The background of the slide is a solid brown color with a pattern of stylized, overlapping autumn leaves in various shades of brown and tan. The leaves are scattered across the entire area, creating a textured, seasonal feel.

A Long-term Forecast of Demographic Transition in Japan and Asia

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Professor, Hosei University



Why is the Population Problem Important for Asia Today?

1. The uncertainty of population forecasts is relatively low.
2. Asia's demographic structure will undergo major change from here on.
3. Demographics are deeply tied to economic society.



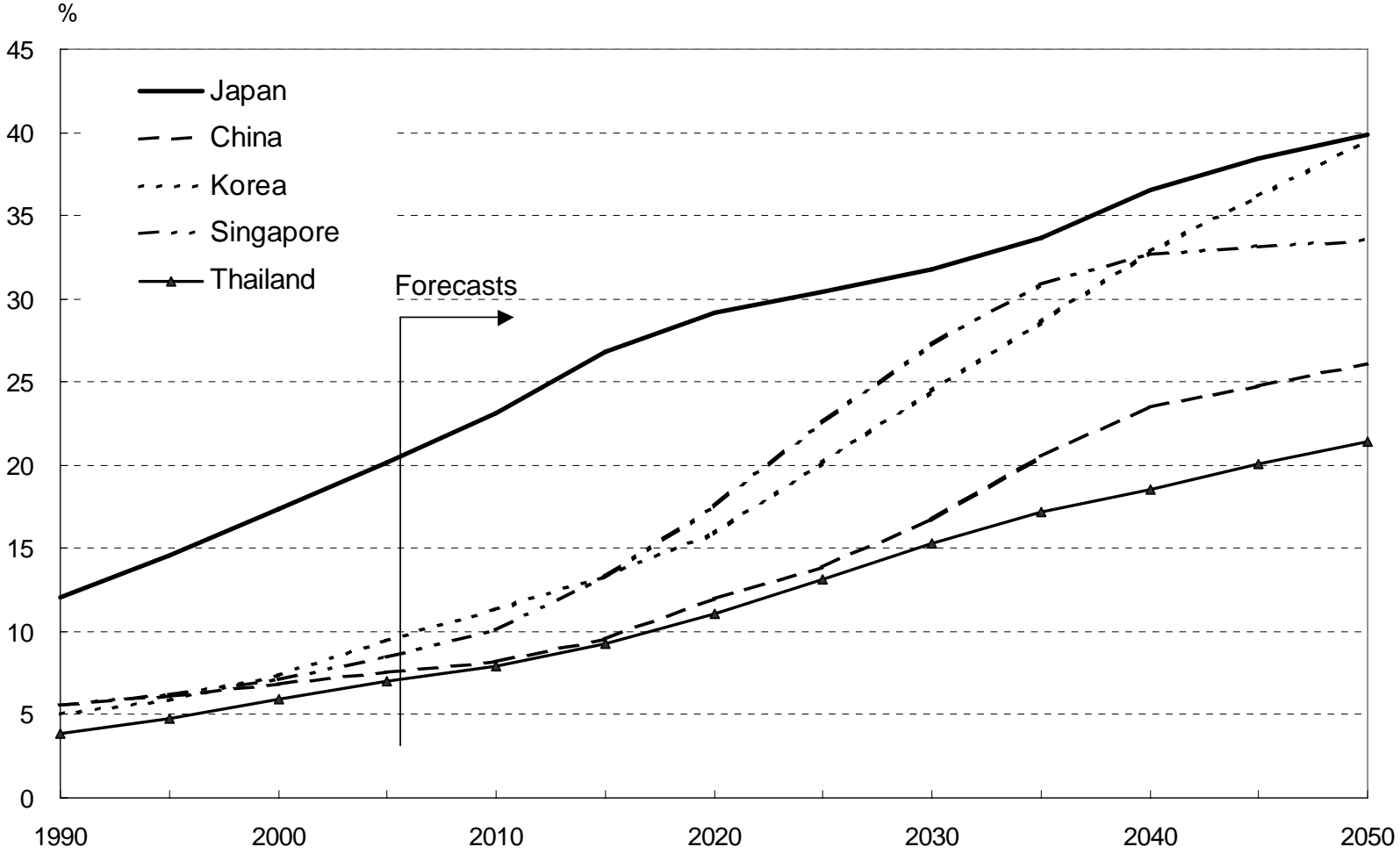
Major Changes in Asia's Demographic Structure

Transitions in Asian Nation Populations

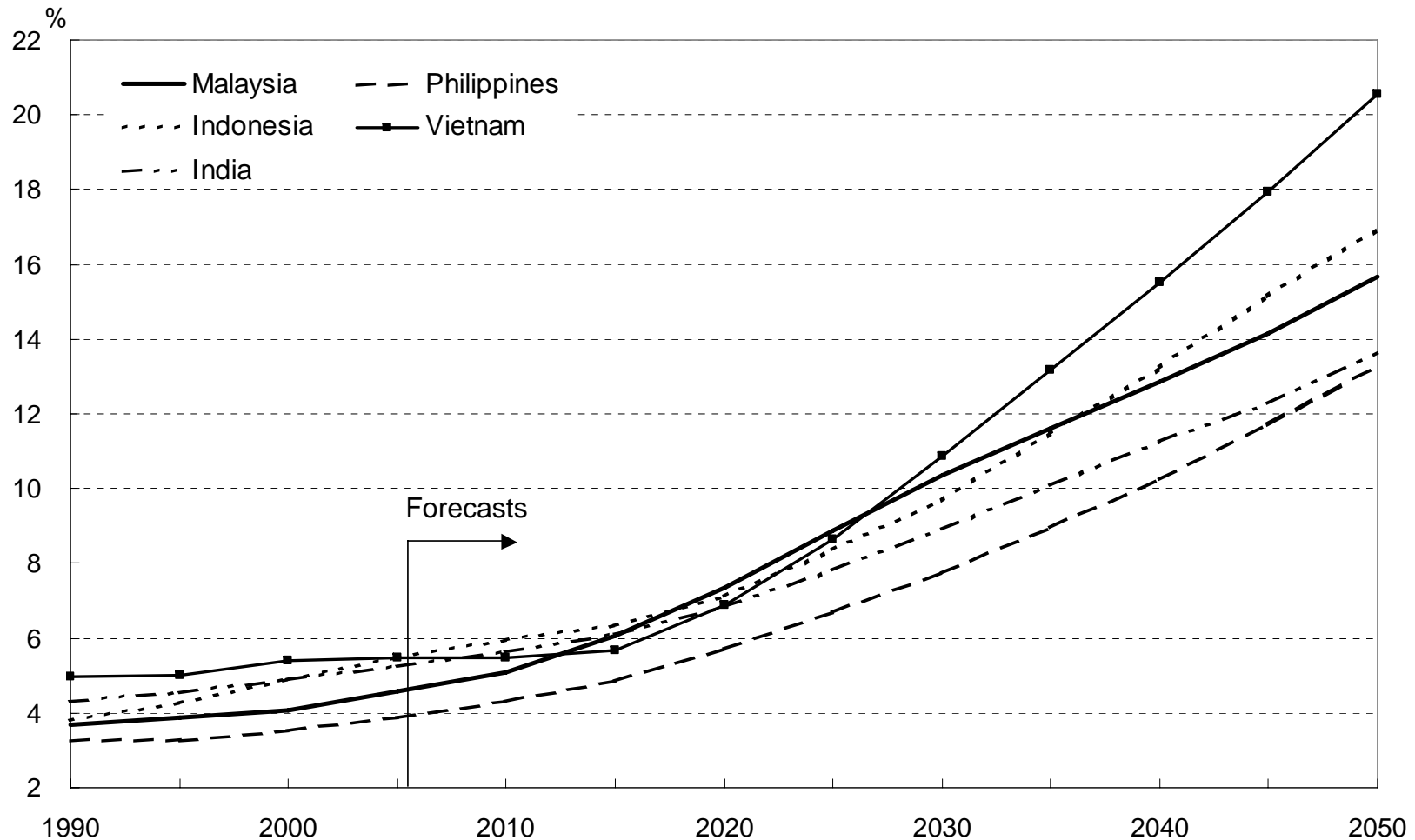
Period	Period when total fertility rate falls below 2.1	Period when elderly population ratio exceeds 14%	Period when labor force begins to decline	Period when total population begins to decline
1950-1955				
1955-1960				
1960-1965	Japan			
1965-1970				
1970-1975				
1975-1980	Singapore			
1980-1985	Hong Kong			
1985-1990	Korea			
1990-1995	China	Japan		
1995-2000	Thailand			
2000-2005			Japan	
2005-2010	Vietnam			Japan
2010-2015		Hong Kong		
2015-2020	Indonesia	Korea, Singapore	China, Hong Kong	Korea
2020-2025	Malaysia		Korea, Singapore	
2025-2030		China, Thailand		China
2030-2035	India			
2035-2040	Philippines	Vietnam	Thailand, Vietnam	Singapore
2040-2045		Malaysia, Indonesia		Thailand, Vietnam
2045-2050				

