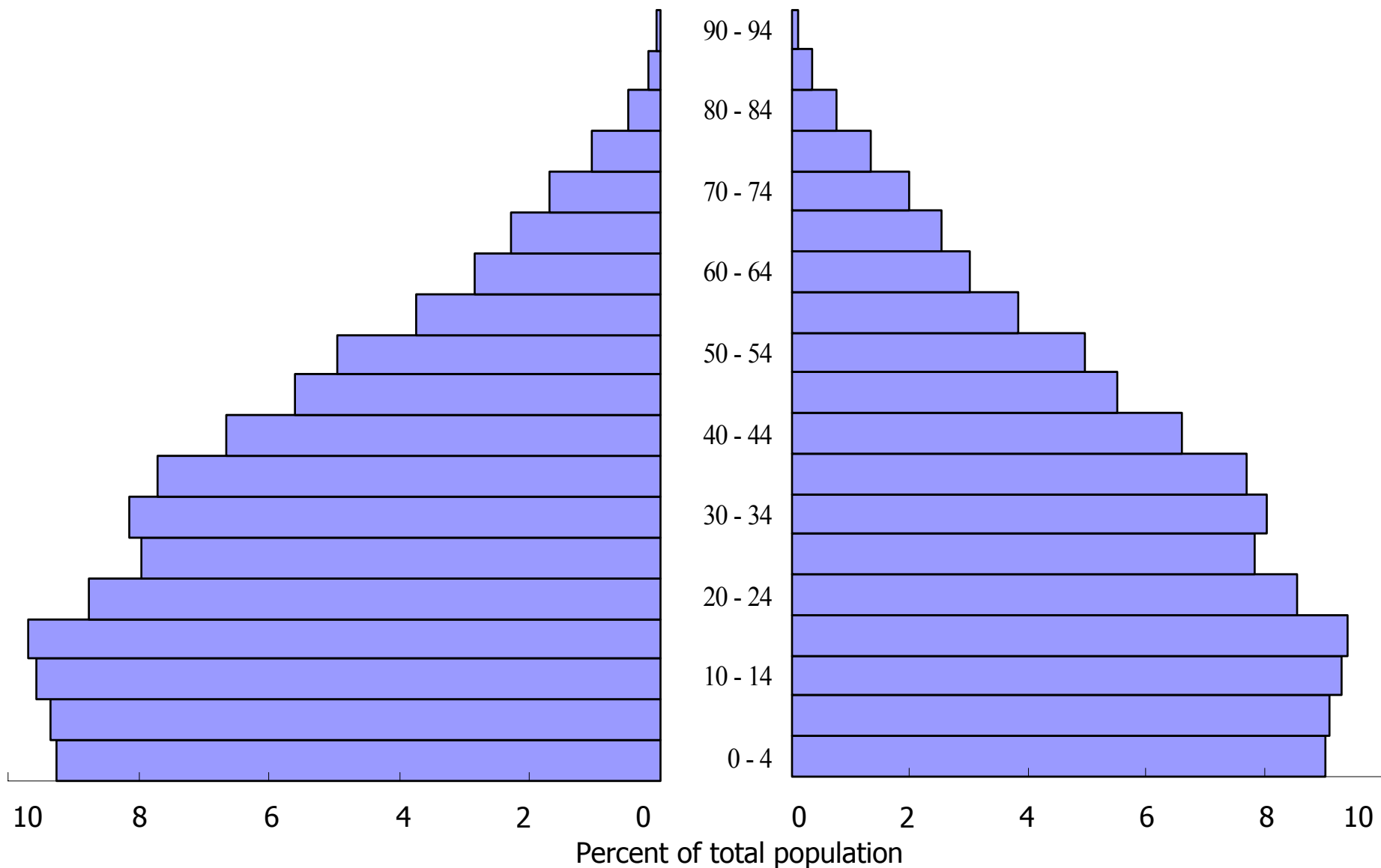
# Changing age structures of population in Asia and their implications for development

Naohiro Ogawa

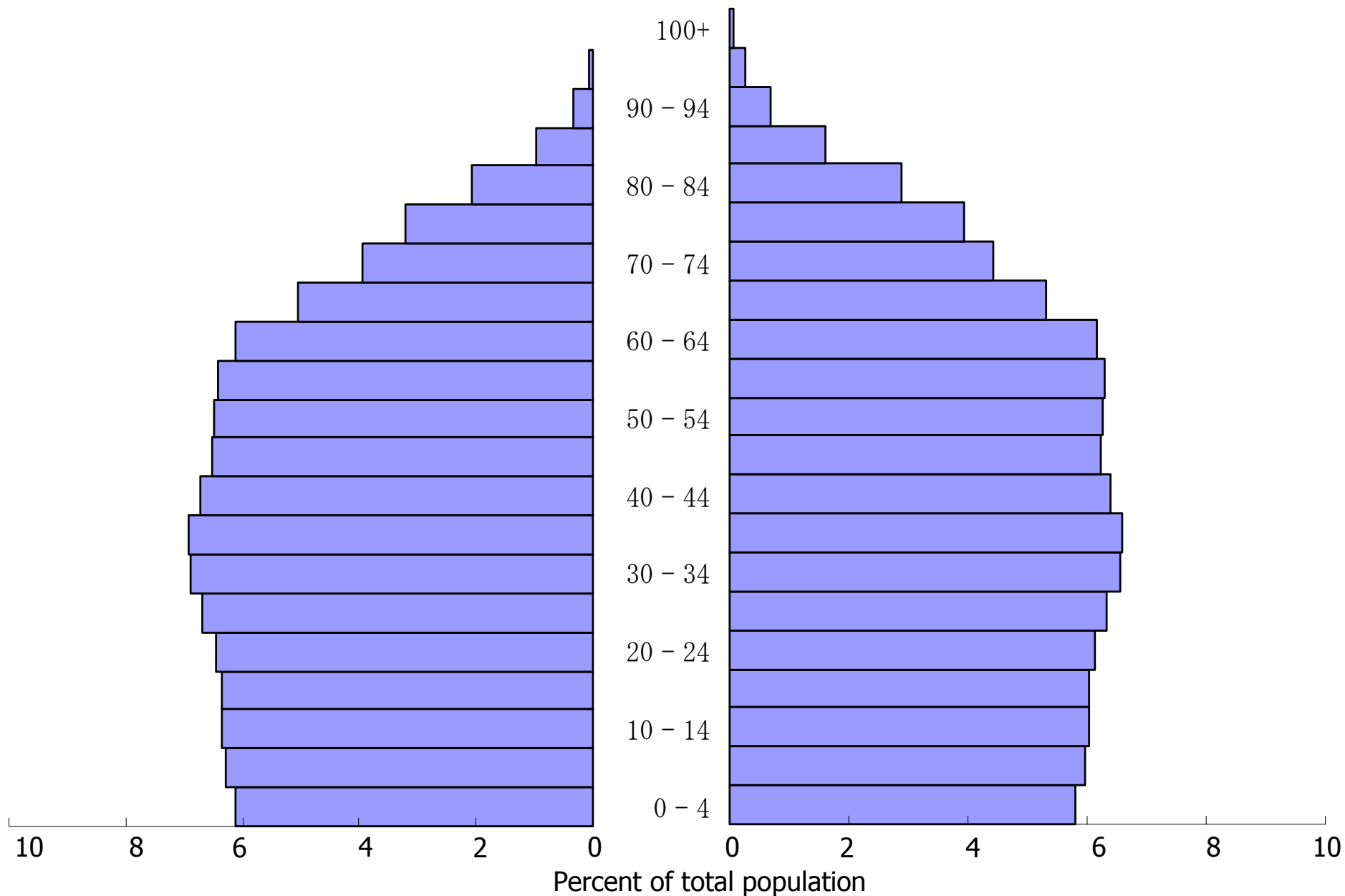
Maliki

Rikiya Matsukura

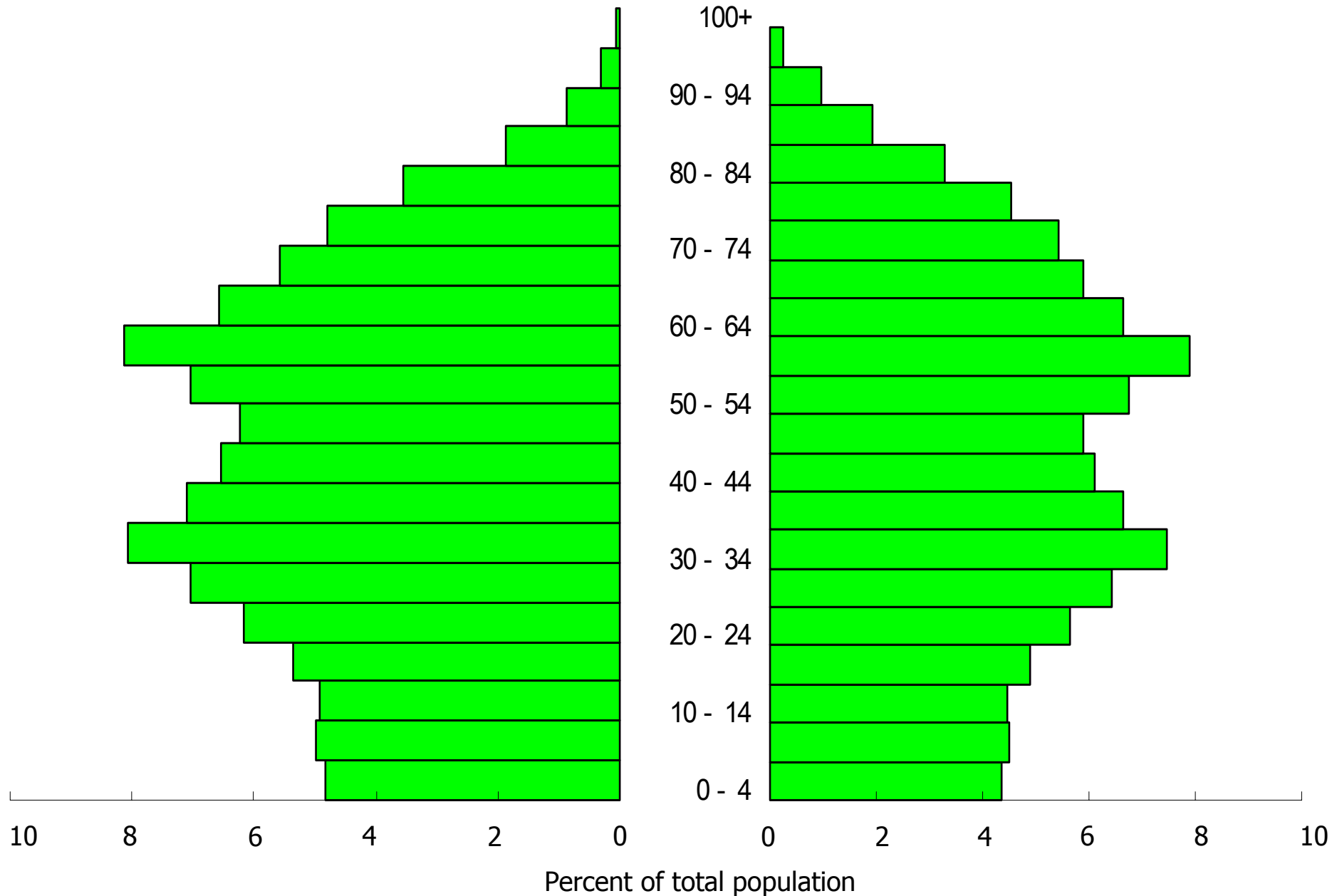
# Age Structure of Asia's Population in 2005



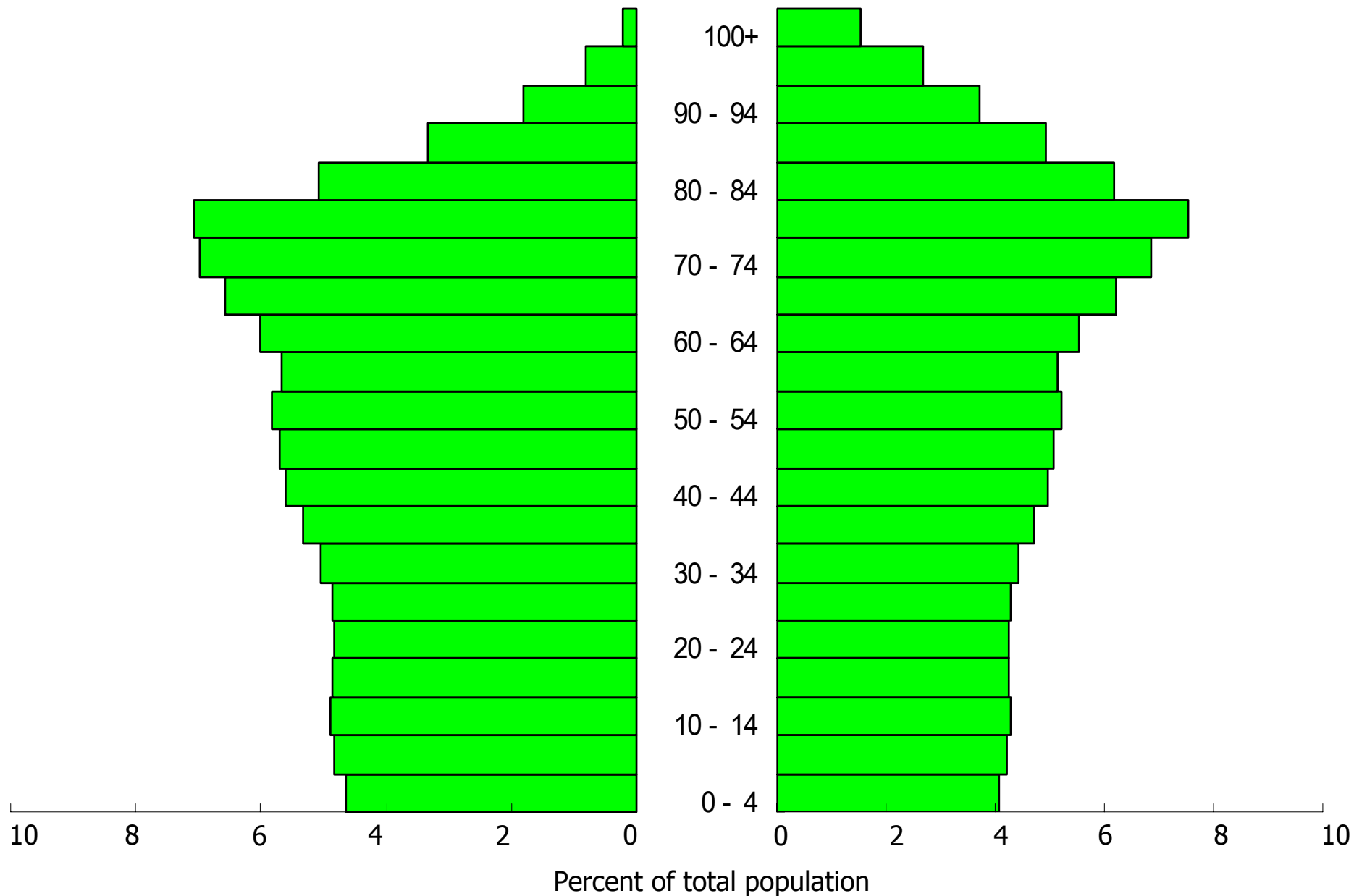
# Age Structure of Asia's Population in 2050



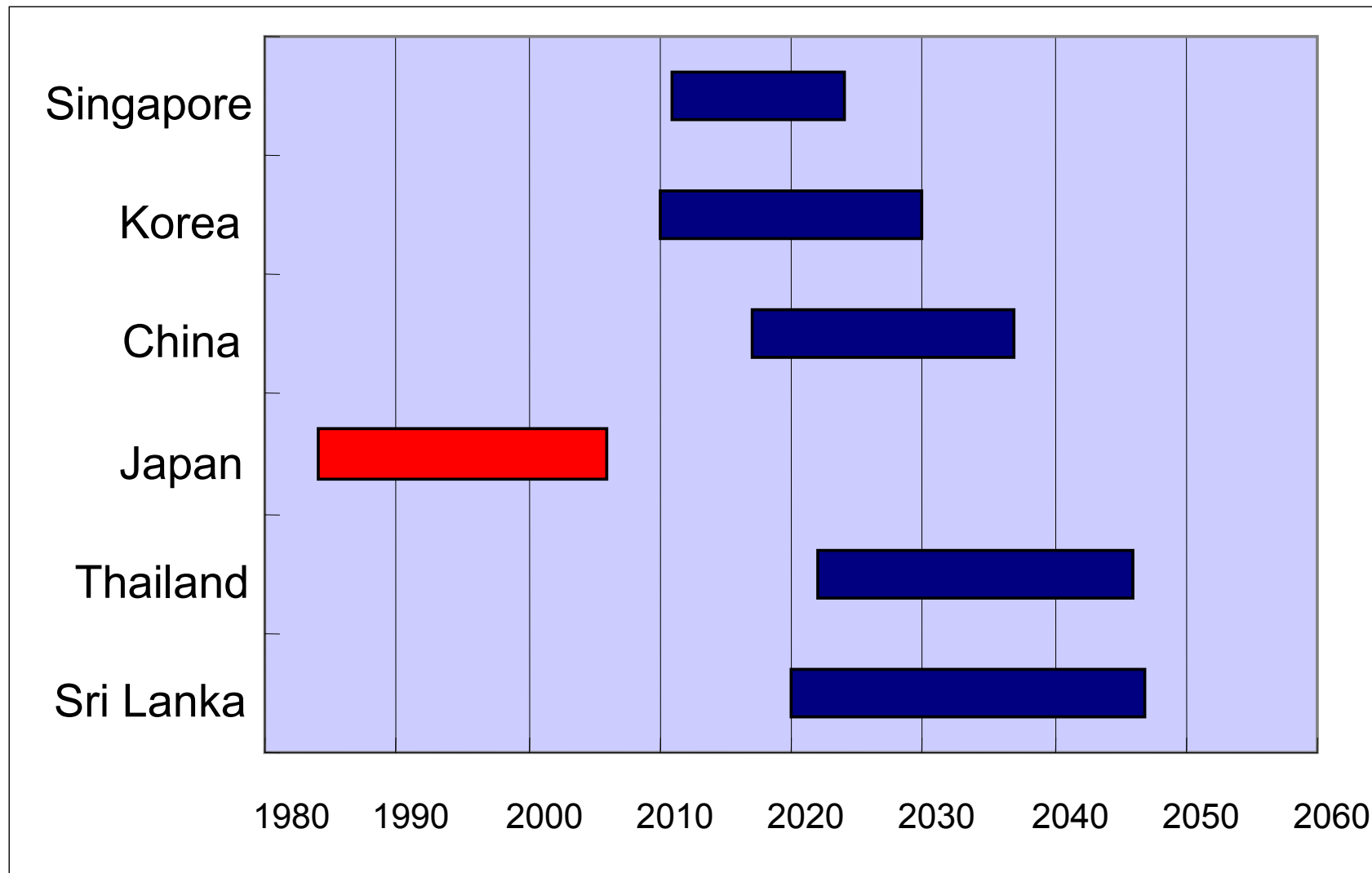
# Age Structure of Japan's Population in 2005