Note: Rates of change for the total fertility rate, labor force and total population were measured as five-year averages. The elderly population ratio was viewed by five-year intervals (for 1995, for example, the results are classified as being for 1990-95).

Trends in Elderly Population Ratios for Major Asian Countries (Japan + Group 2 Countries)

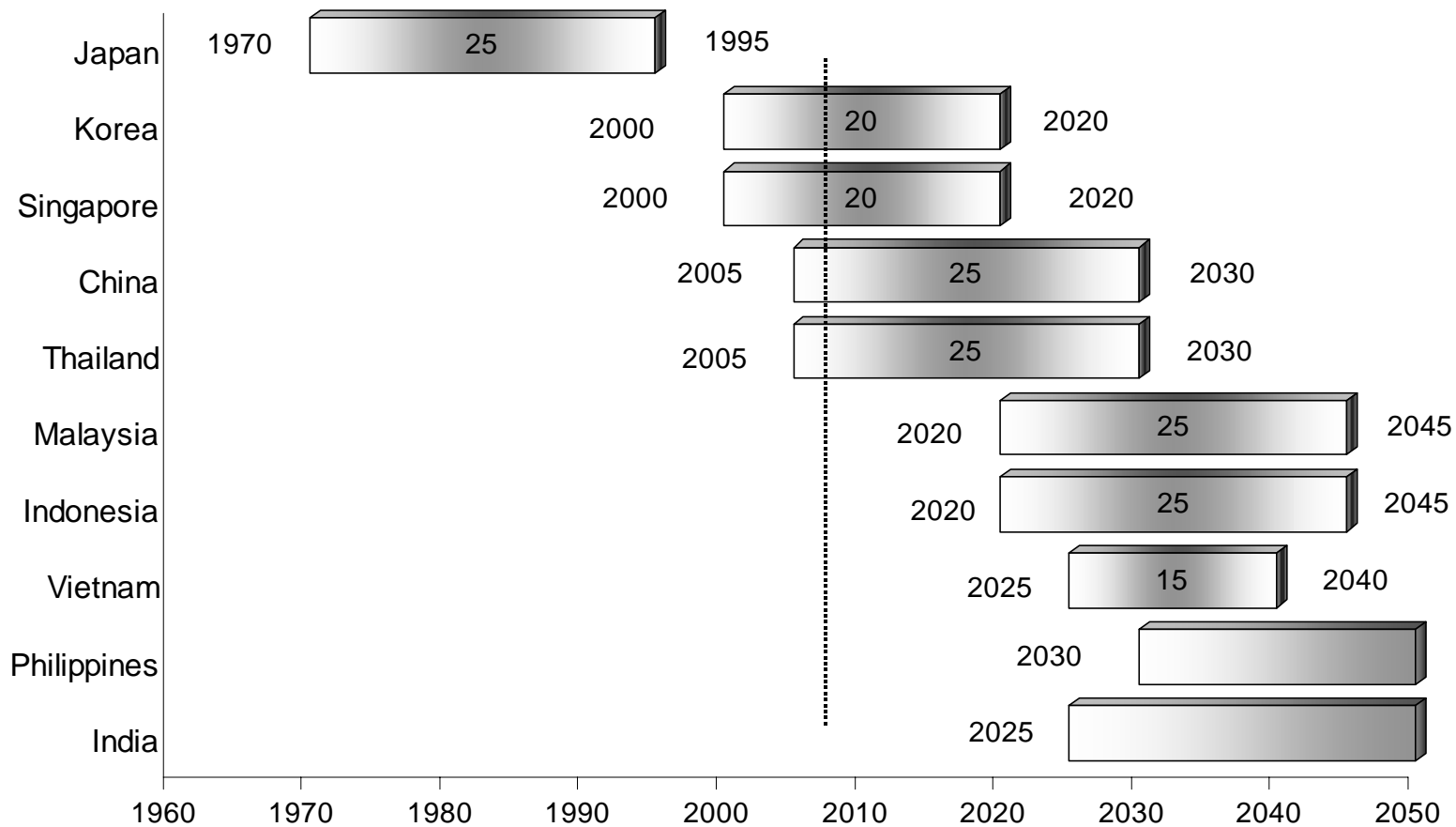


Trends in Elderly Population Ratios for Major Asian Countries (Group 3 Countries)



Source: United Nations, *World Population Prospects: The 2004 Revision Population Database*.

Overview of Population Aging Speed



(Notes)

1. Periods when age 65+ segment reaches 7% and 14% of total population (data viewed at five-year intervals).

Even by 2050, neither the Philippines nor India will have achieved the status of "aged societies."

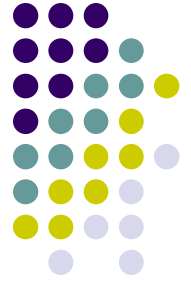
2. Data for 2006 and after based on Japan Center for Economic Research (JCER) forecasts.

Source: United Nations, *World Population Prospects: The 2004 Revision Population Database*.



Demographics will Change the Asian Economies

Demographic Change and Economic Growth



① Manpower

Labor forces decrease due to declining birthrates.

② Capital

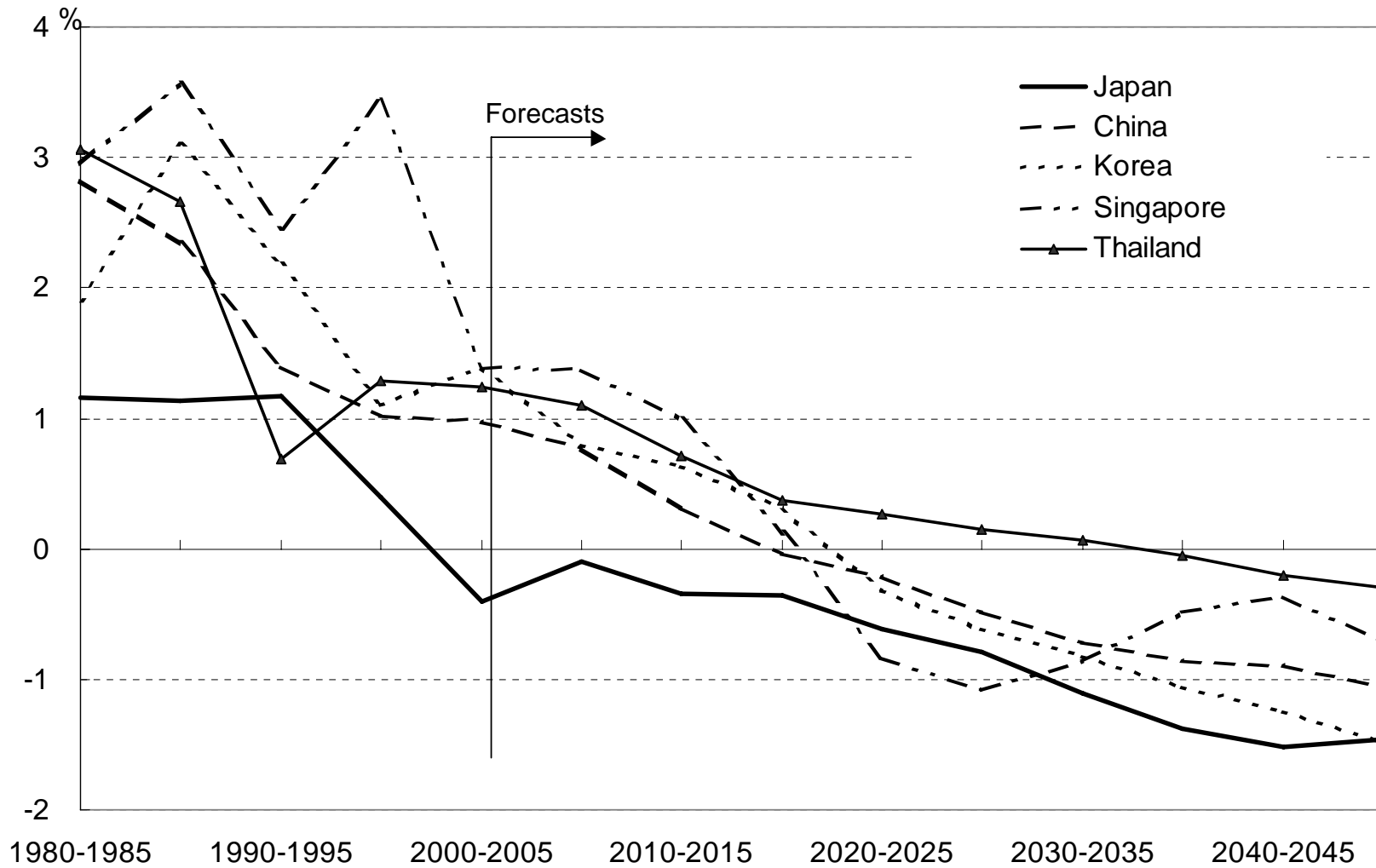
Savings rates decline due to aging populations.

③ Economic and Social Systems

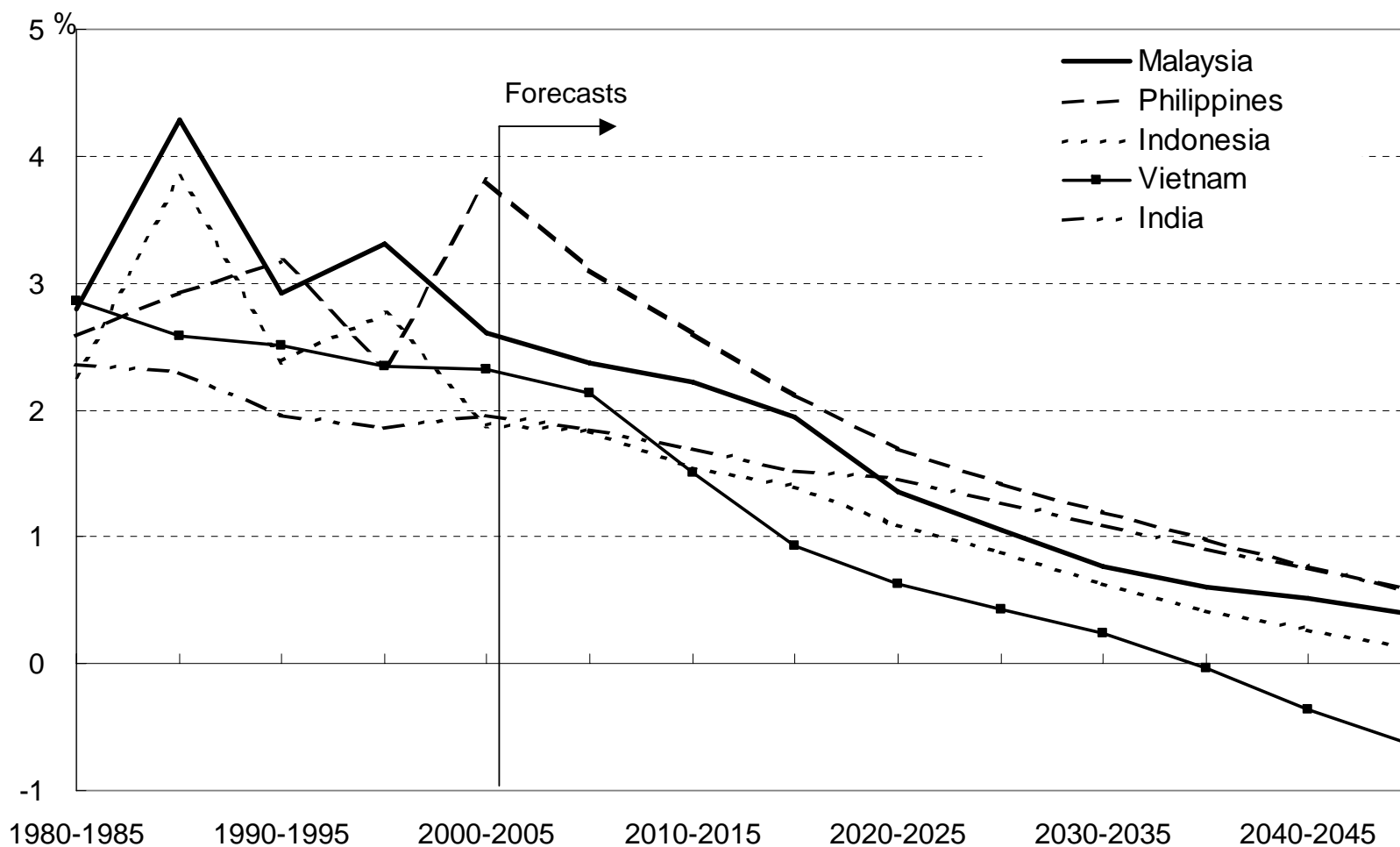
Changes in balances between working generations and non-working generations, leading to unbalances in intergenerational benefits and burdens.