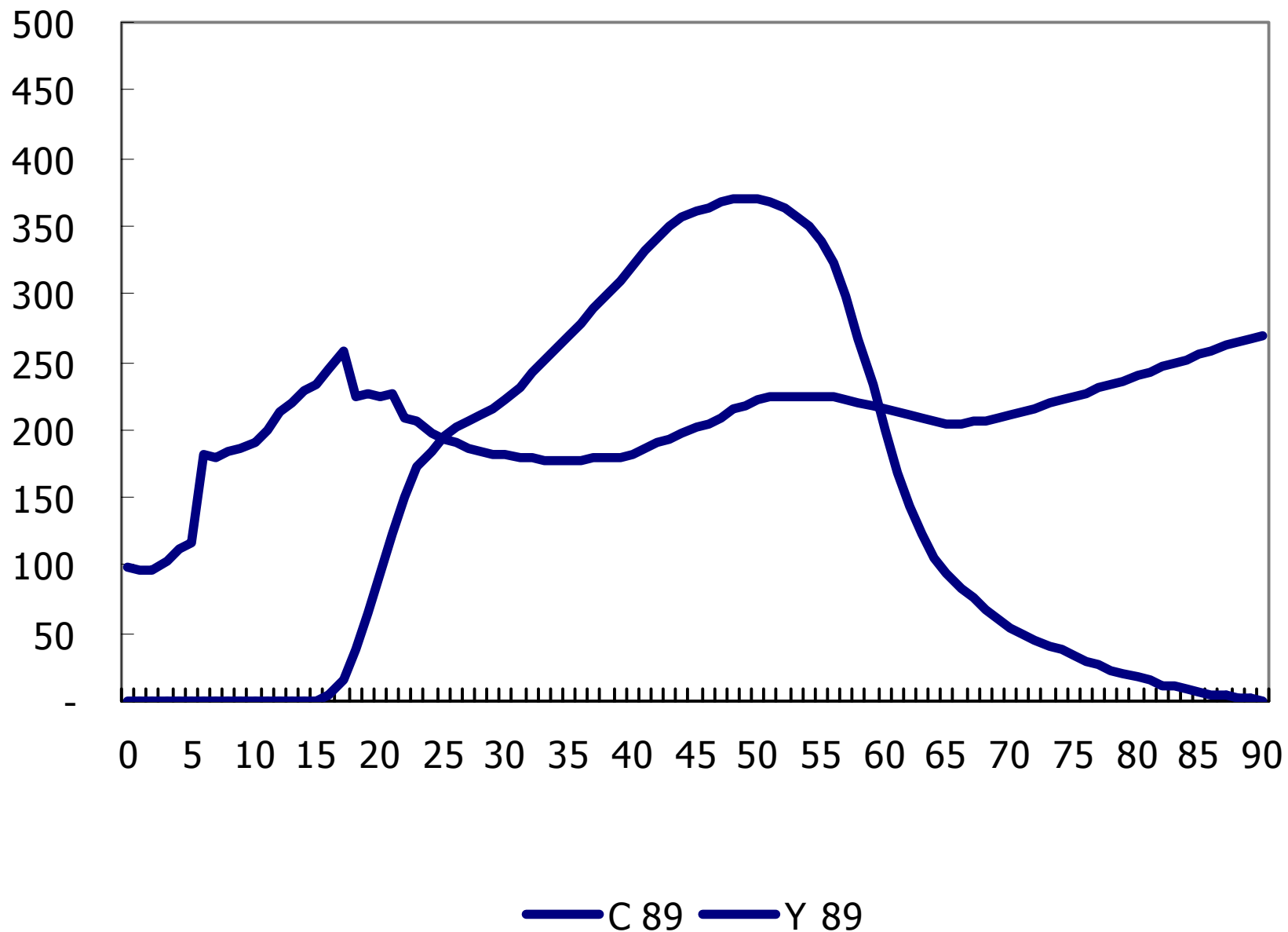
# Age Structure of Japan's Population in 2050



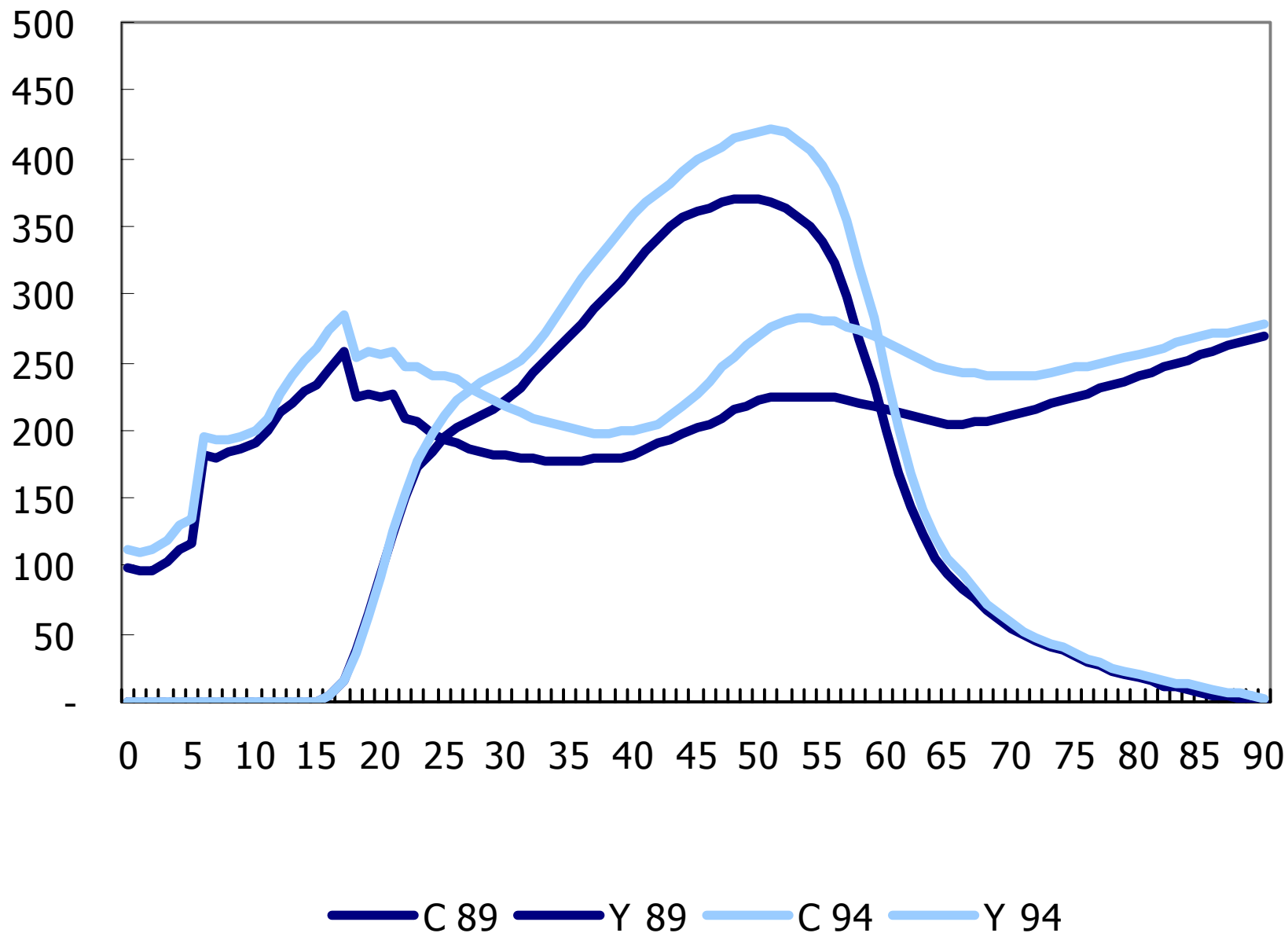
# International Comparison on the Speed of Population Aging



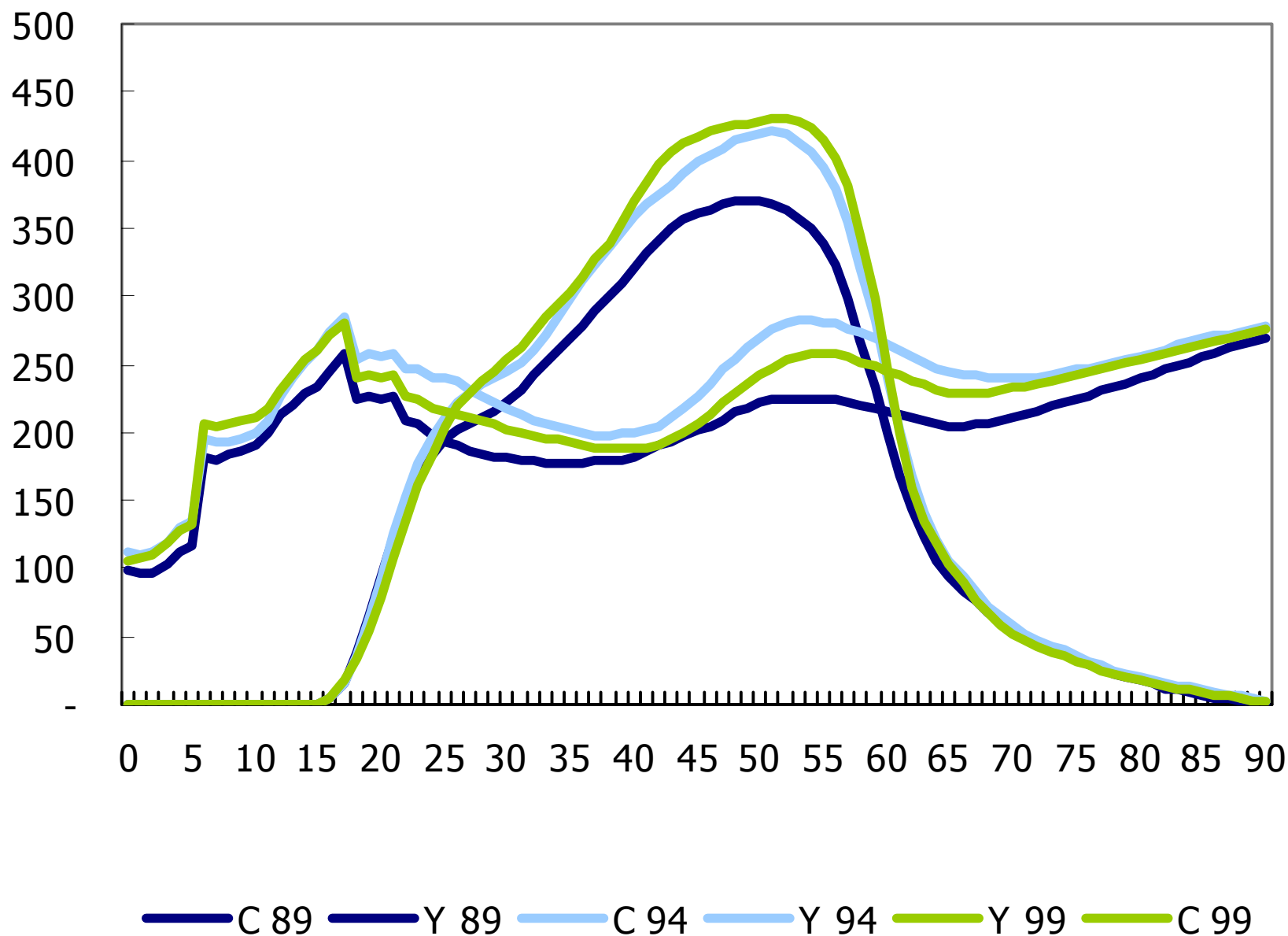
# Age Profiles of Per Capita Production and Consumption, 1989, 1994, 1999, 2004, Thousand Yen



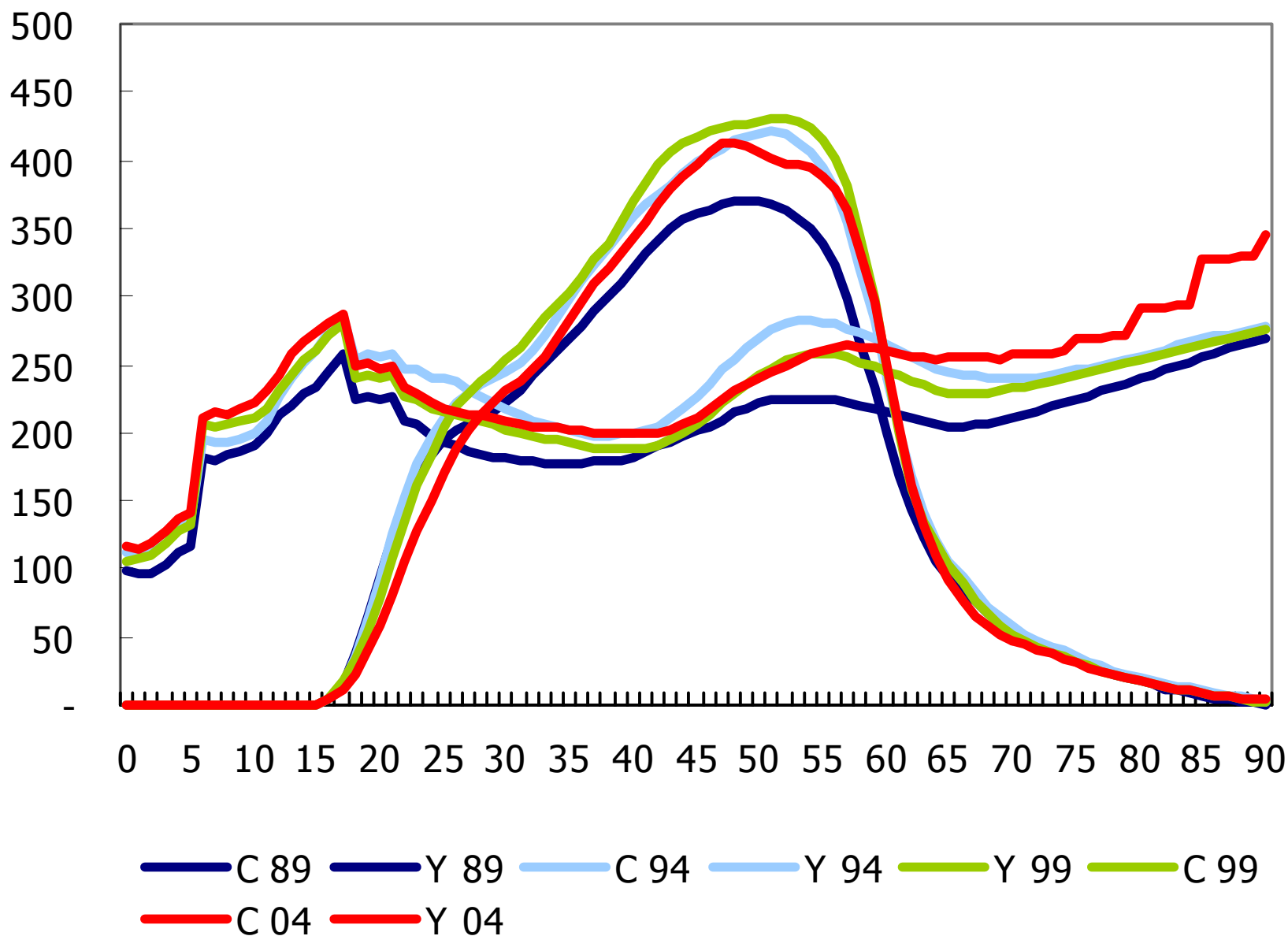
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# Age Profiles of Per Capita Production and Consumption, 1989, 1994, 1999, 2004, Thousand Yen



# **Japan's most important graph reflects a host of vital economic and social factors**

**Changing earnings profile**

**Hours worked**

**Women's labor force participation**

**Sectoral allocation of the labor force**

**Child care and old age leave**

**Change in retirement age**

**Change in the remuneration system**

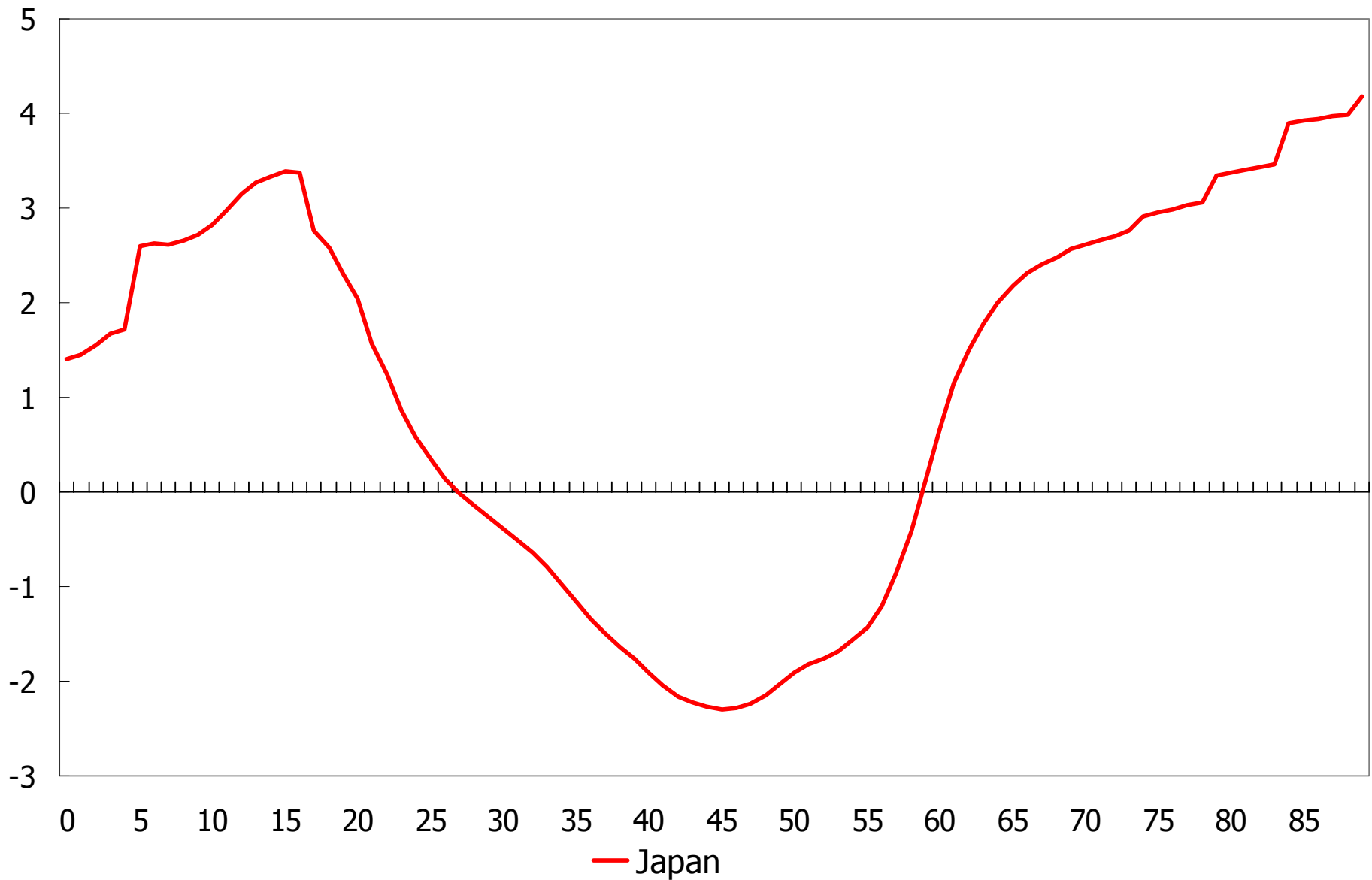
**Pension benefits**

**Enrollment rates in tertiary education**

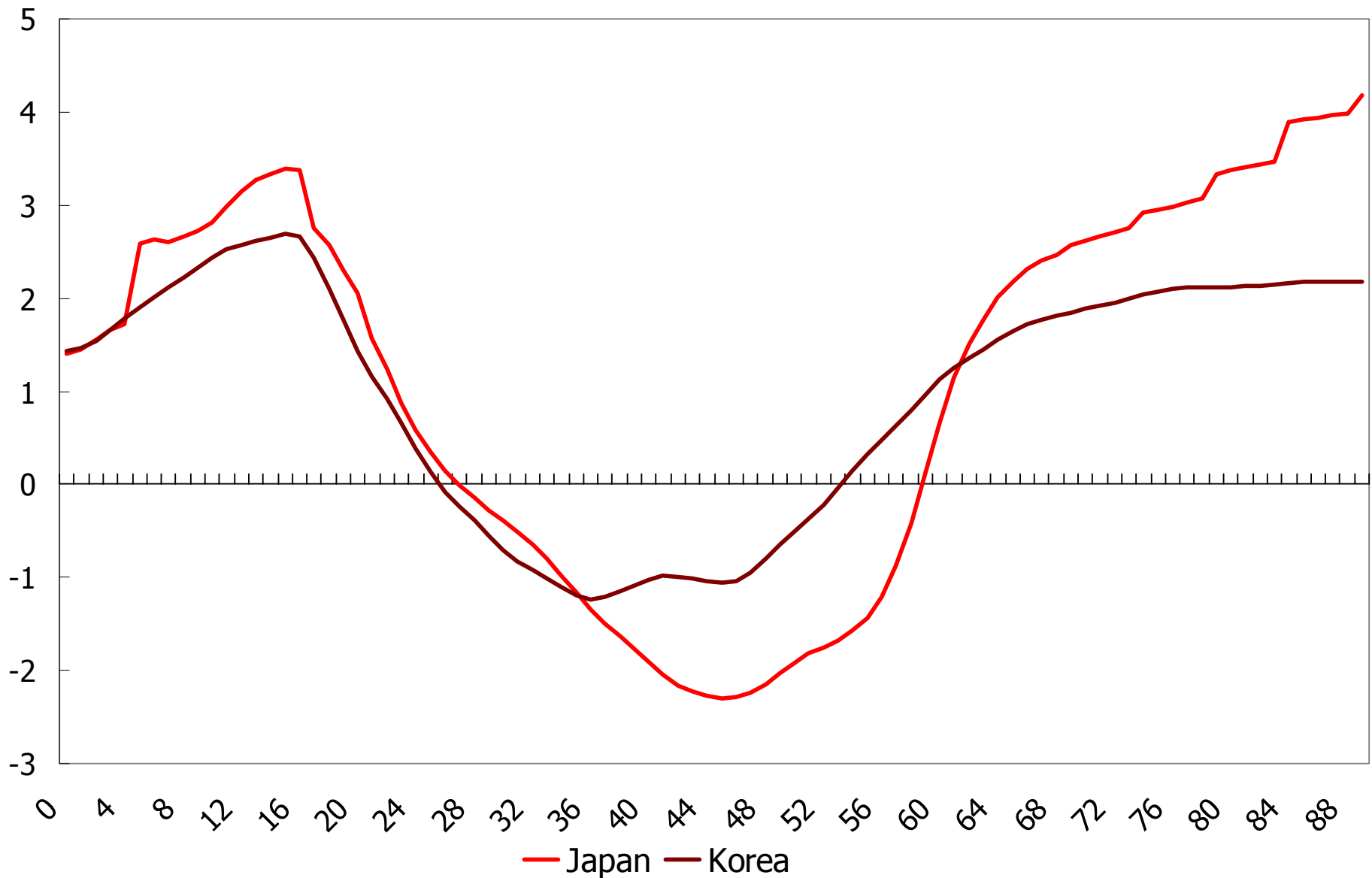
**Parasite singles**

**Freeters and Neets**

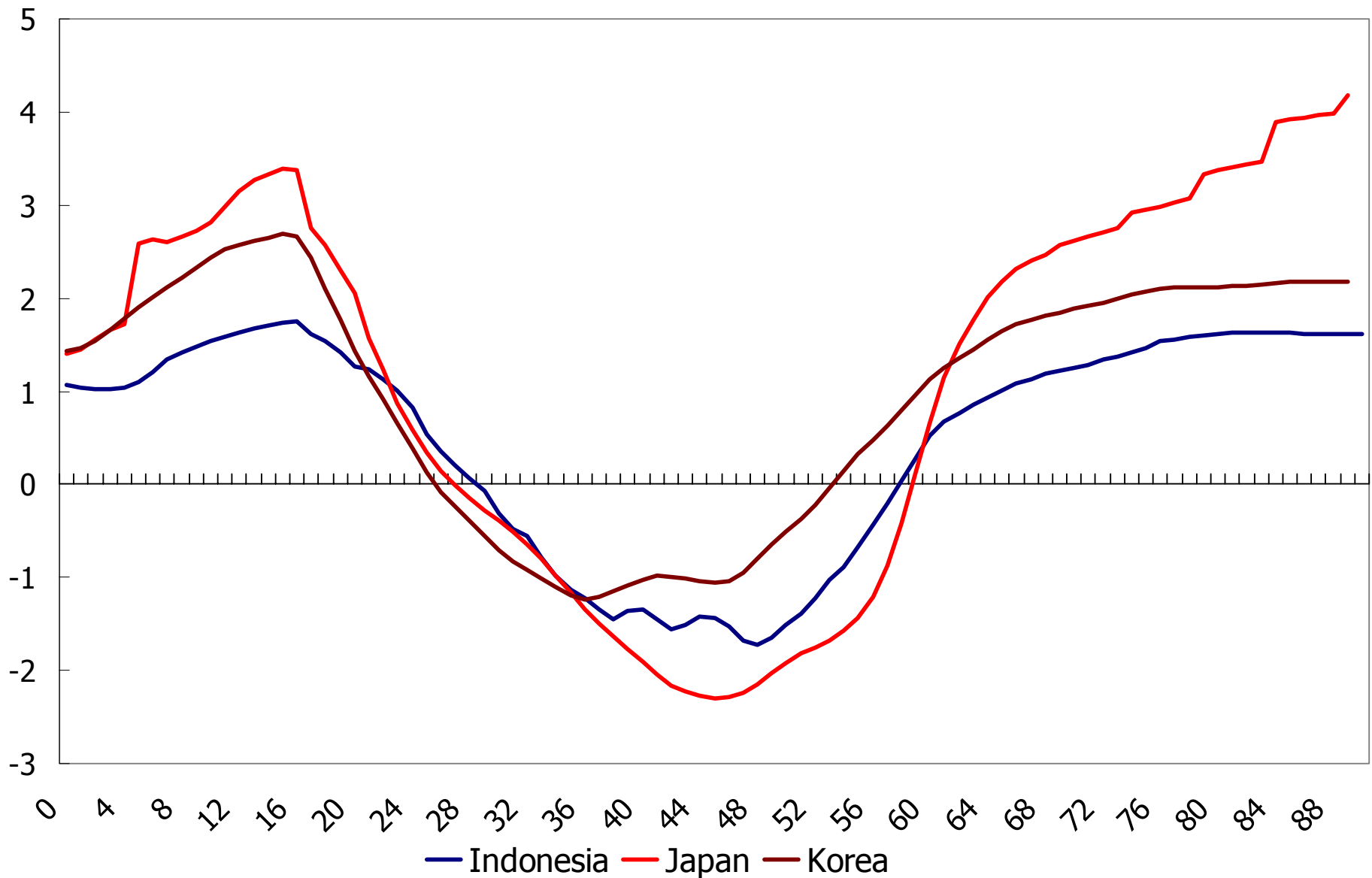
# Per Capita Lifecycle Deficits for Selected Asian Countries: Those Aged 30-40 = 1



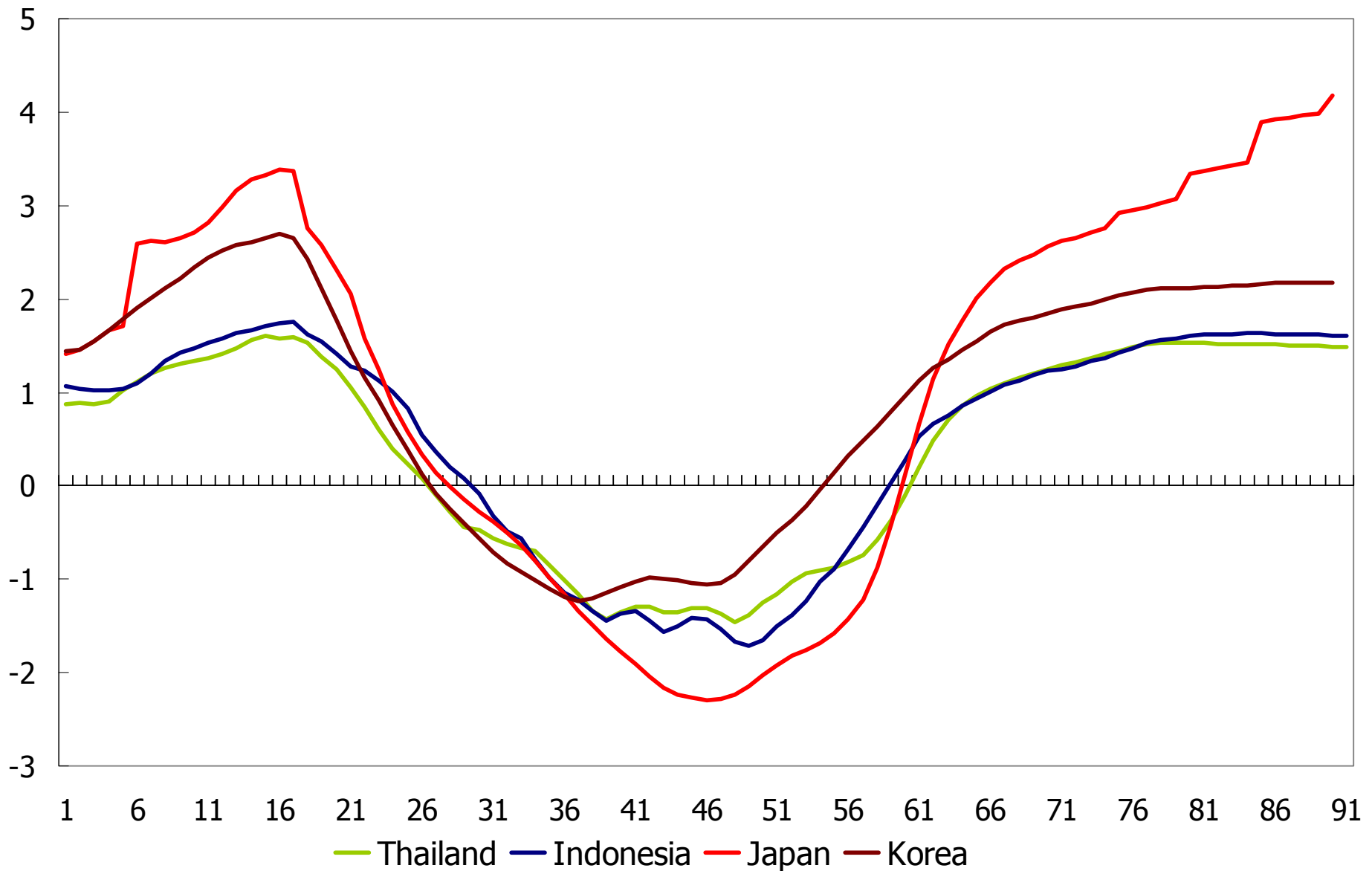
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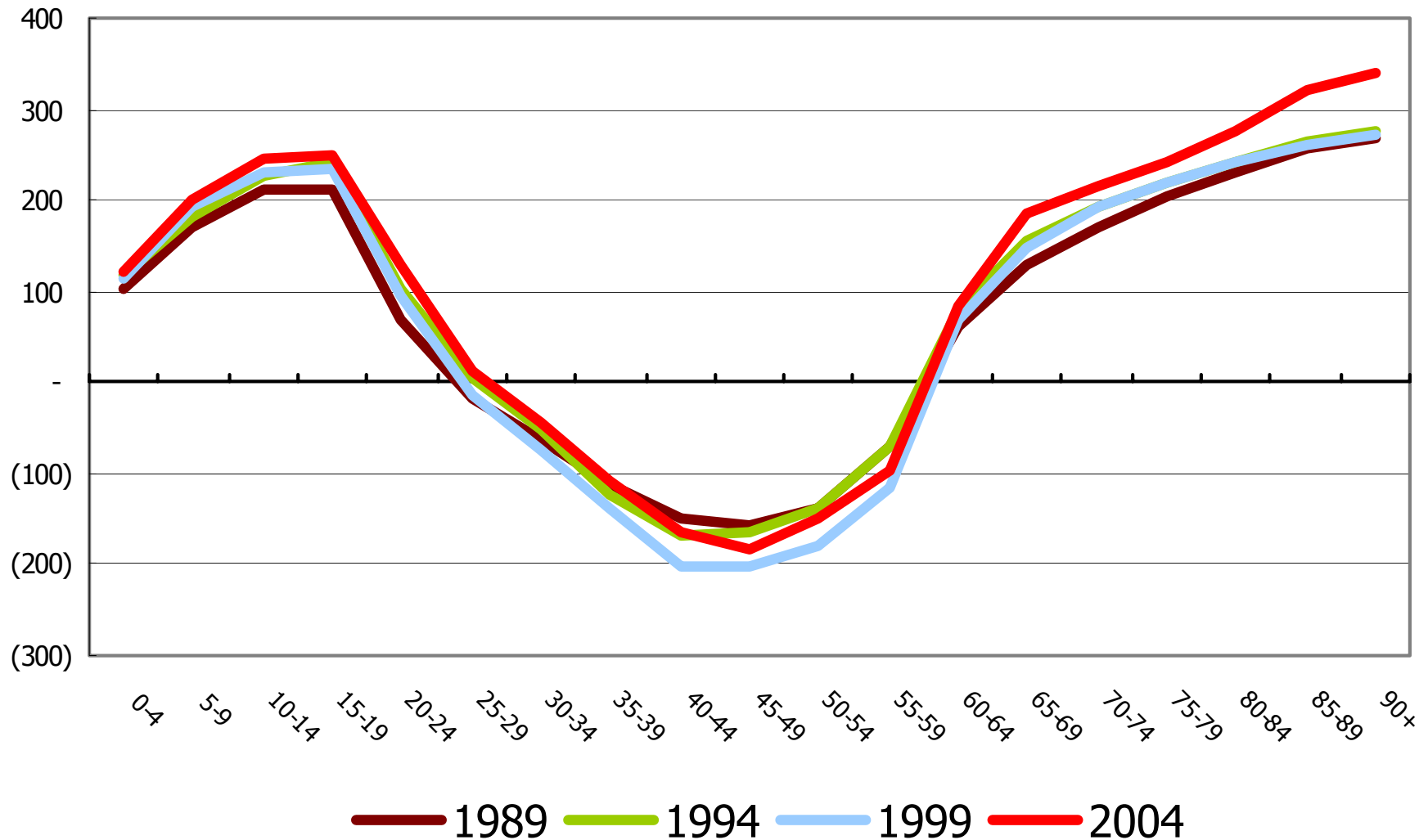
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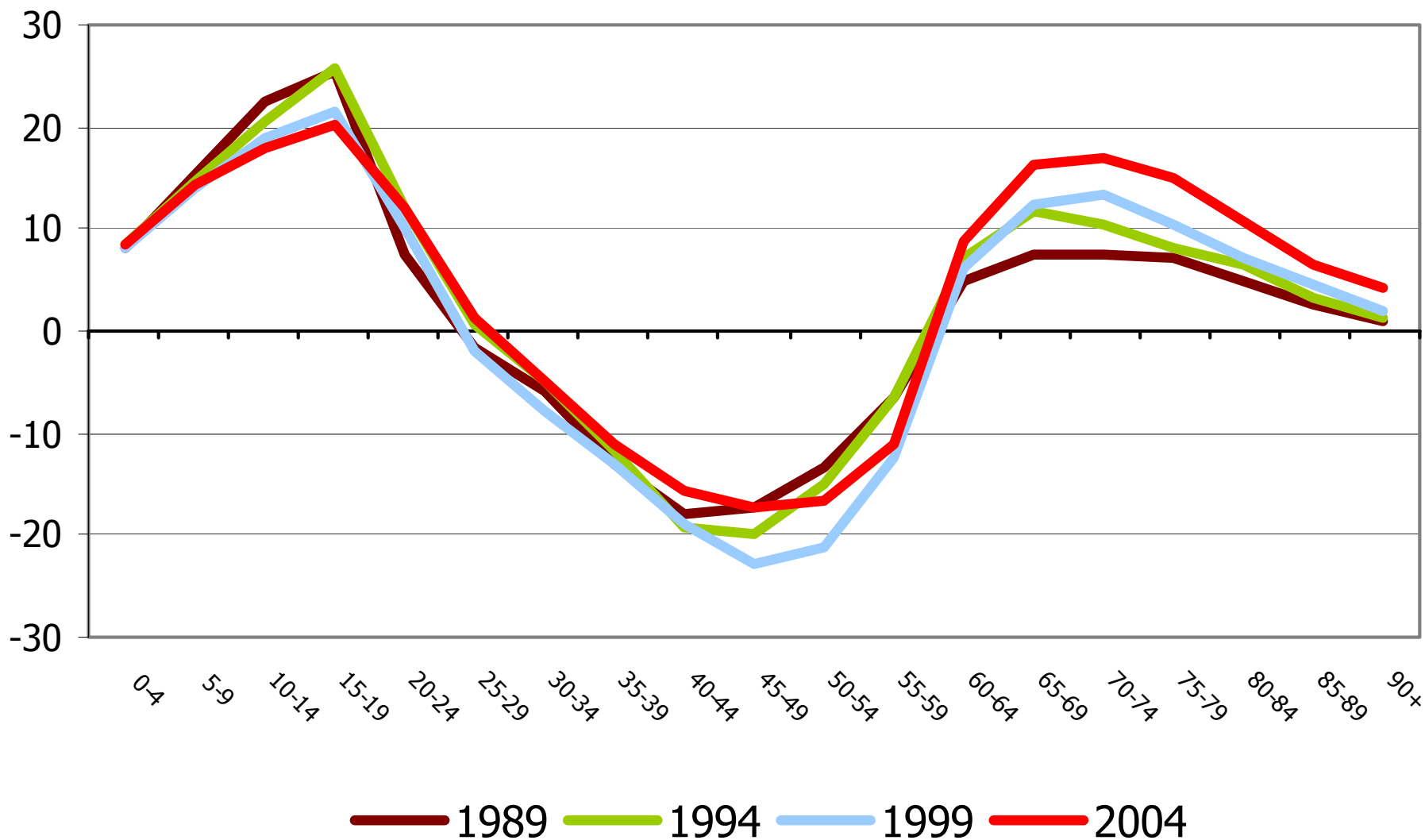
# Per Capita Lifecycle Deficits for Selected Asian Countries: Those Aged 30-40 = 1



# Per Capita Lifecycle Deficits in Japan, 1989, 1994, 1999, and 2004, Thousand Yen



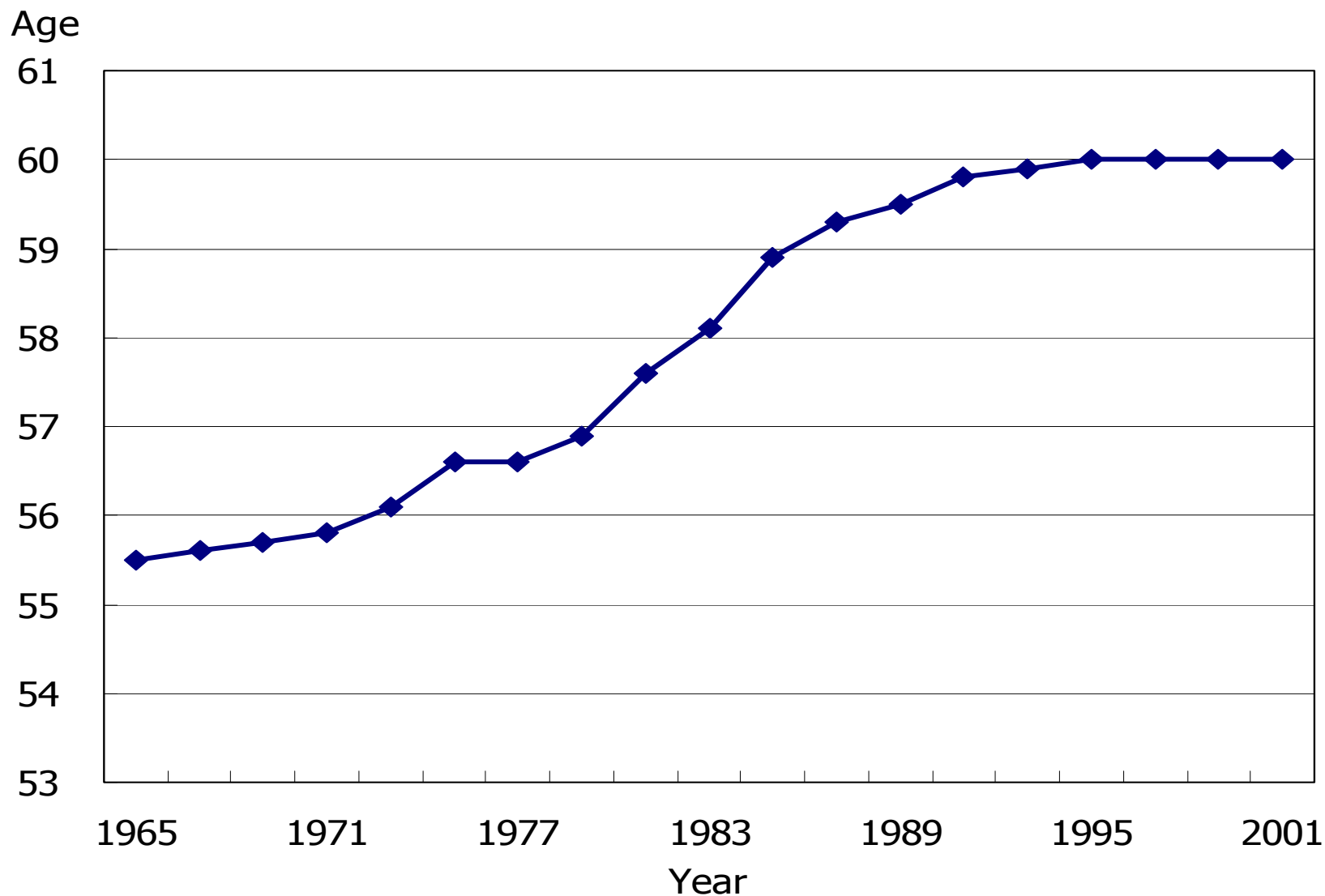
# Population-weighted Lifecycle Deficits in Japan, 1989, 1994, 1999, and 2004, Trillion Yen