$$\begin{aligned} \text{per capita GDP} &= \frac{\text{GDP}}{\text{population}} \\ &= \frac{\text{labor force}}{\text{population}} \times \frac{\text{GDP}}{\text{labor force}} \\ &\quad (\text{labor participation rate}) \quad (\text{labor productivity}) \end{aligned}$$

Changes in Labor Forces (Japan + Group 2 Countries)

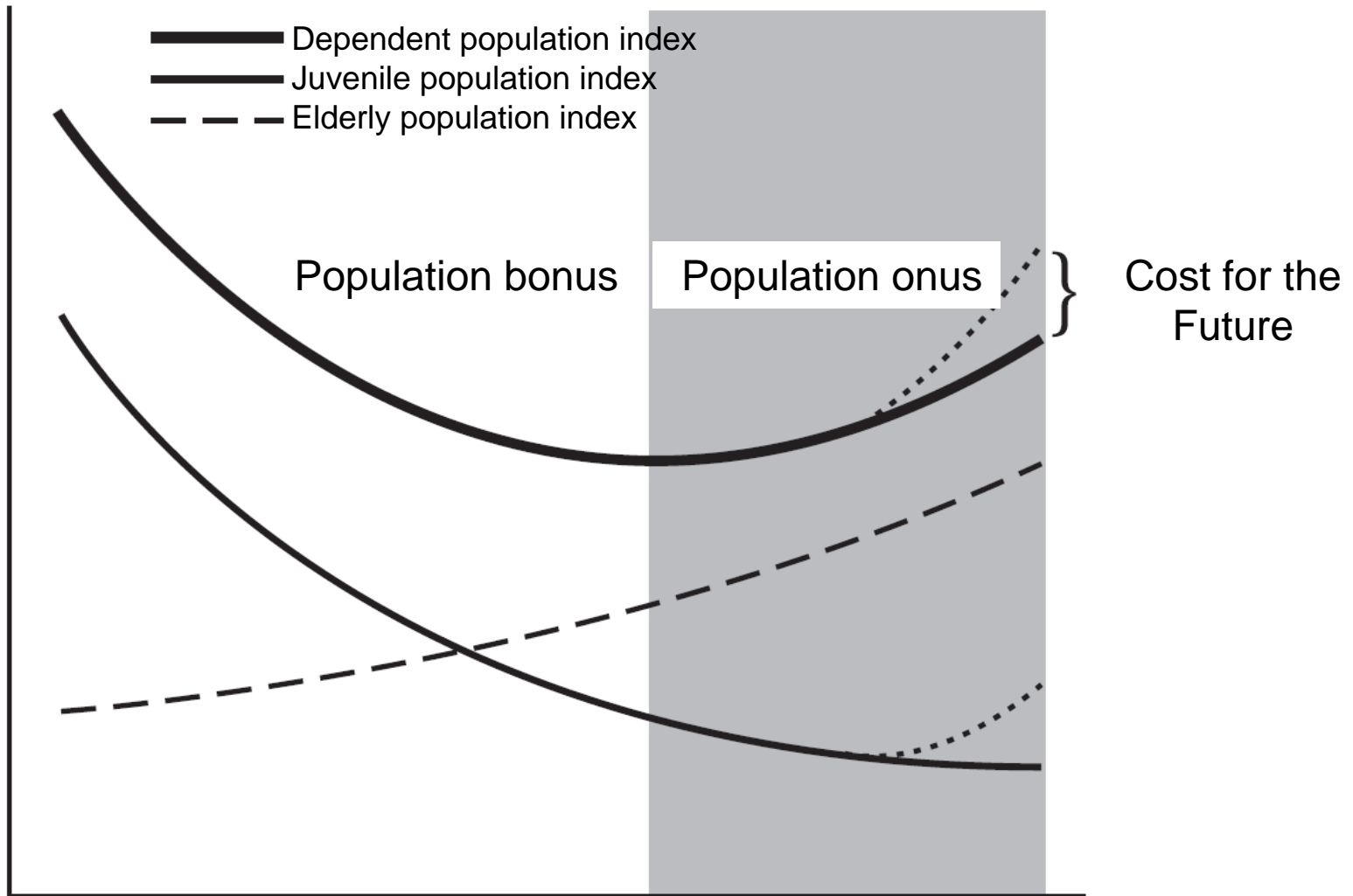


Changes in Labor Forces (Group 3 Countries)