# Crossing Ages in Japan and Selected Asian Countries

| Country           | Crossing ages for consumption and labor income $Y(x) > C(x)$ |           |
|-------------------|--|-----------|
|                   | Younger Age  | Older Age |
| Japan (1989)      | 25   | 59        |
| Japan (1994)      | 26   | 59        |
| Japan (1999)      | 27   | 59        |
| Japan (2004)      | 28   | 59        |
| South Korea, 2000 | 27   | 54        |
| Thailand, 1998    | 26   | 59        |
| India, 2000       | 29   | 59        |
| Indonesia, 1996   | 29   | 57        |
| Philippines, 1999 | 26   | 56        |

# Average age of mandatory retirement in large firms



# Public Consumption Allocation to the Youth and Elderly (%) in Selected Asian Countries

| Country             | Youth (< 20) | Elderly (65+) |
|---------------------|--------------|---------------|
| Japan, 2004         | 28           | 29            |
| South Korea, 2000   | 38           | 7.4           |
| Thailand, 1998      | 51           | 4.4           |
| India, 2000         | 50           | 6.1           |
| Indonesia, 1996     | 50           | 3.8           |
| Philippines, 1999   | 60           | 2.9           |
| United States, 2000 | 29           | 42            |

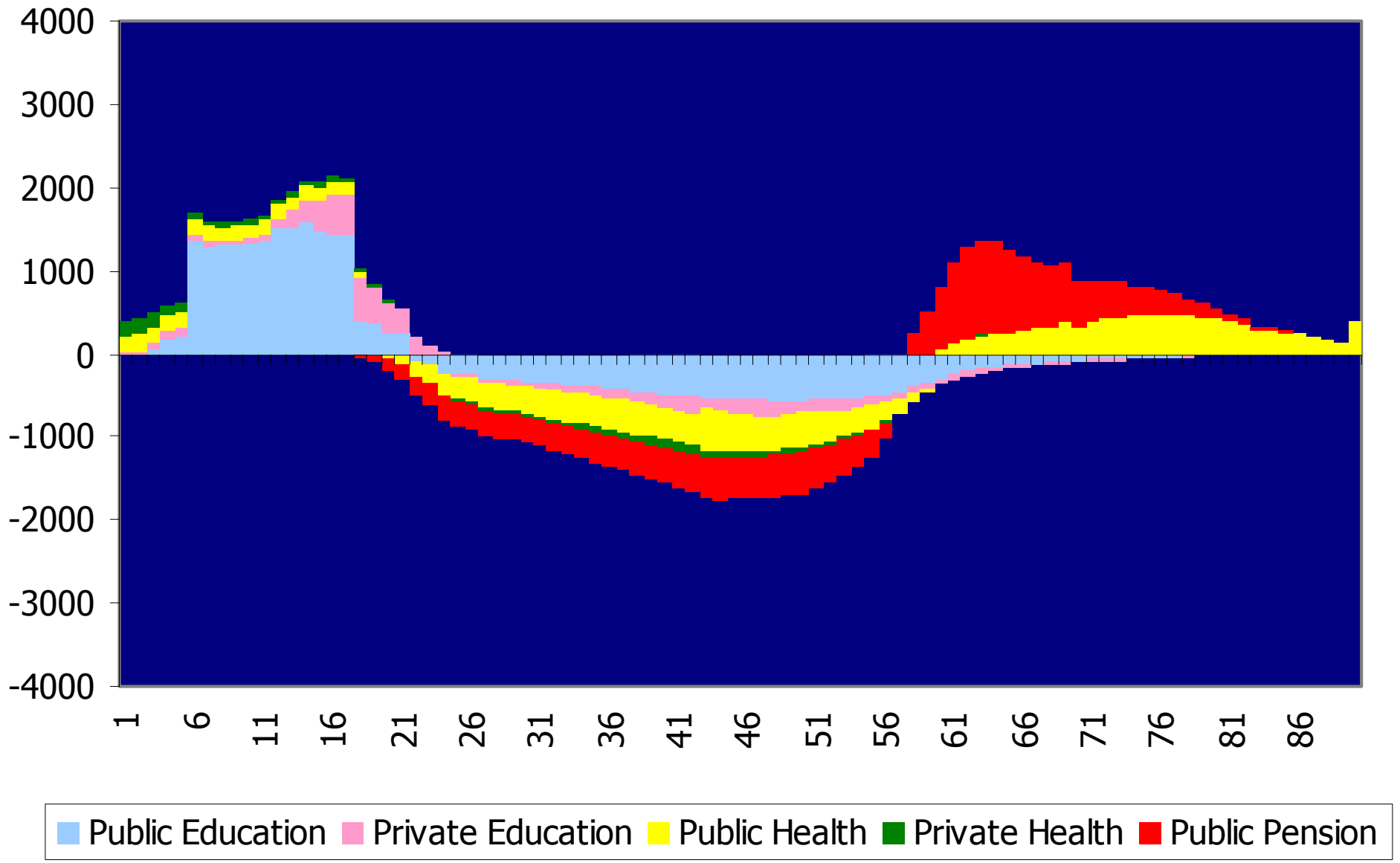
# Average Age of Earnings and Current Consumption in Selected Asian Countries

| Country             | Consumption | Labor Income |
|---------------------|-------------|--------------|
| Japan, 2004         | 47.3        | 46.0         |
| South Korea, 2000   | 33.8        | 38.9         |
| Thailand, 1998      | 31.9        | 39.1         |
| India, 2000         | 31.1        | 40.1         |
| Indonesia, 1996     | 28.9        | 37.9         |
| Philippines, 1999   | 27.6        | 36.9         |
| United States, 2000 | 42.0        | 43.0         |

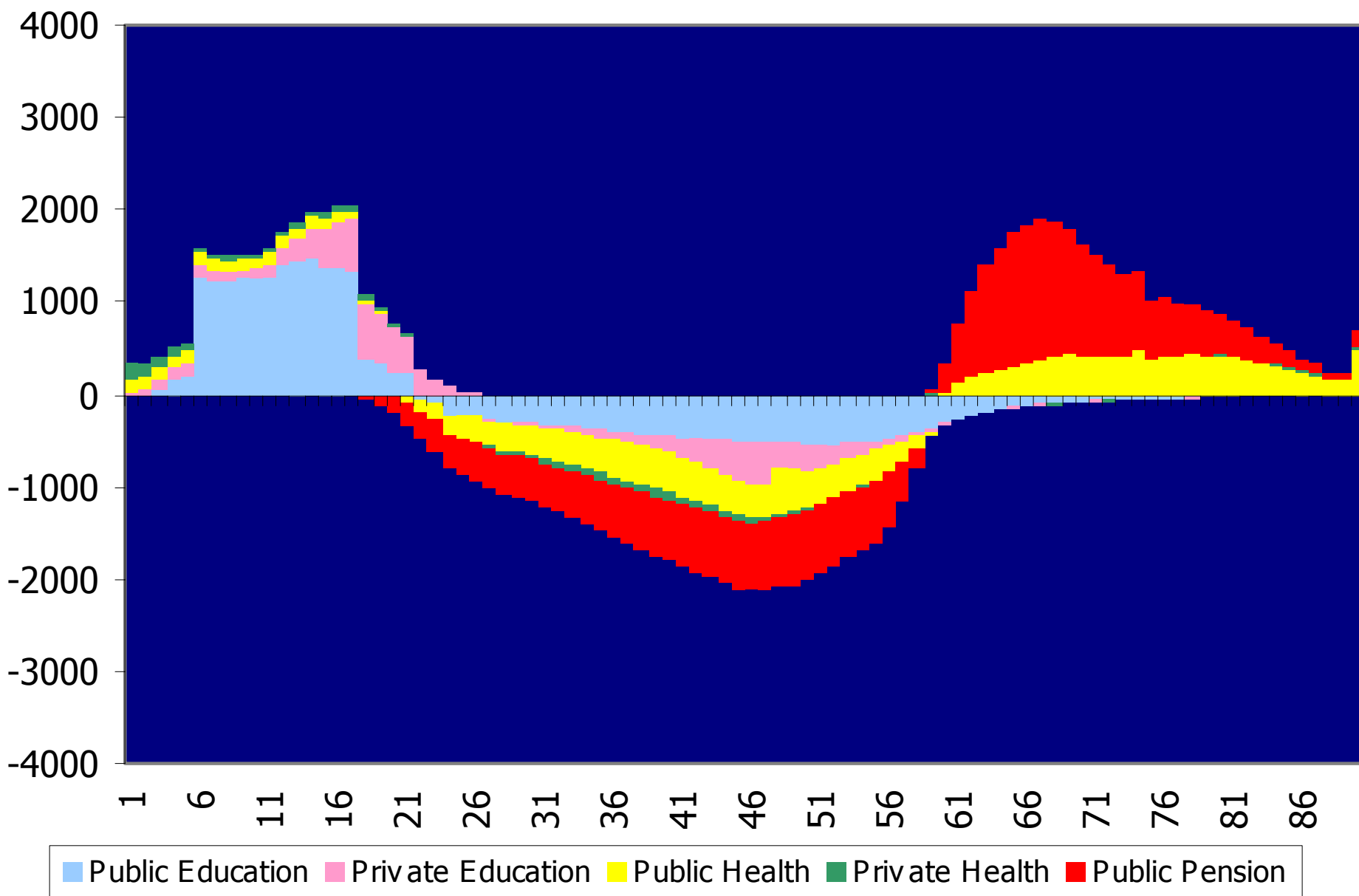
# Ratio of Transfers Received by Elderly/Children Based upon NTA

|   |            | 1989 | 1994 | 1999 | 2004 |
|---|------------|------|------|------|------|
| Public transfers on health,<br>education, and pension                                   | Aggregate  | 0.96 | 1.55 | 2.07 | 2.92 |
|   | Per capita | 1.62 | 1.95 | 2.01 | 2.27 |
| Total transfers, both<br>inter-vivos and public on<br>health, education, and<br>pension | Aggregate  | 0.7  | 1.16 | 1.55 | 2.23 |
|   | Per capita | 1.18 | 1.46 | 1.51 | 1.73 |

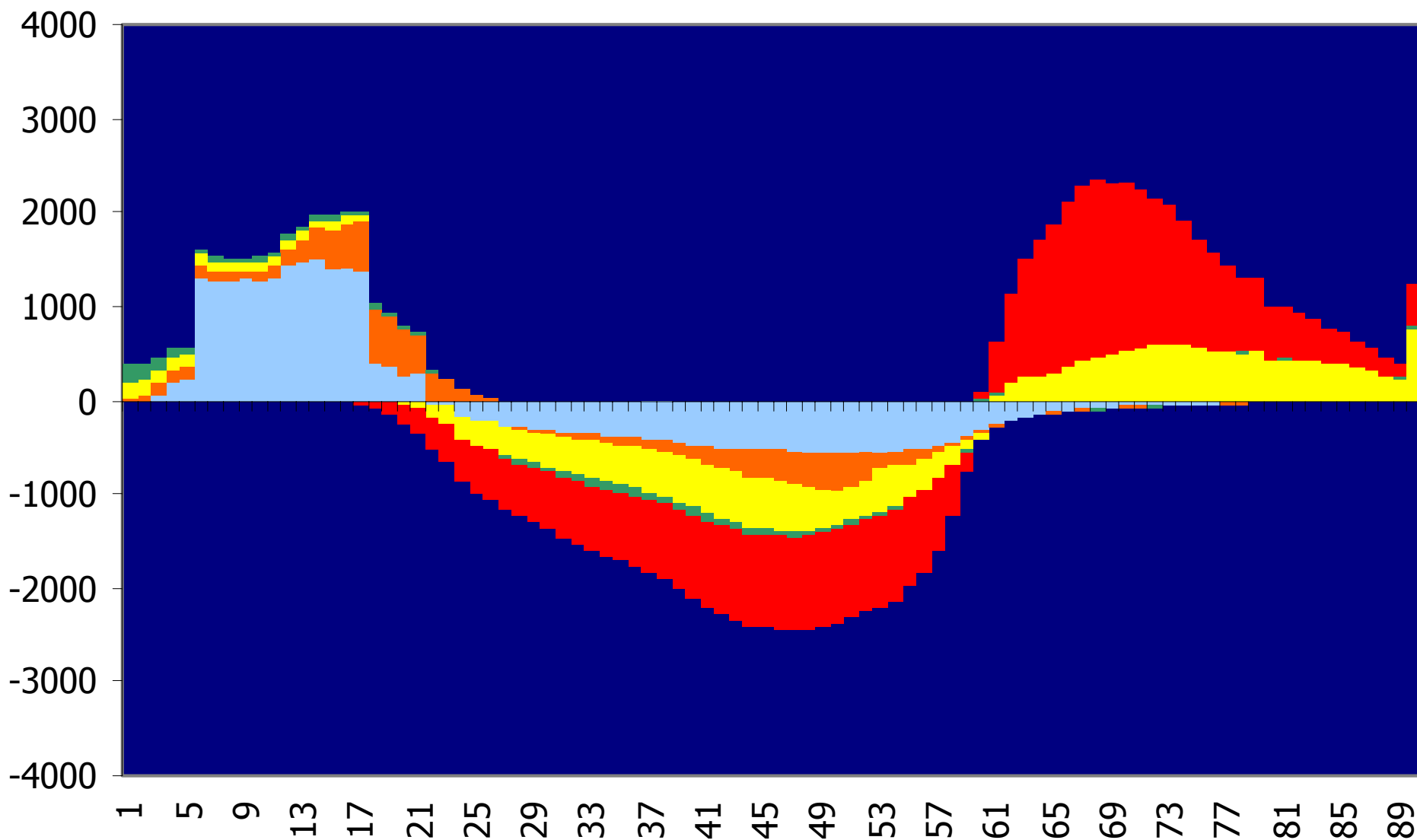
# Net Transfer Flow in Japan, by Sector, Trillion Yen, 1989



# Net Transfer Flow in Japan, by Sector, Trillion Yen, 1994

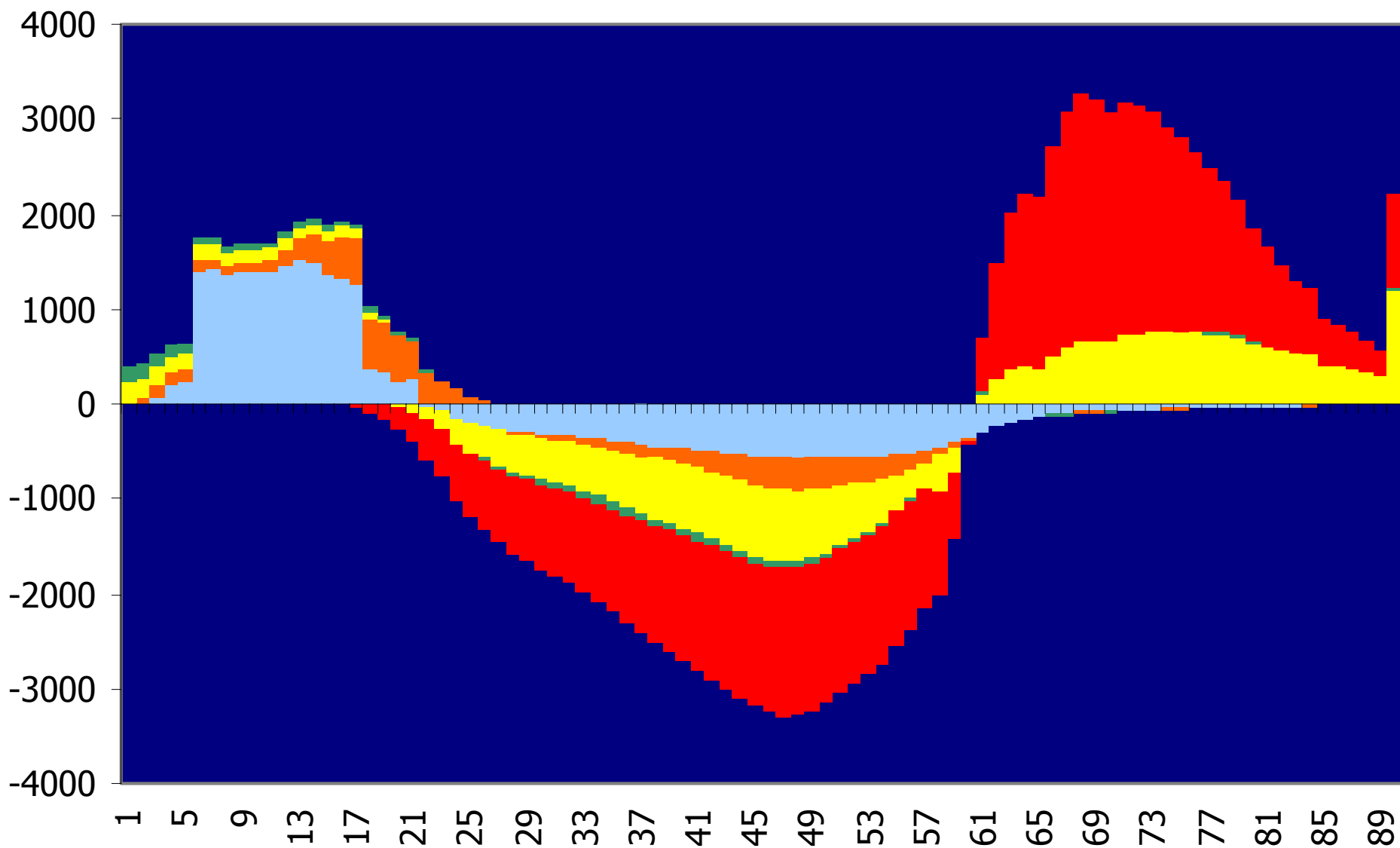


# Net Transfer Flow in Japan, by Sector, Trillion Yen, 1999



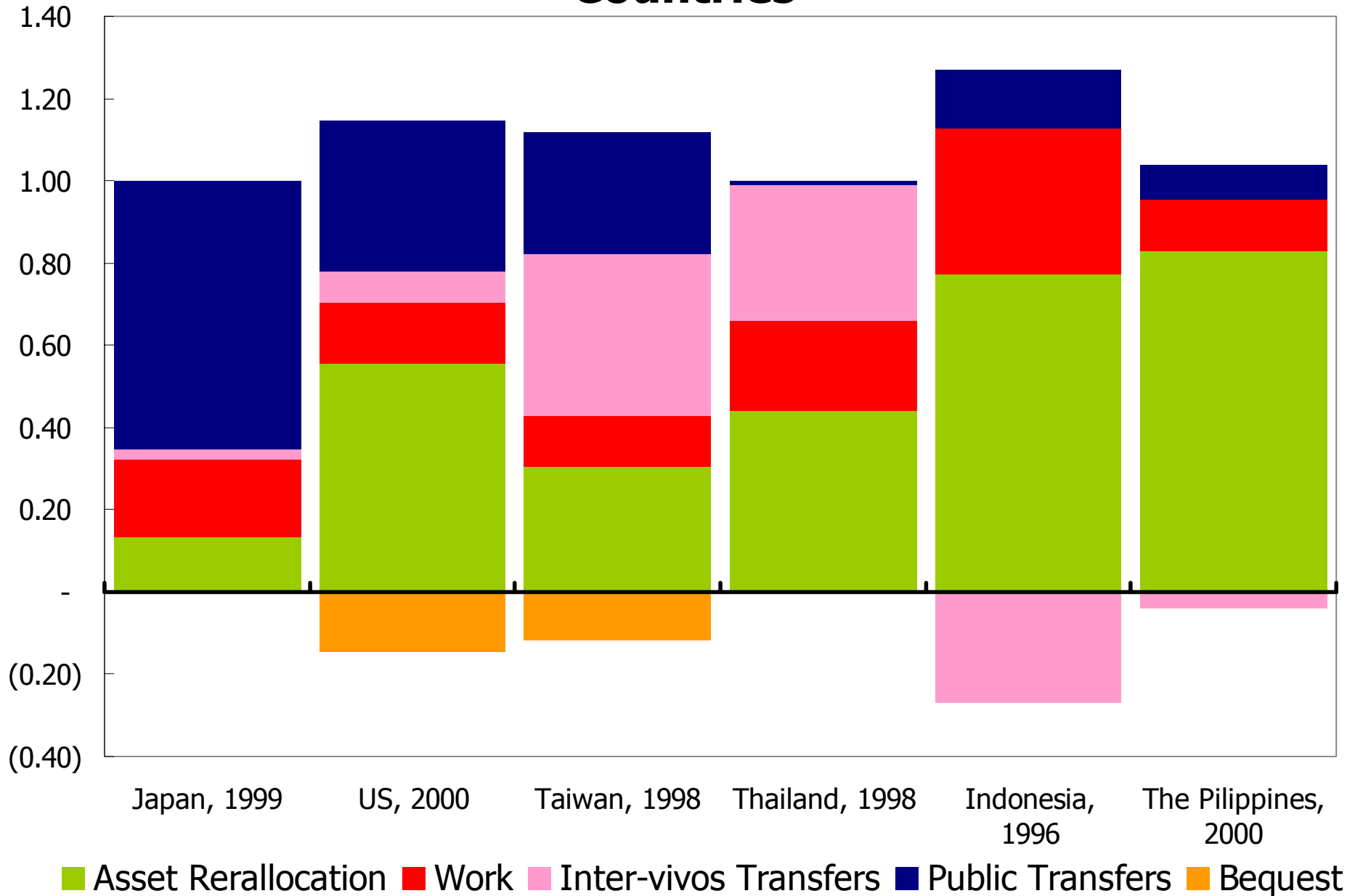
Public Education Private Education Public Health Private Health Public Pension