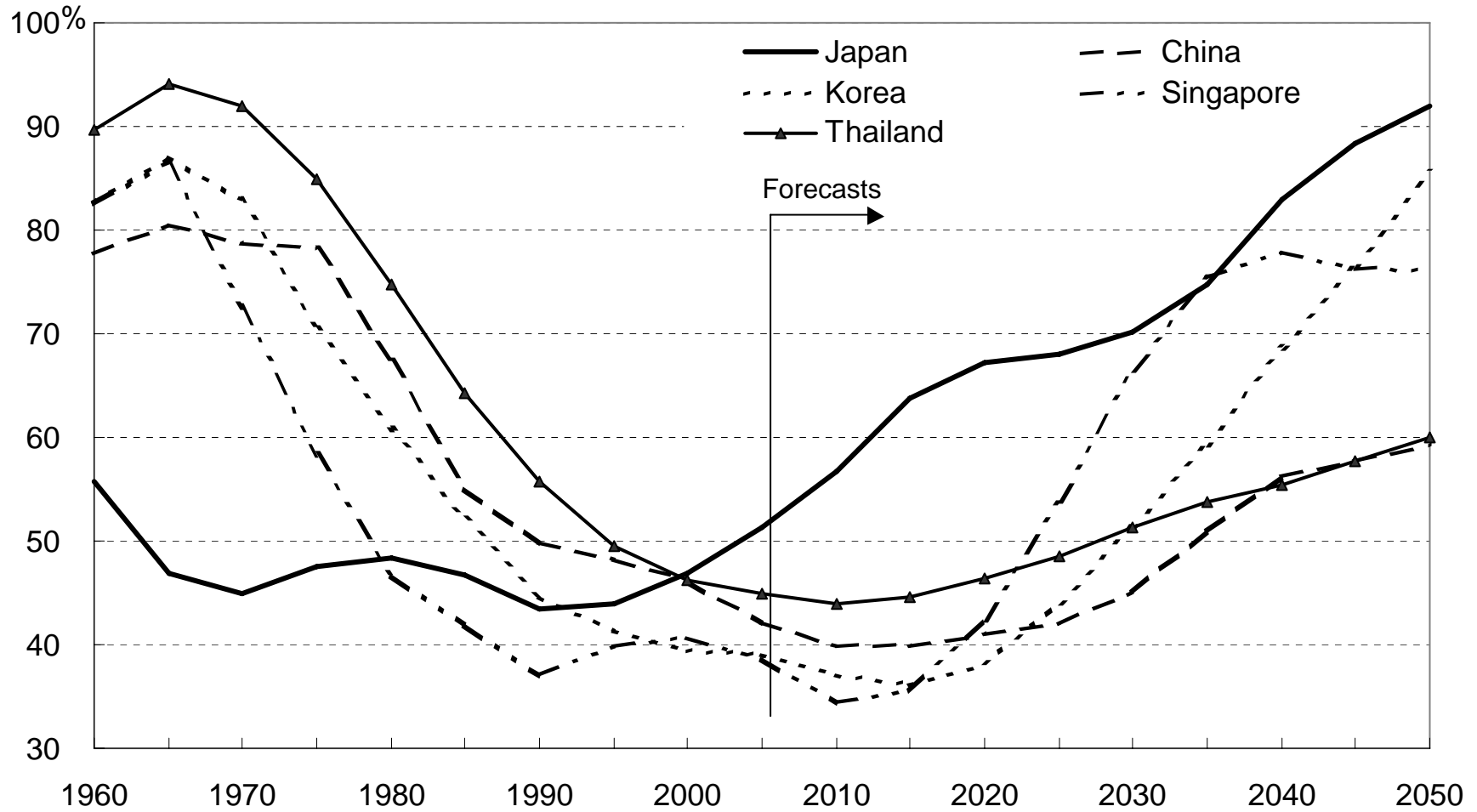


Note: Data for 2006 and after based on Japan Center for Economic Research (JCER) forecasts.
Source: Ministry of Internal Affairs and Communications, *Labor Force Survey*; ILO, *LABORSTA*.

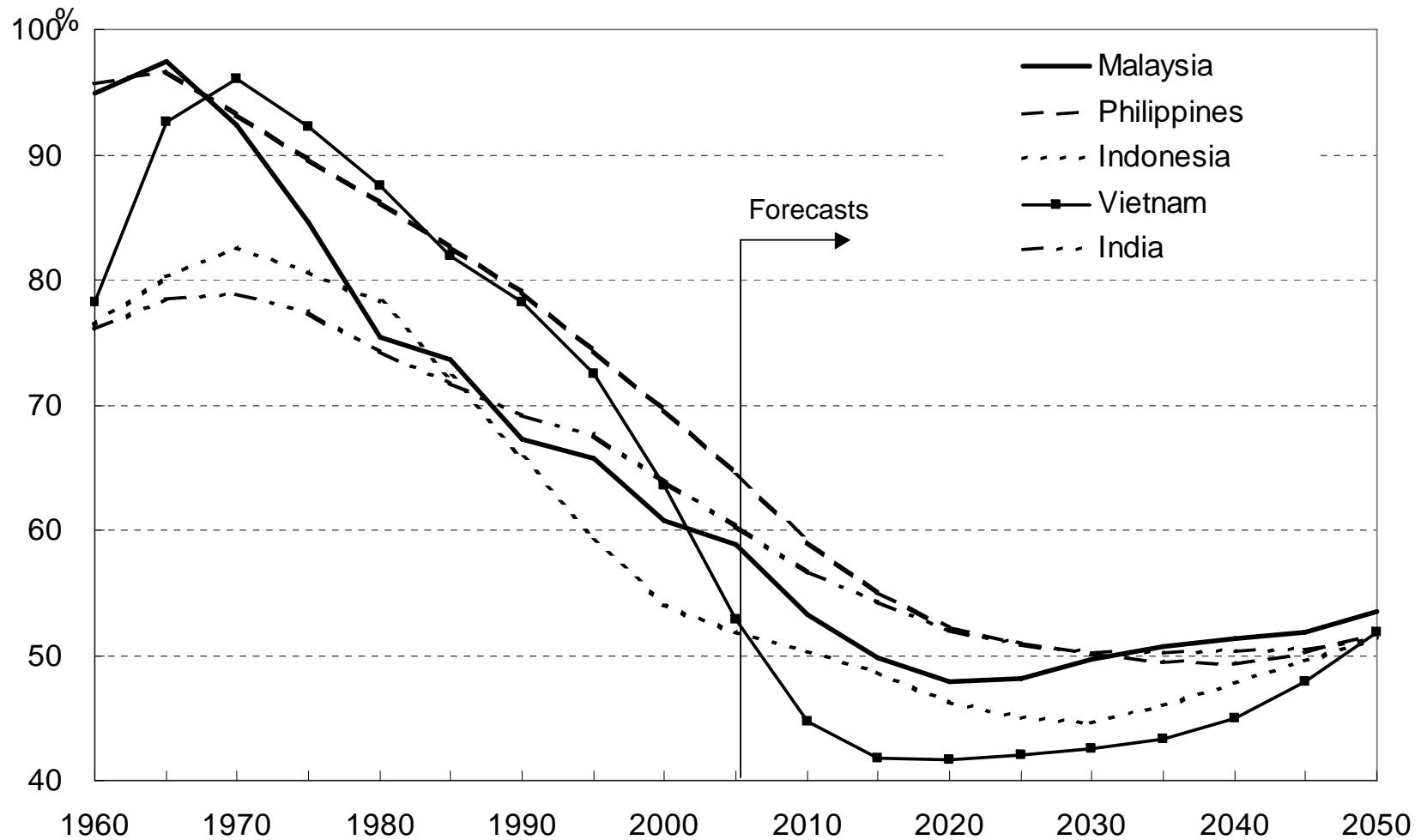
Population Bonus and Population Onus



Changes in Dependent Population Index (Japan + Group 2 Countries)