# Net Transfer Flow in Japan, by Sector, Trillion Yen, 2004

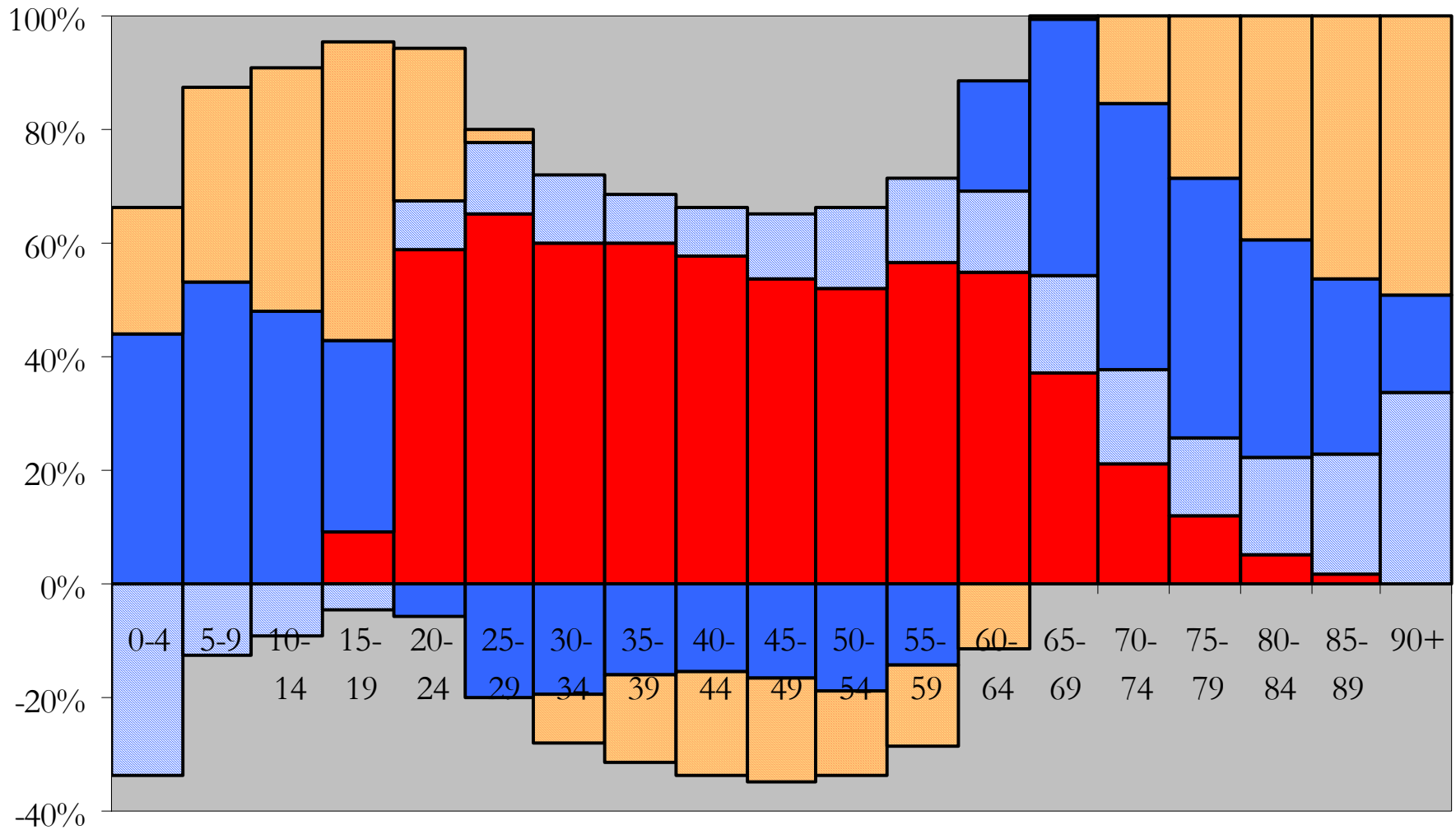


Public Education Private Education Public Health Private Health Public Pension

# Finance of Consumption among Those 65+ in Selected Countries

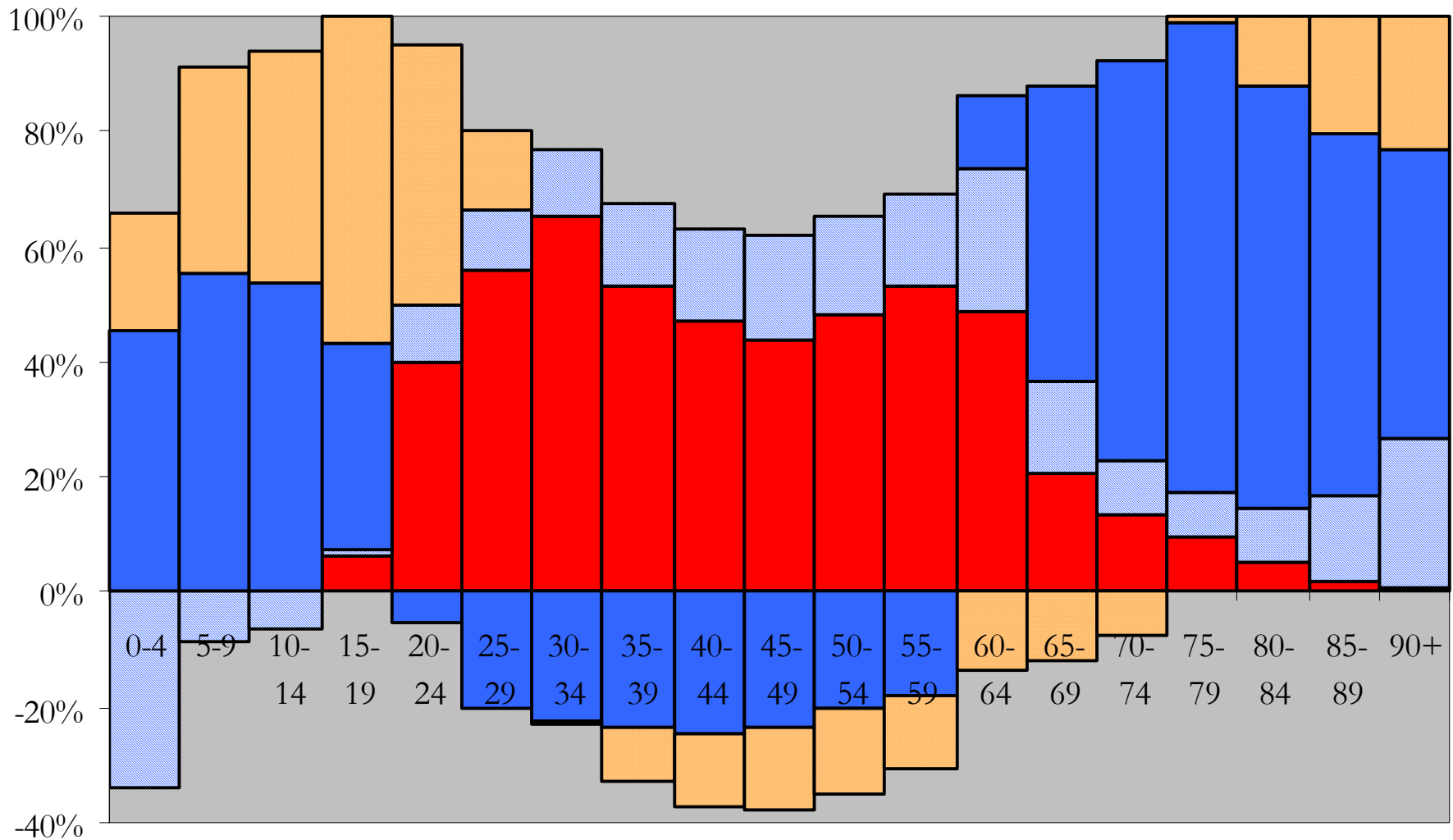


# Finance of Consumption in Japan, 1989



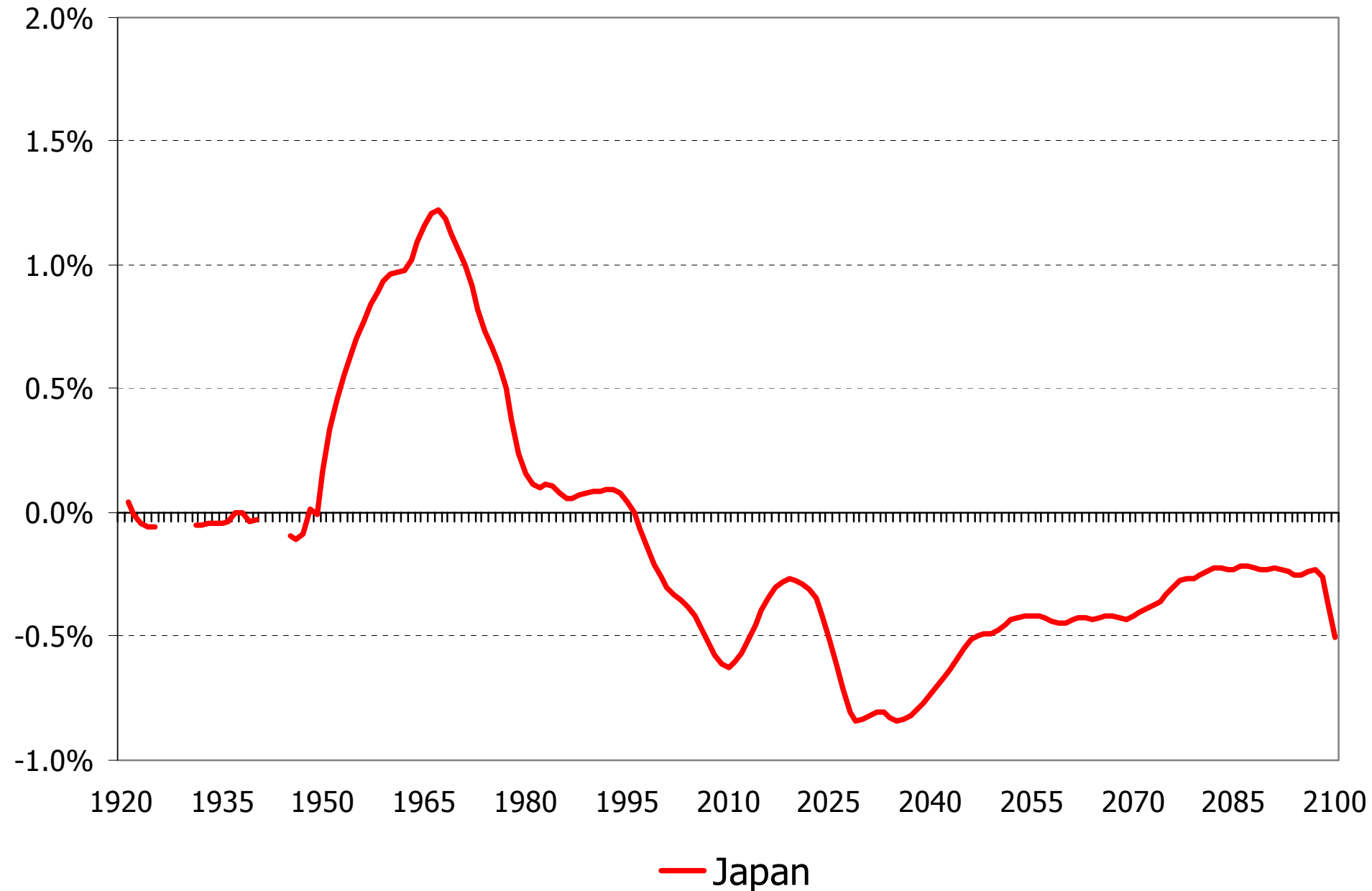
■ Labor Income 
 ■ Asset Reallocations 
 ■ Public Transfers 
 ■ Intervivos Transfers

# Finance of Consumption in Japan, 2004

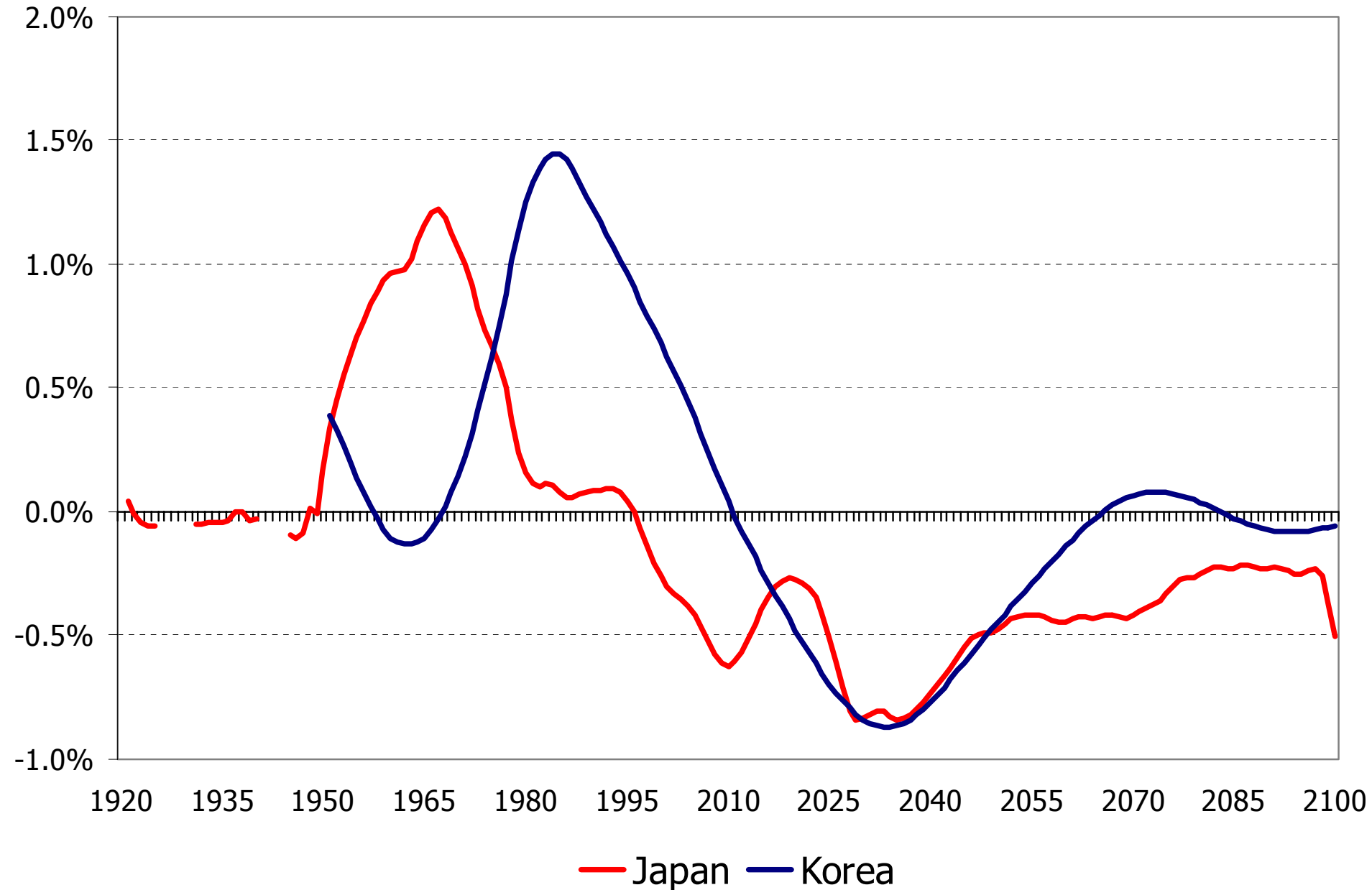


■ Labor Income 
 ■ Asset Reallocations 
 ■ Public Transfers 
 ■ Intervivos Transfers

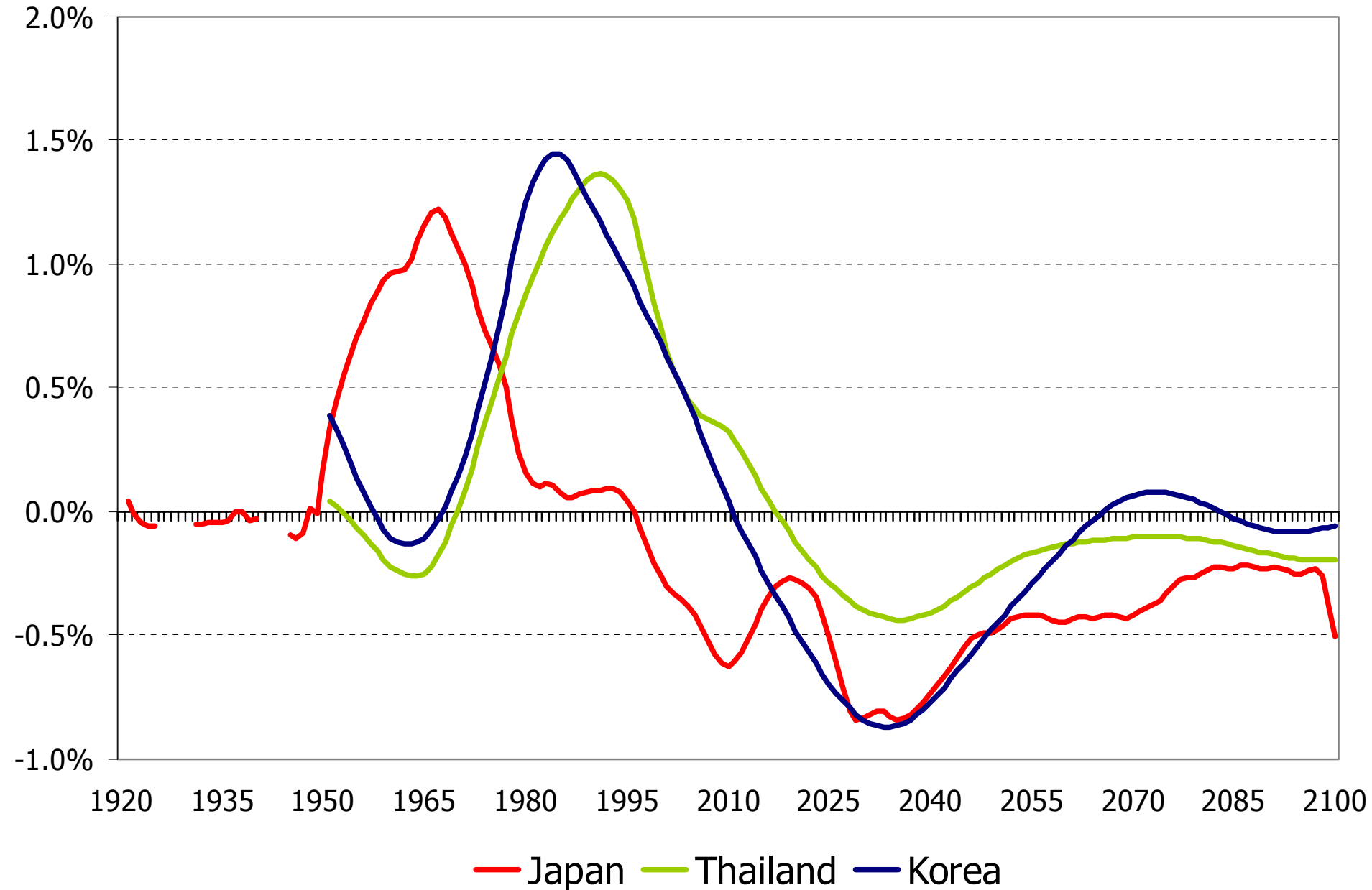
# First Dividend in Selected Asian Countries, 1920 - 2100