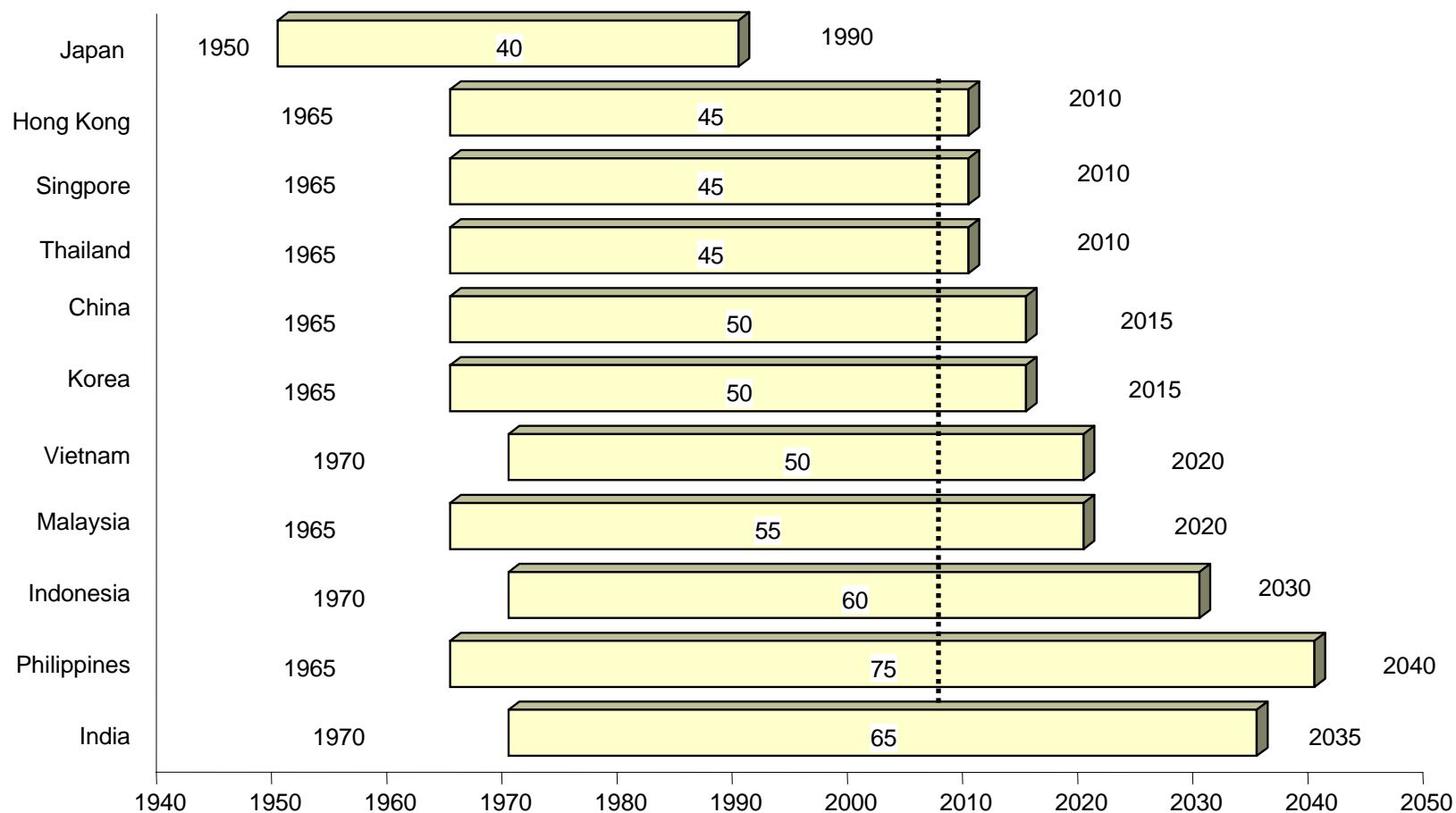
Changes in Dependent Population Index (Group 3 Countries)



Note: Data for 2006 and after based on Japan Center for Economic Research (JCER) forecasts.

Source: United Nations, *World Population Prospects: The 2004 Revision Population Database*.

Population Bonus Period Overview



Note: Population bonus periods defined as periods during which dependent population indexes continue to decrease. Figures measured at five-year intervals.

Source: United Nations, *World Population Prospects*.

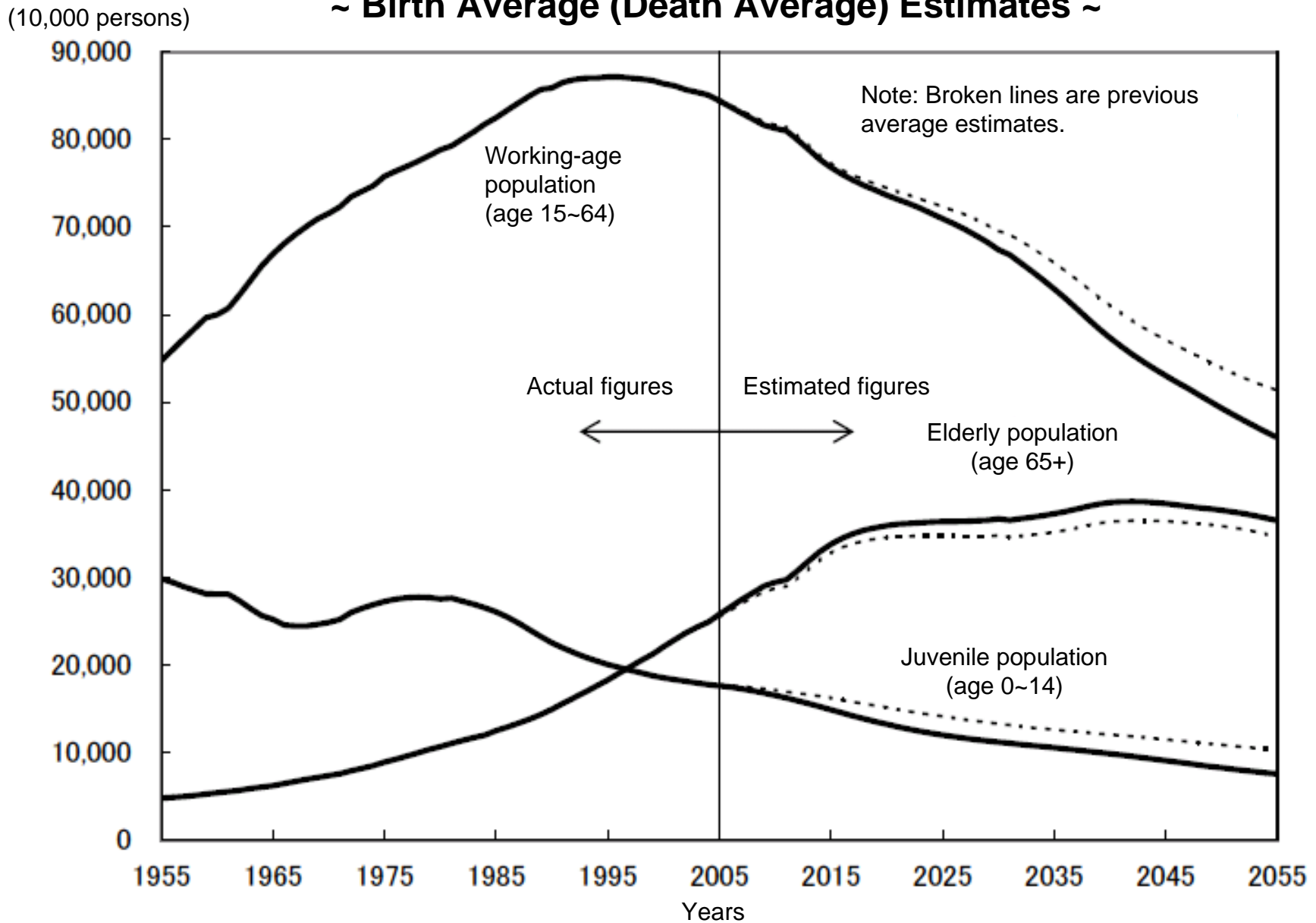
Per-Capita GDP at Conclusion of Population Bonus