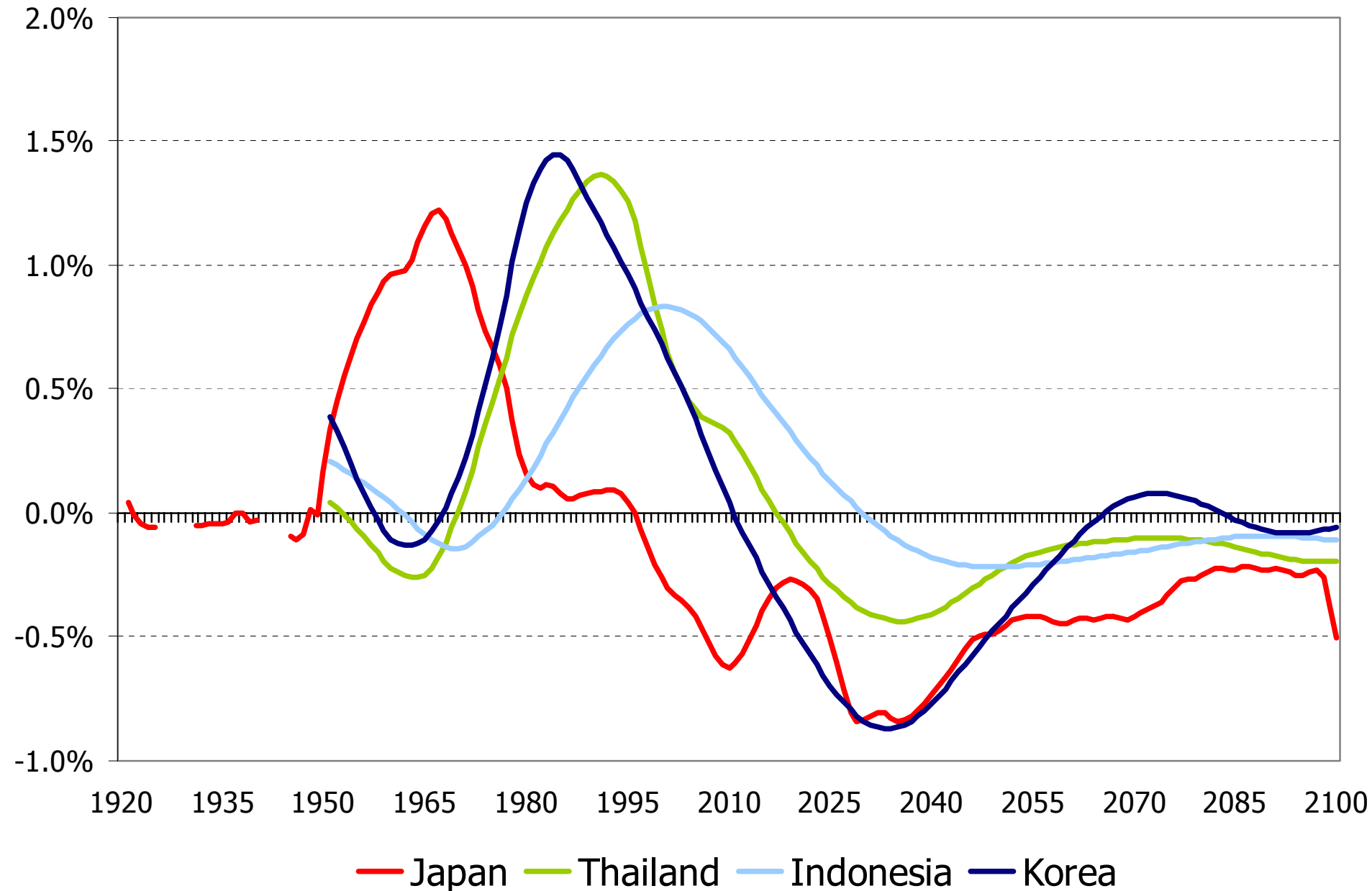
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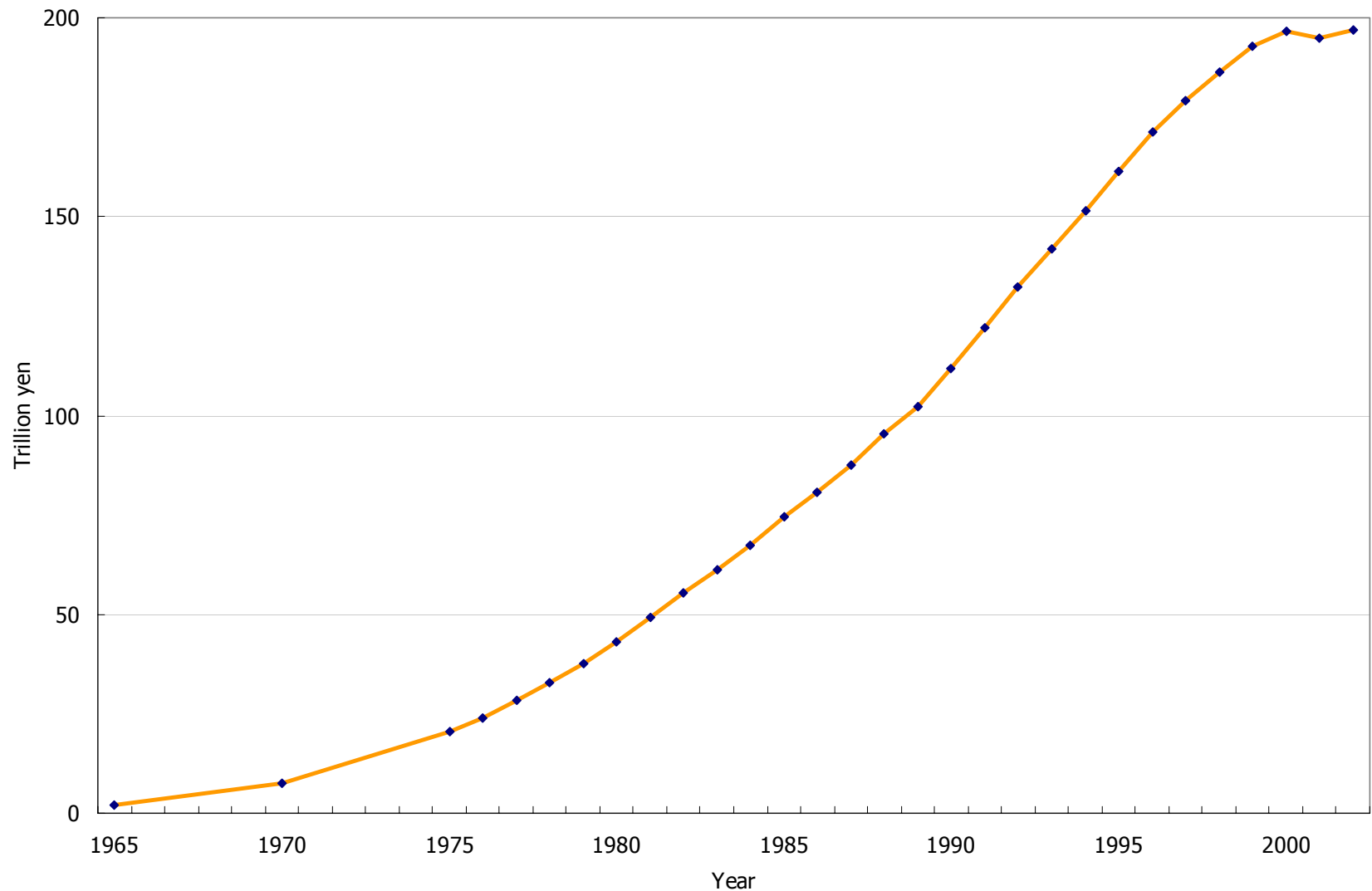
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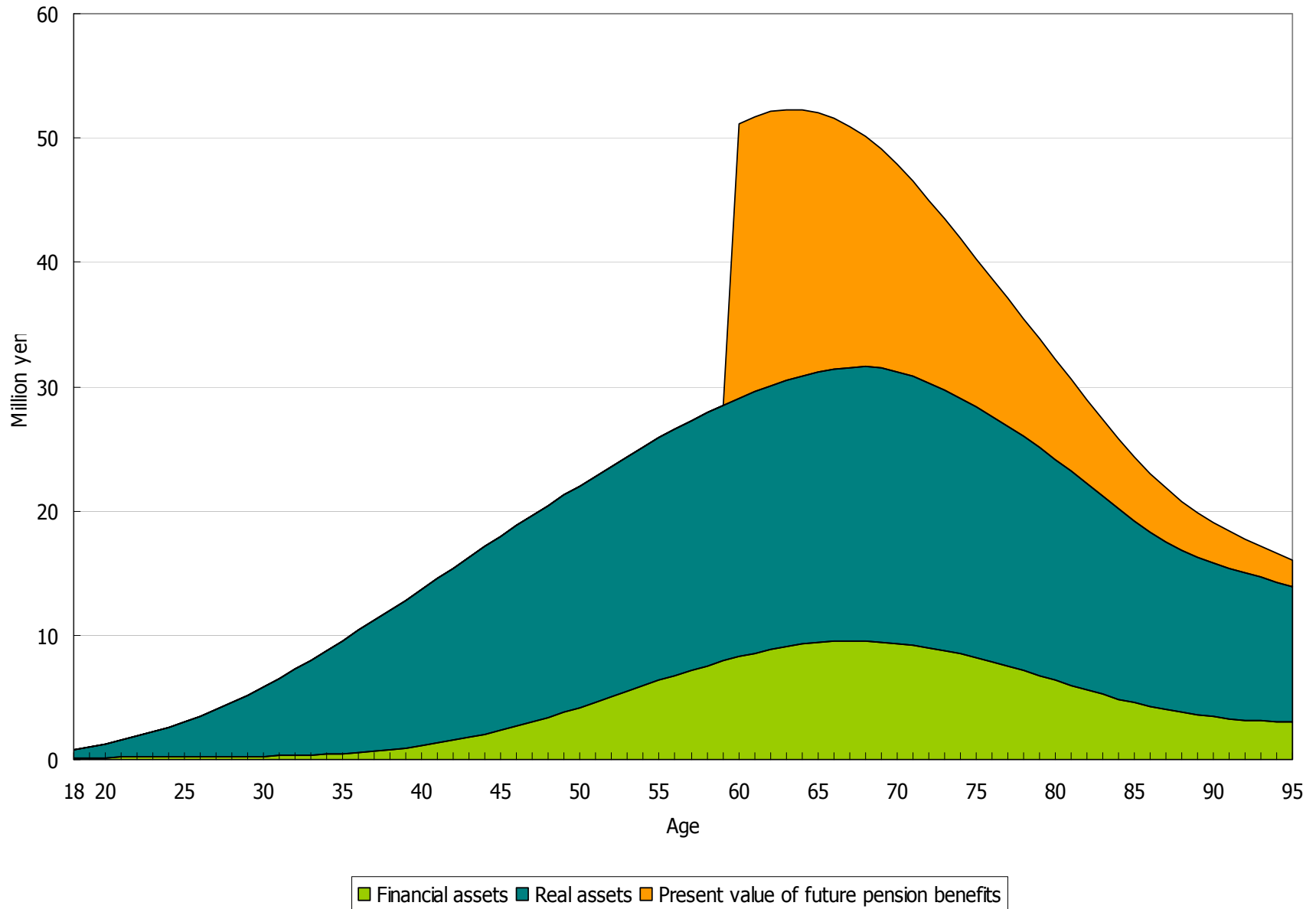


# Growth of reserved funds for all public pension schemes combined, 1965-2002

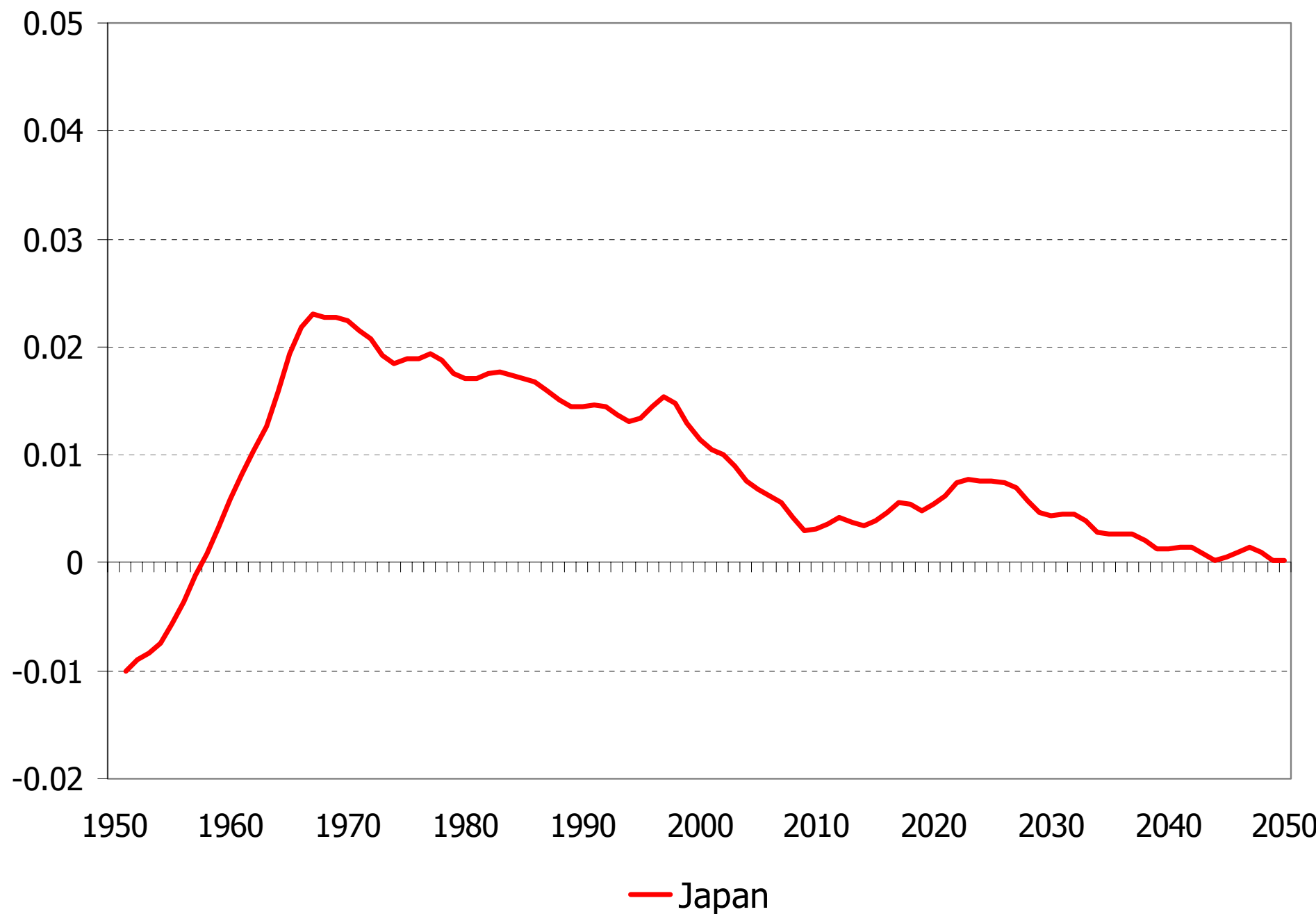


Source: Ministry of Health, Labour and Welfare, *Financial Report on the Public Pension System: Fiscal Year 2003, 2004*.

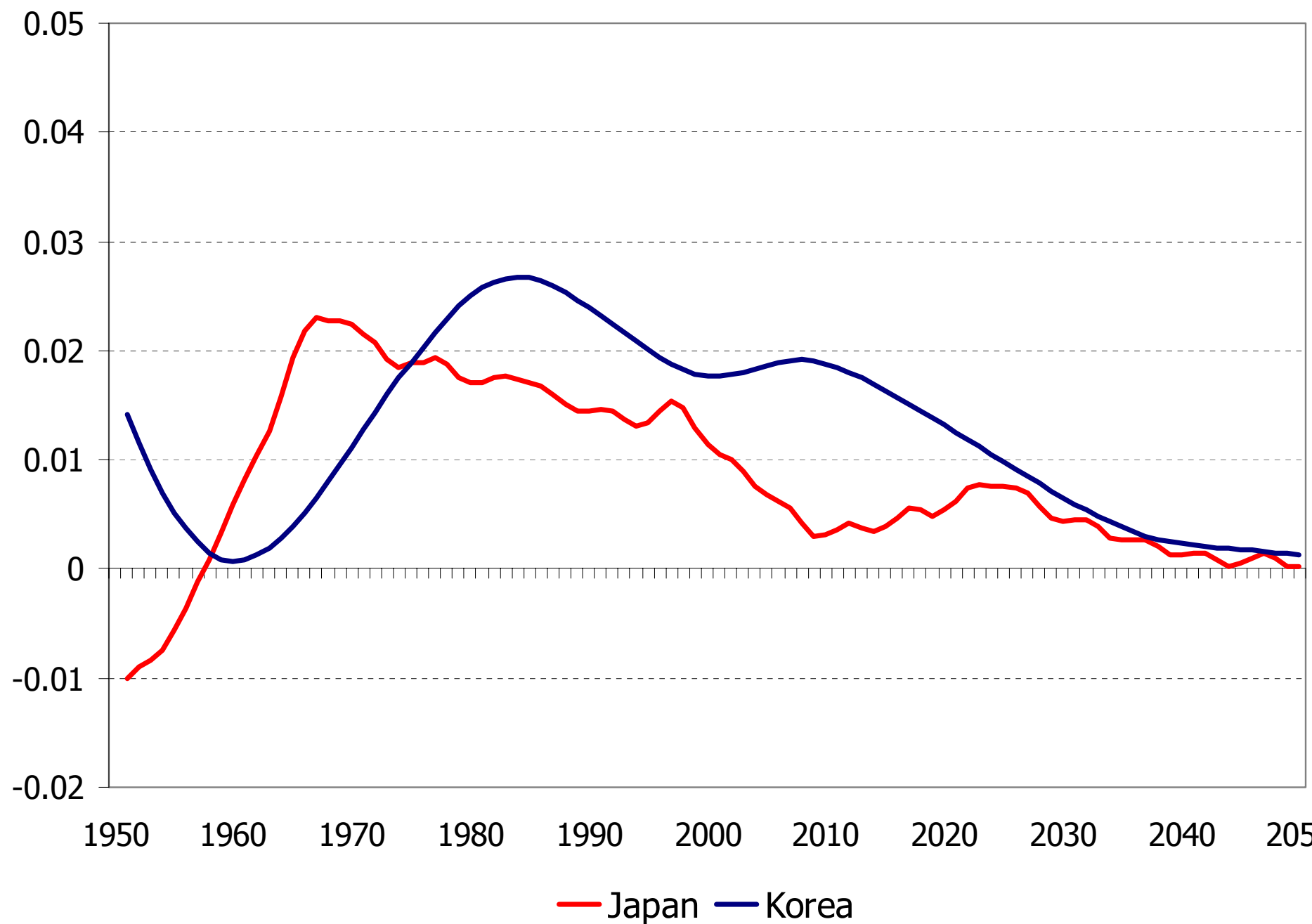
# Age profile of assets and pension wealth in Japan, 1999



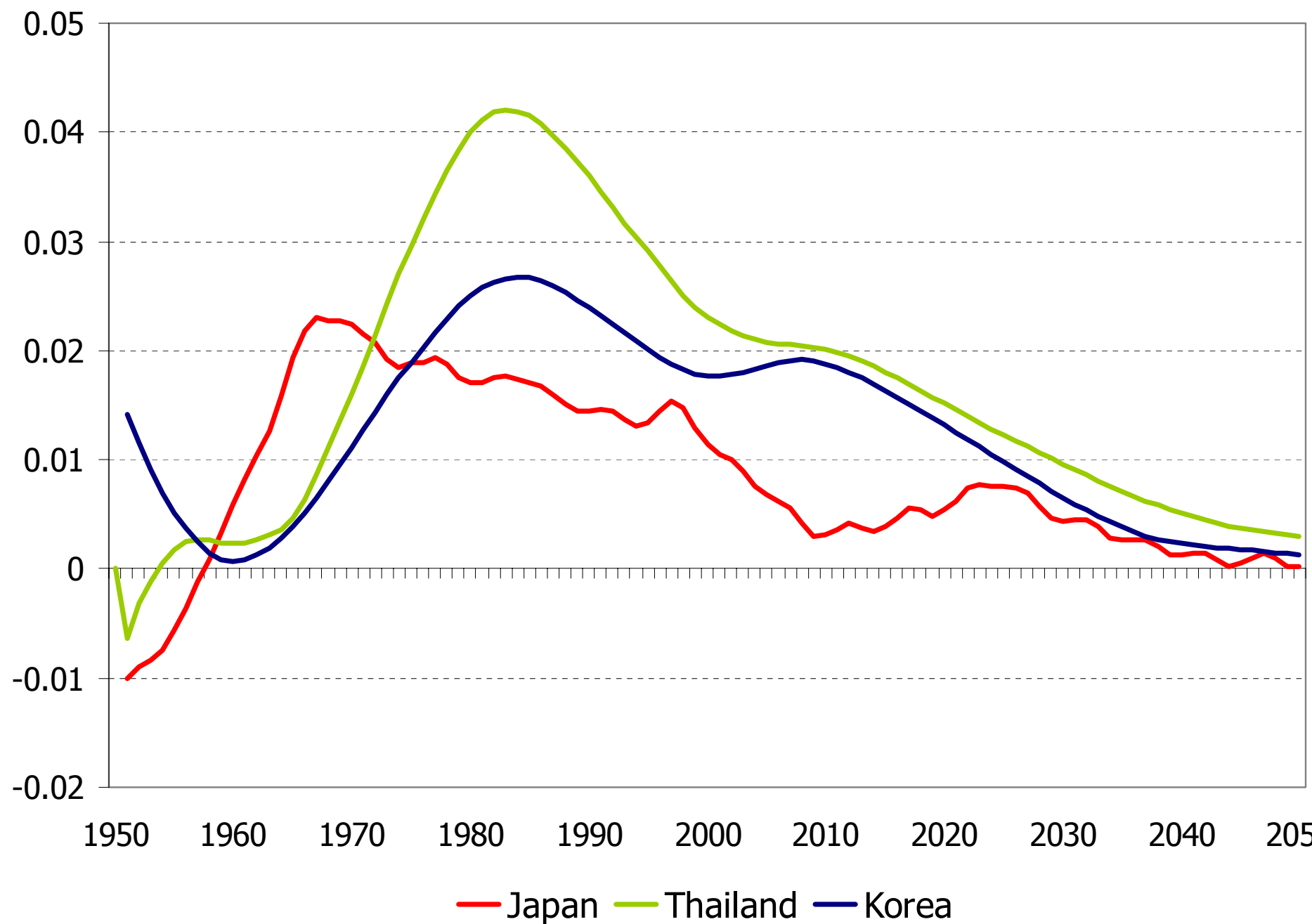
# Second Dividend of Selected Asian Countries, 1950 - 2050



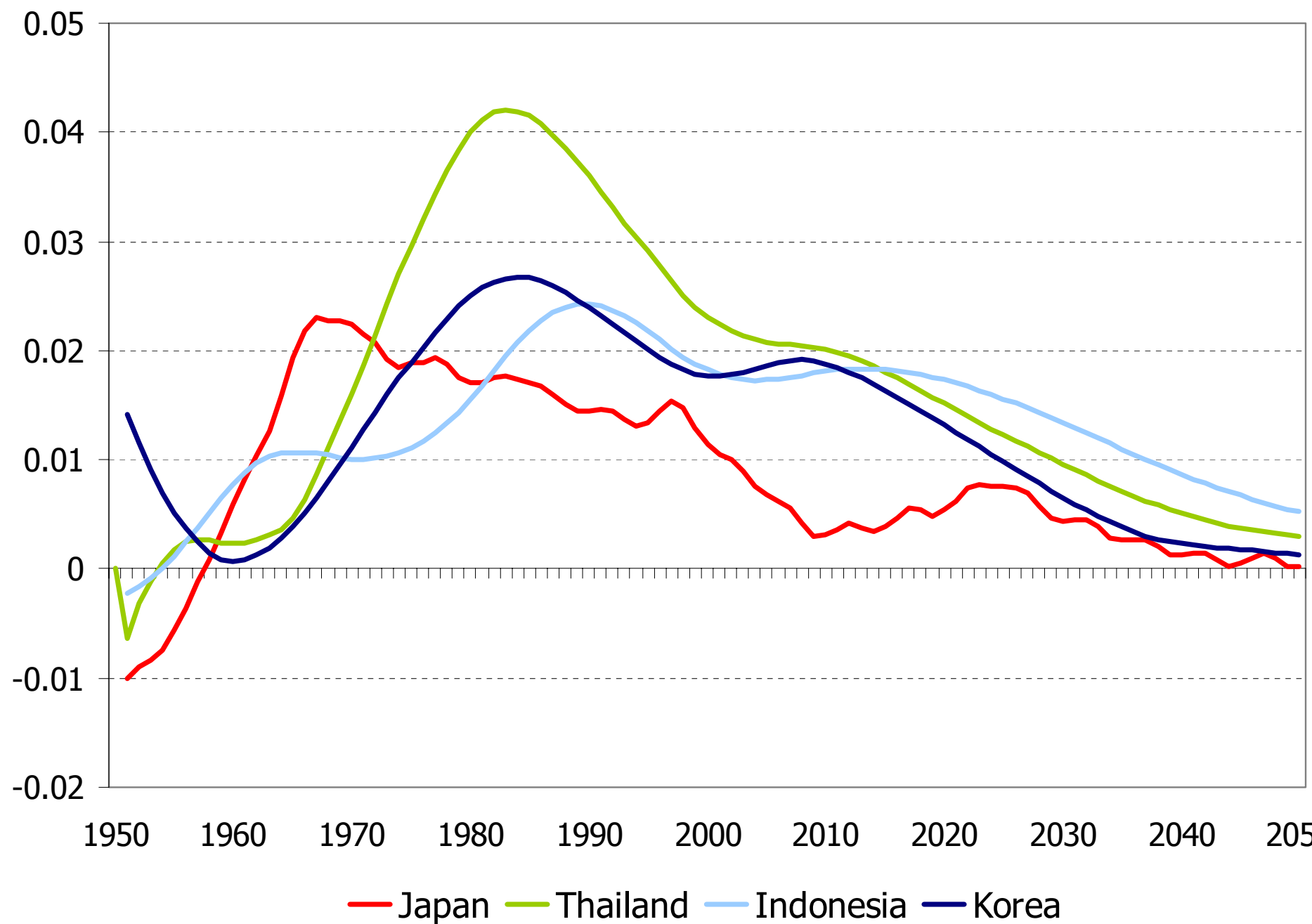
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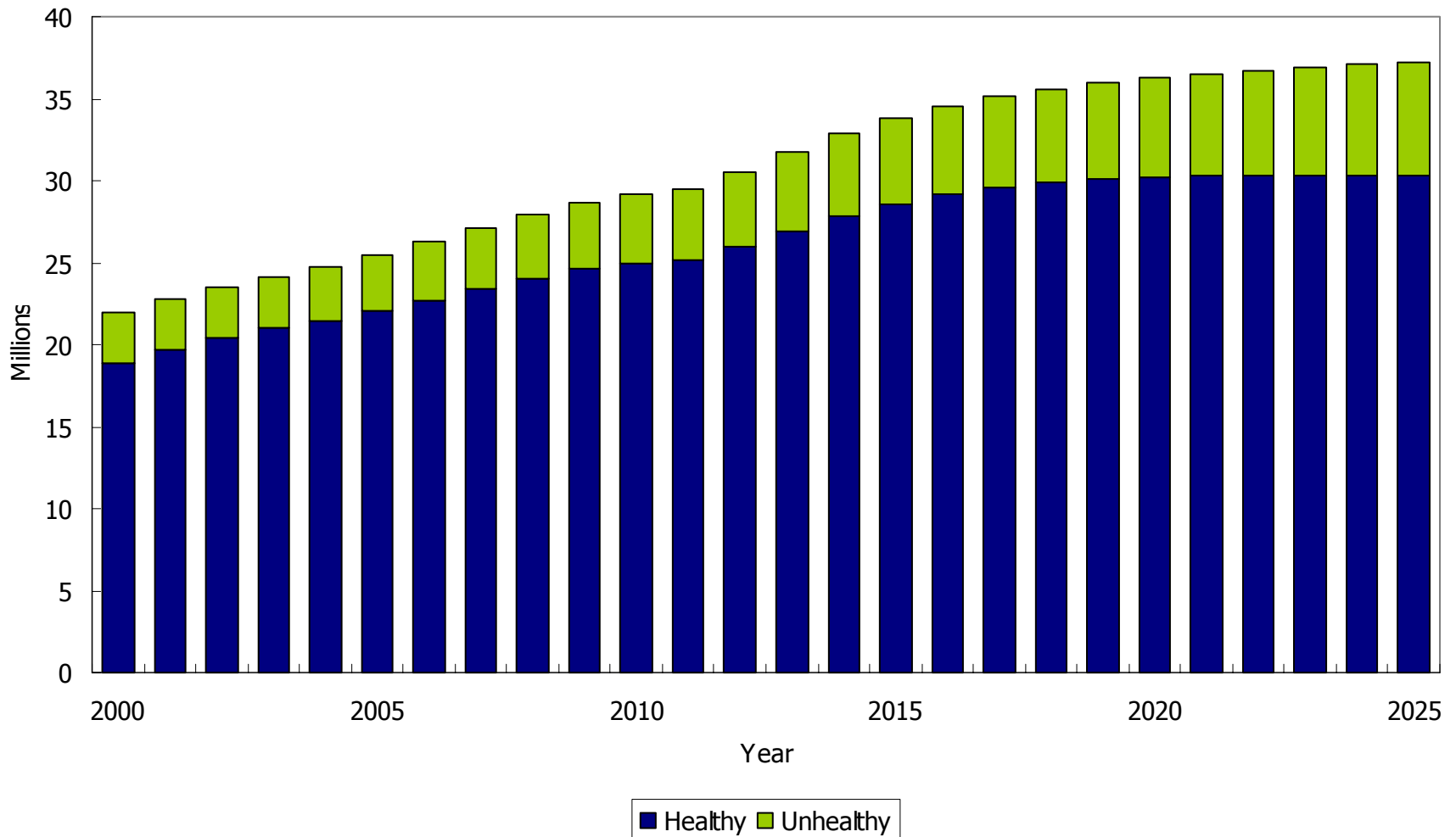


# Second Dividend of Selected Asian Countries, 1950 - 2050



# Projected elderly population by health status, Japan 2000-2025

(based on health status transition rates)



# **Two simulations**

**(1) All healthy  
persons work**

**(2) Retirement  
age from 60 to 65**

# Simulation exercises for alternative labor force participation among the elderly in Japan, 2005-2025

| NUPRI Model projection (Base run)             |              | Simulation 1         | Simulation 2         |
|---|--------------|----------------------|----------------------|
| <b>Potential GDP (Trillion yen)</b>           |              |                      |                      |
| <b>2005</b>                                   | <b>561.2</b> | <b>653.8 (16.5%)</b> | <b>576.4 (2.7%)</b>  |
| <b>2015</b>                                   | <b>600.6</b> | <b>747.2 (24.4%)</b> | <b>661.8 (10.2%)</b> |
| <b>2025</b>                                   | <b>619.1</b> | <b>791.3 (27.8%)</b> | <b>692.3 (11.8%)</b> |
| <b>Potential GDP per capita (Million yen)</b> |              |                      |                      |
| <b>2005</b>                                   | <b>4.4</b>   | <b>5.1 (16.5%)</b>   | <b>4.5 (2.9%)</b>    |
| <b>2015</b>                                   | <b>4.8</b>   | <b>5.9 (23.9%)</b>   | <b>5.3 (10.8%)</b>   |
| <b>2025</b>                                   | <b>5.1</b>   | <b>6.5 (26.7%)</b>   | <b>5.7 (12.3%)</b>   |
| <b>Labor force (1000 persons)</b>             |              |                      |                      |
| <b>2005</b>                                   | <b>66958</b> | <b>86803 (29.6%)</b> | <b>70386 (5.1%)</b>  |
| <b>2015</b>                                   | <b>62827</b> | <b>89107 (41.8%)</b> | <b>73938 (17.7%)</b> |
| <b>2025</b>                                   | <b>59172</b> | <b>87880 (48.5%)</b> | <b>70921 (19.9%)</b> |

Simulation 1: We assume that the all healthy persons aged 65 and over will participate with labor force throughout the projection.

Simulation 2: We assume (1) that the labor force participation rates of those aged 60-64 are raised to those of 55 to 59 and (2) that the participation rates of those aged 65 and over are raised by 10 percentage points above the current rates.

**Future Japanese elderly  
persons**

**will be wealthy!**

**Future Japanese elderly  
persons**

**will be**

**not only wealthy but  
healthy!**

**Future Japanese elderly  
persons**

**will be**

**wealthier, healthier**

**and**

**cleverer!**

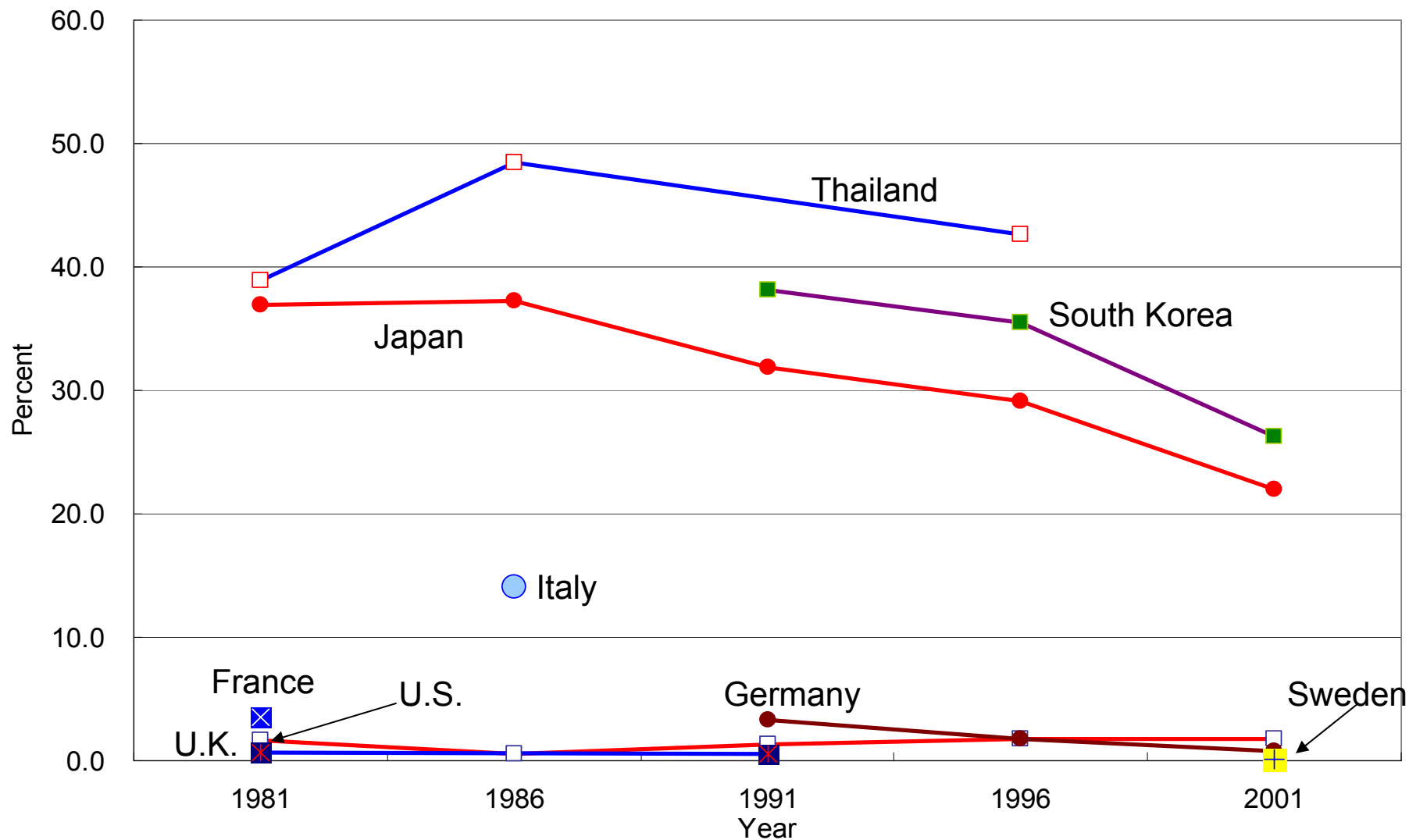
**Future Japanese elderly  
persons  
may save  
Japan!**