Country	Population bonus final year	Per-capita GDP
Japan	1990	23,504
Thailand	2010	8,740
Singapore	2010	30,391
Hong Kong	2010	32,040
Korea	2015	27,724
China	2015	9,722
Malaysia	2020	15,571
Vietnam	2020	4,763
Indonesia	2030	6,207
India	2035	7,758
Philippines	2040	12,289



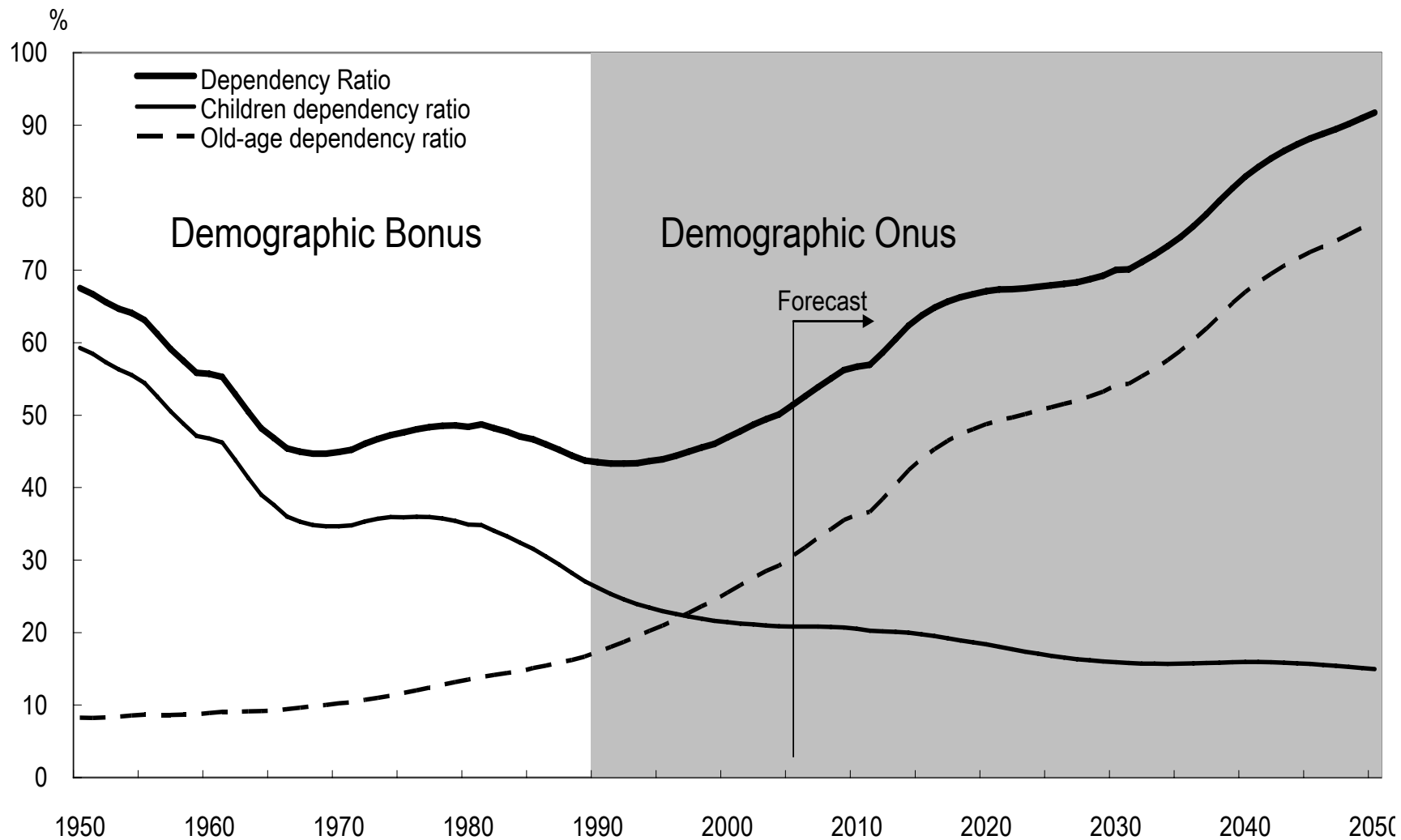
Demographic Changes and Japan's Economic Society

Demographic Trends for Three Age Categories ~ Birth Average (Death Average) Estimates ~



Medium estimates for *Population Estimates* (December 2006), National Institute of Population and Social Security Research.

Shift from demographic “bonus” to “onus”



Note : Figures after 2006 are based on JCER forecast.

Source: JCER (2007).

Changes in Dependent Population

	2005	2030	2050
Dependent population index	51.4 (1.9 dependents per person)	70.9 (1.4 dependents per person)	93.0 (1.1 dependents per person)
Dependent elderly population index	30.5 (3.3 dependents per person)	54.4 (1.8 dependents per person)	76.3 (1.3 dependents per person)
Dependent juvenile population index	20.8 (4.8 dependents per person)	16.5 (6.1 dependents per person)	16.7 (6.0 dependents per person)

Medium estimates for *Population Estimates* (December 2006),
National Institute of Population and Social Security Research.