◆ **Even fertility may recover!!!**

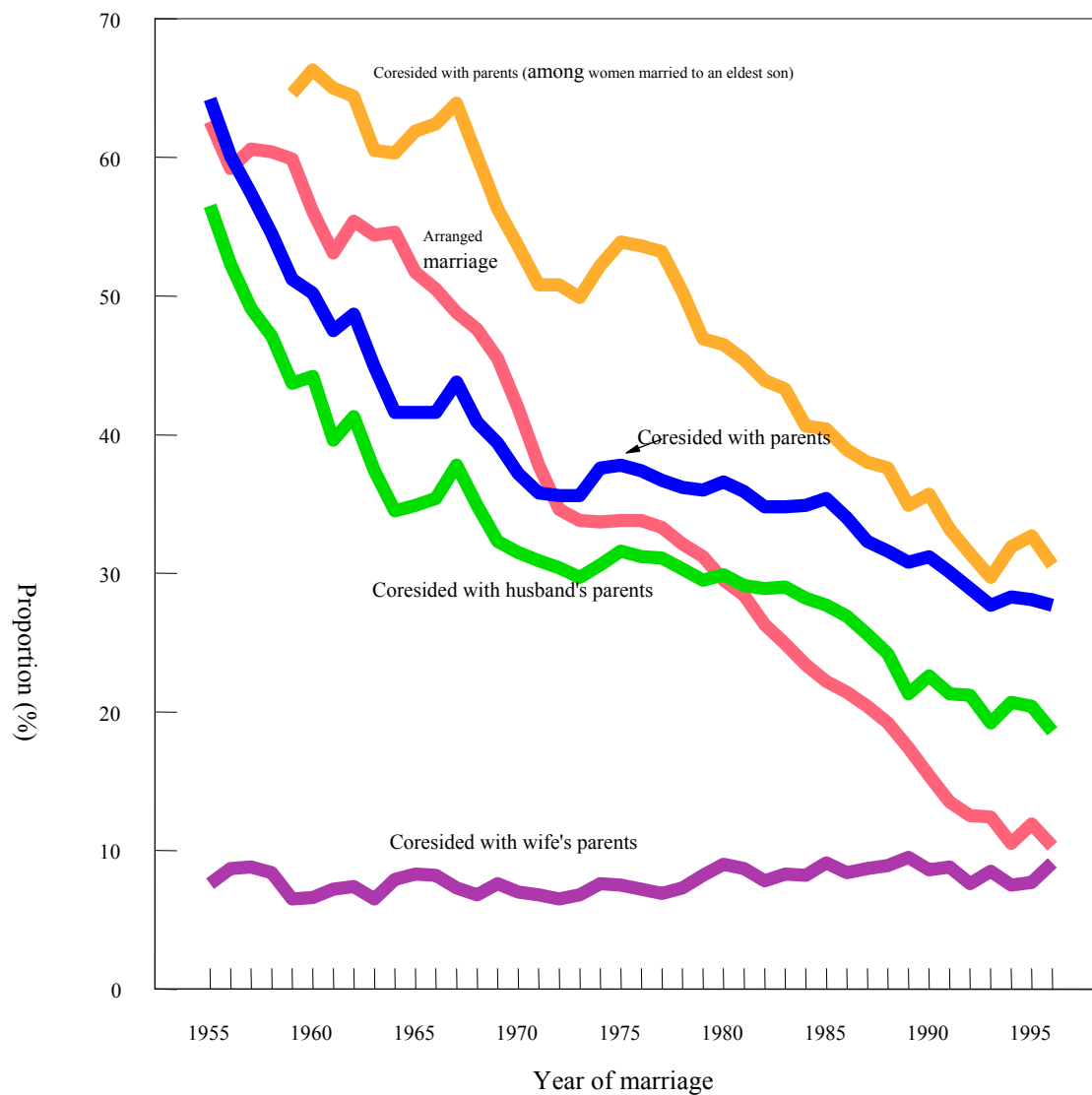
**Changing family  
support !**

**Who provides care to  
the elderly?**

# Change in the proportion of those 60+ living in three-generational households, selected countries, 1981-2001

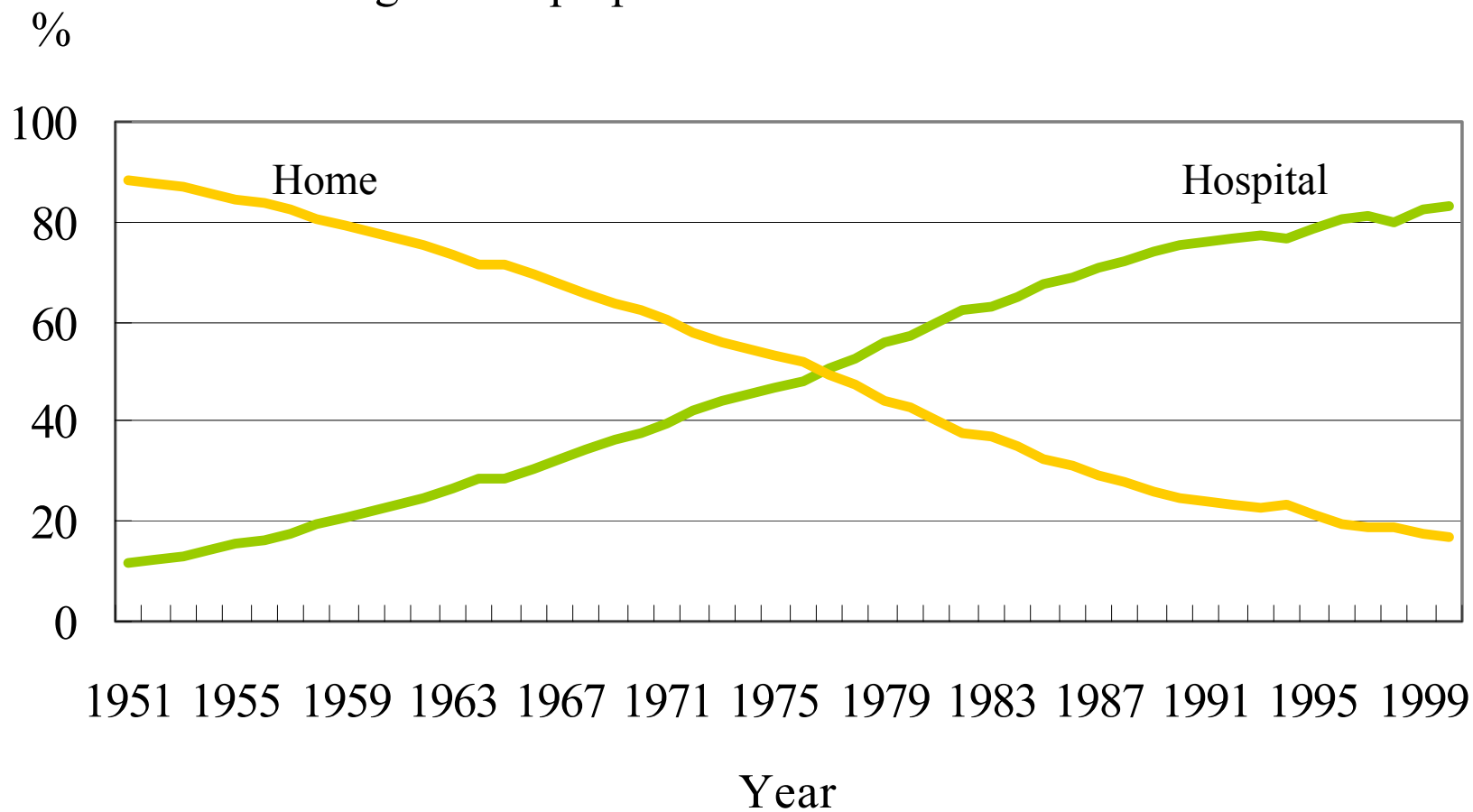


# Trends in the proportion of marriages that were arranged and the proportion of newly married couples who coresided with parents at the time of marriage: Japan, 1955-96



Source: Three-year moving averages based on pooled data for currently married women age 15-49 from nine rounds of the National Survey on Family Planning between 1981 and 1998.

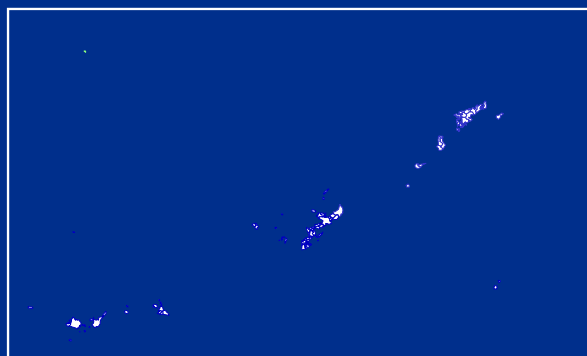
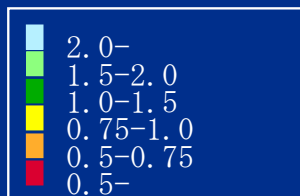
## Change in the proportion of deaths at residence



1955

40-59 Women

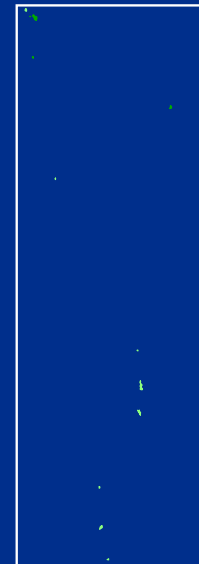
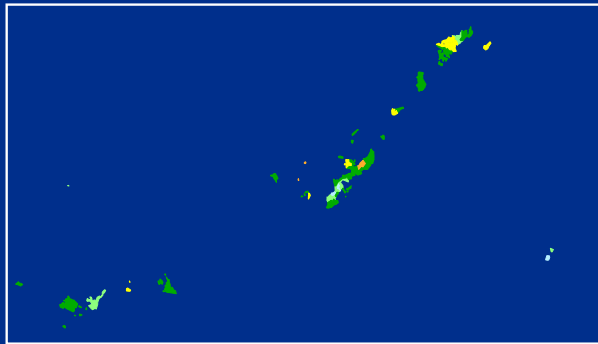
65-84



1975

40-59 Women

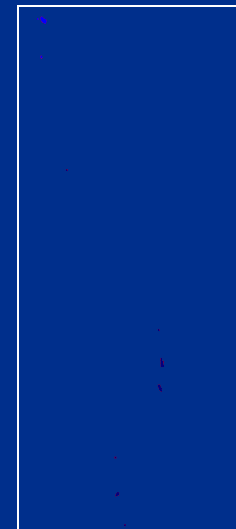
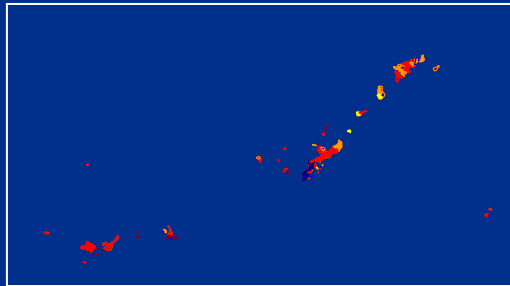
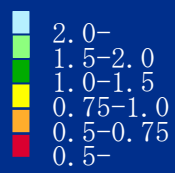
65-84



2000

40-59 Women

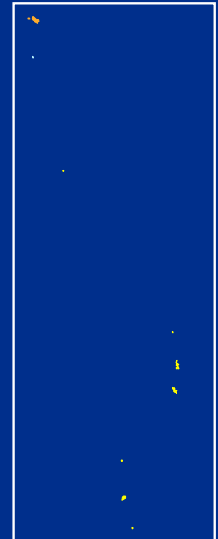
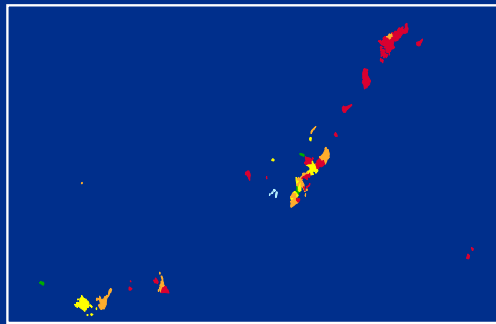
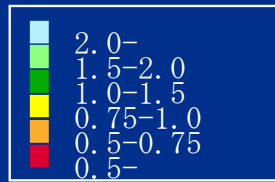
65-84



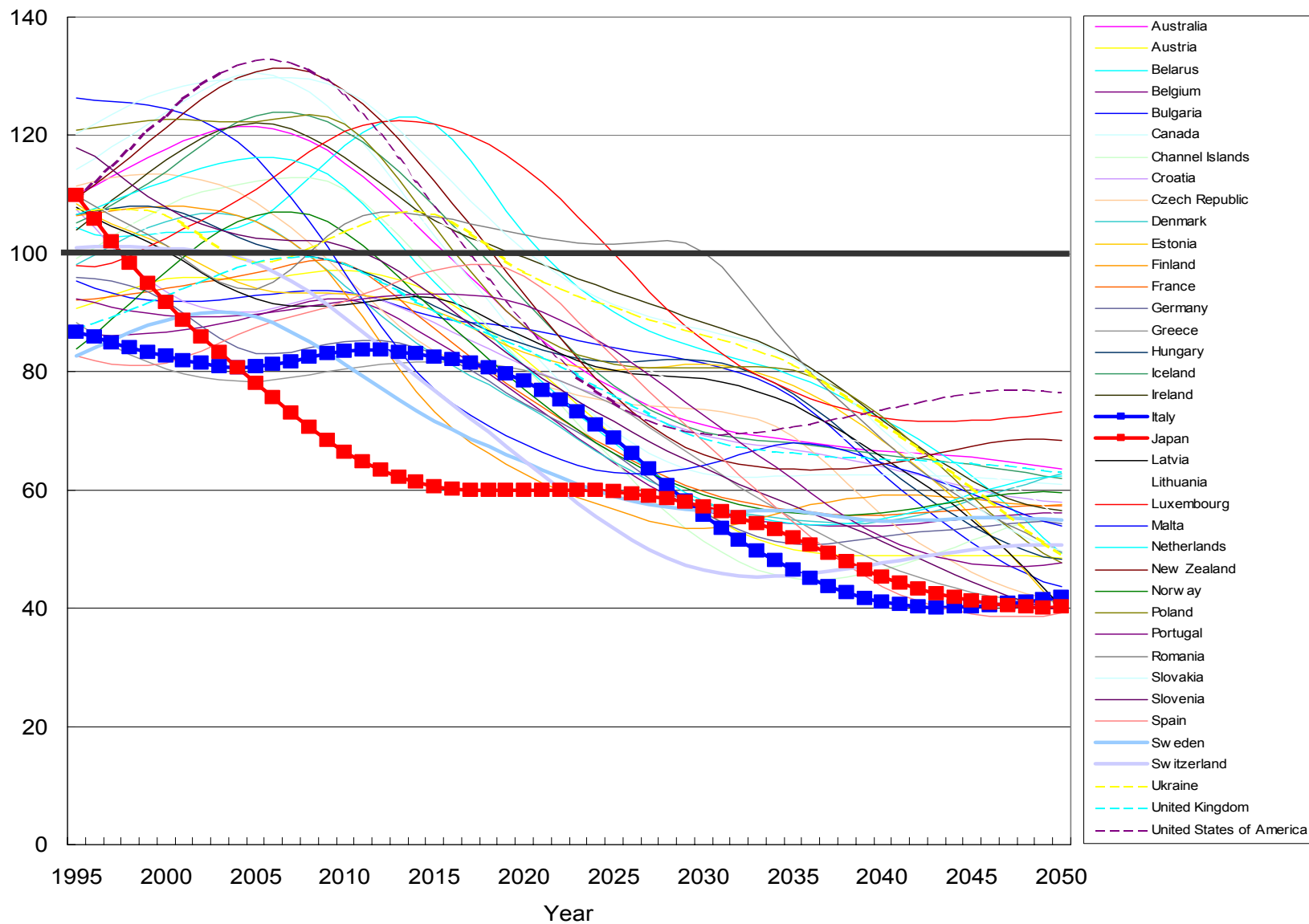
2025

40-59 Women

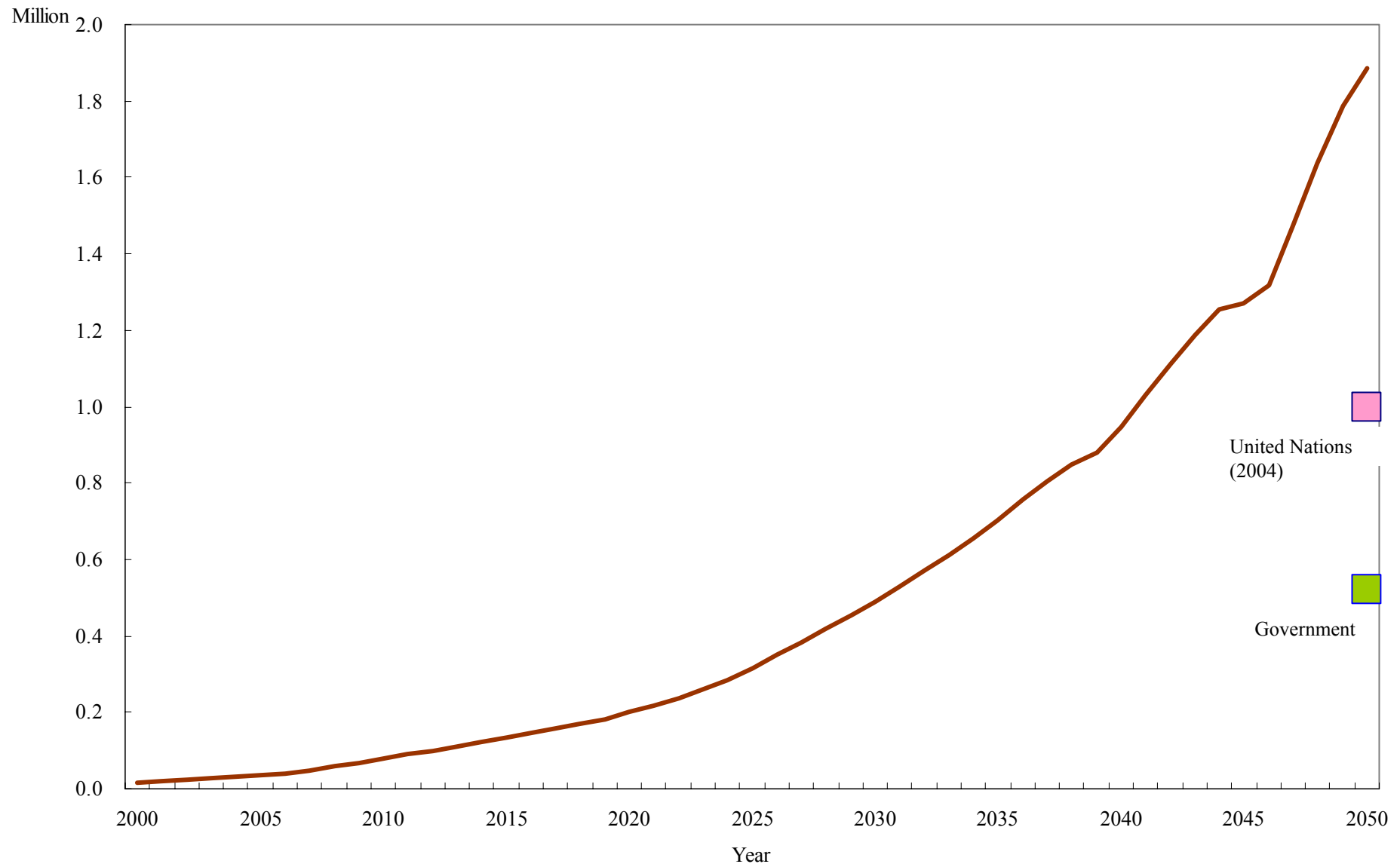
65-84



# Family support ratio (Women 40-59 / 65-84), 1995-2050

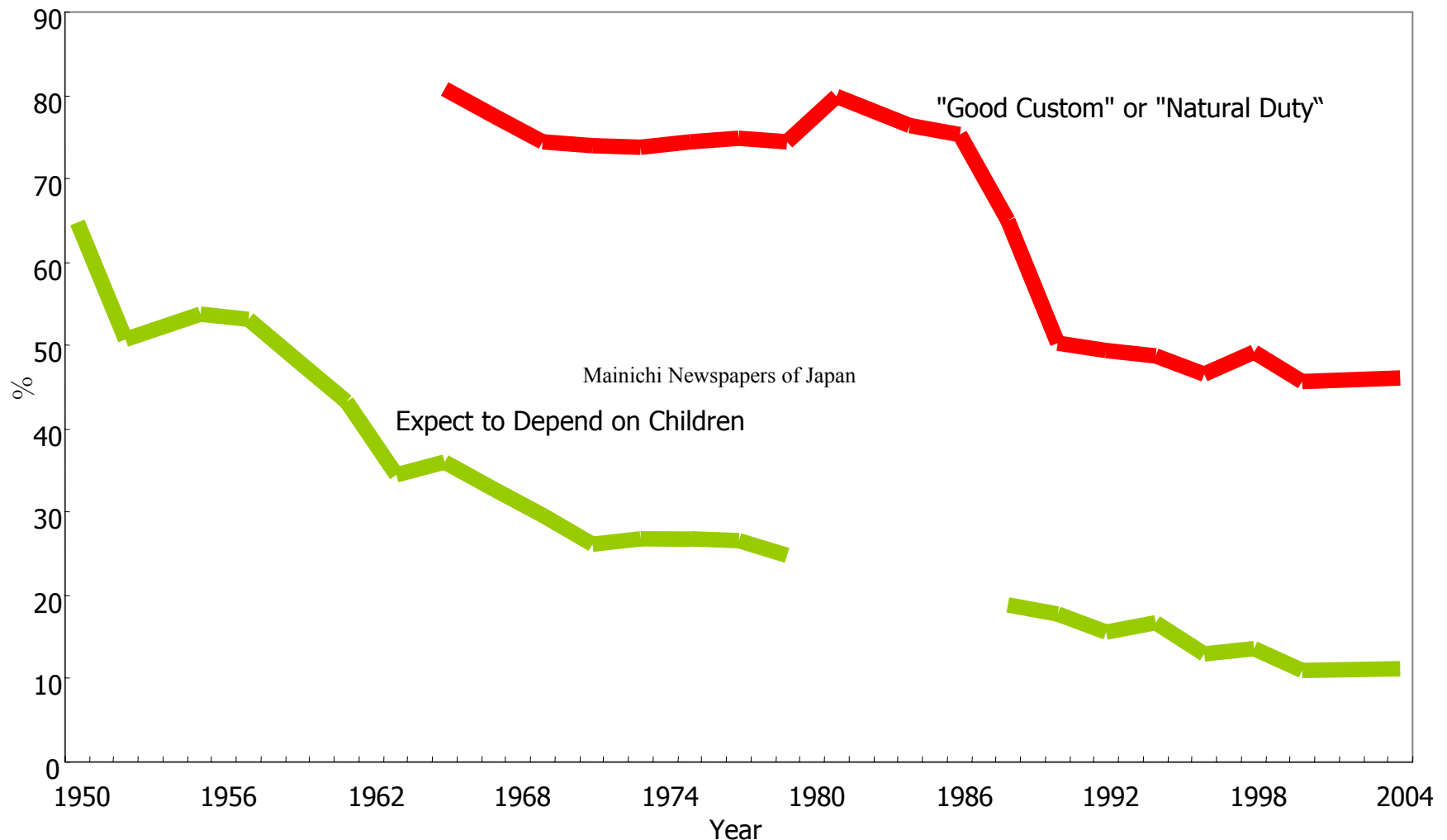


# Projected number of centenarians



# **Sudden Value Shift**

# Trends in norms and expectations about care for the elderly: Japan, 1950-2004



Sources: Mainichi Newspapers of Japan, *Summary of Twenty-fifth National Survey on Family Planning*, 2000.

Mainichi Newspapers of Japan, *Summary of the 2004 round of the National Survey on Population, Families and Generations*, 2004.

# Those aged 50+ living in Tokyo Metropolitan Area

- Husbands 41%
- Wives 19%
- What are these percentages?



富士山  
雪景  
葛城

葛城

**Thank you!**