Japan Economic Society Under Population Onus

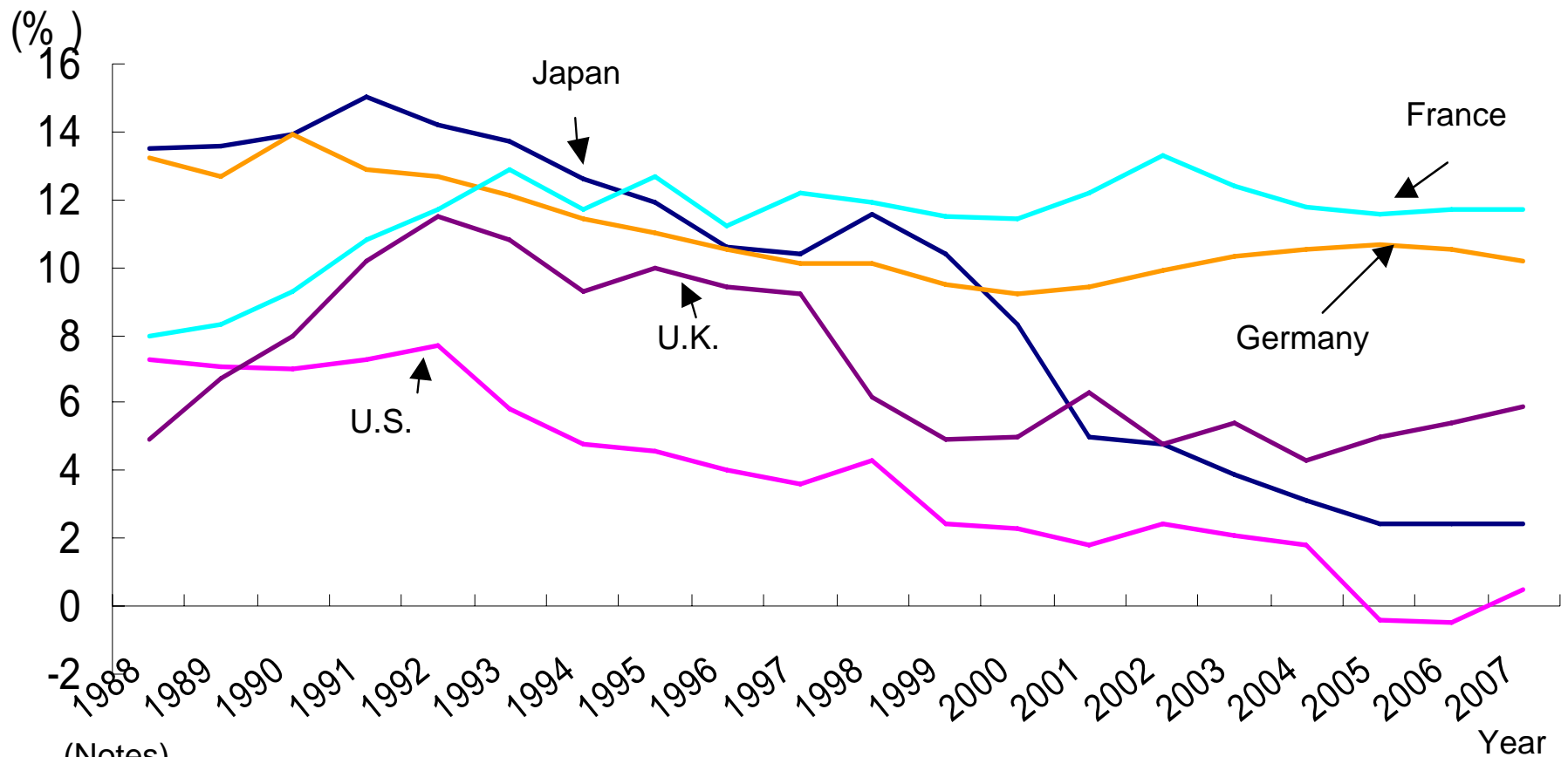
Economic impact: Decline in growth potential

1. Intensifying labor shortage
2. Declining savings rate

Social impact: Increasingly heavy pressure on social security system

1. Pension system demands reform
2. Increases forecast in medical expenses

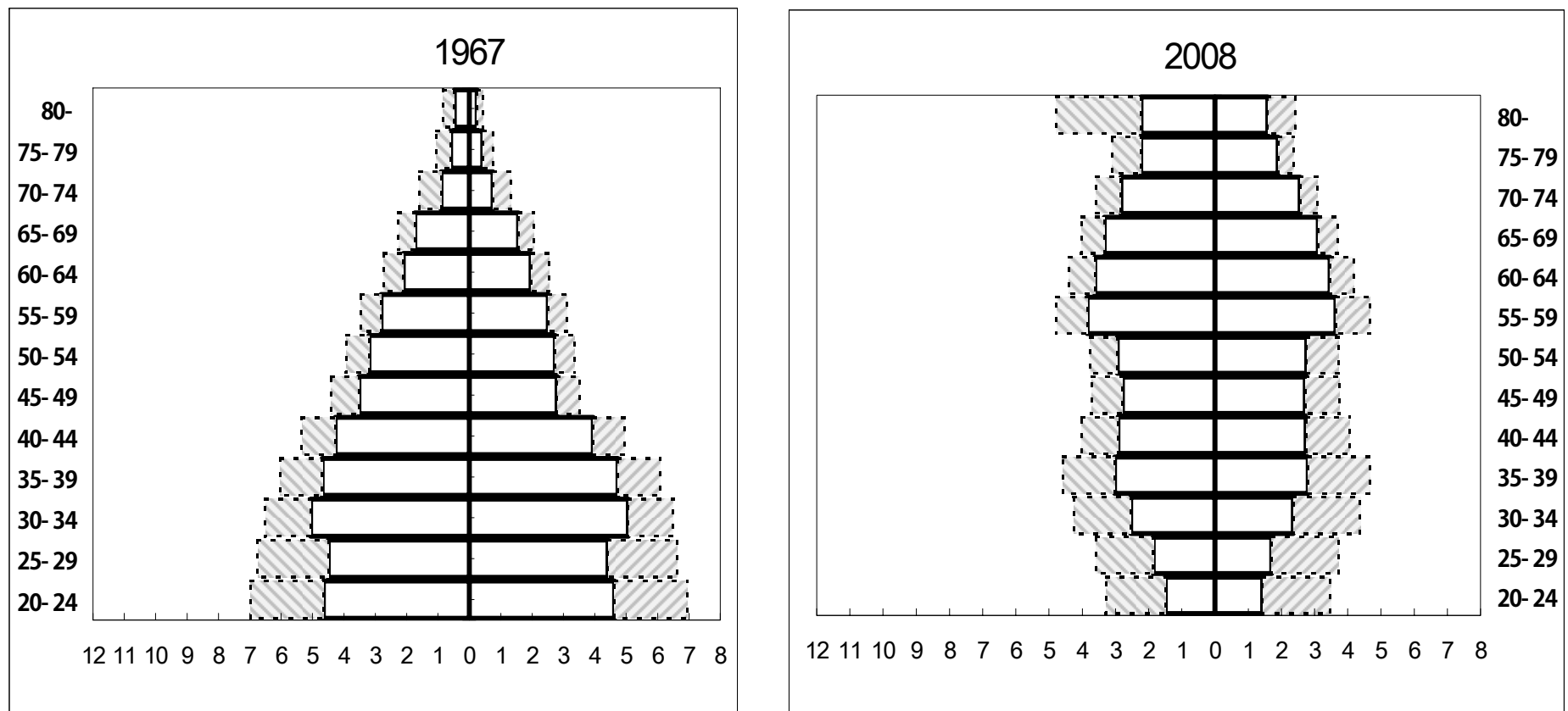
Japan's Declining Savings Rate



(Notes)

1. Prepared from OECD, *Economic Outlook No. 73*; Cabinet Office, *National Economic Accounting*.
 2. Japan figures prior to 1989 based on 68SNA.
- Source: Cabinet Office, *2003 Economic Policy White Paper*.

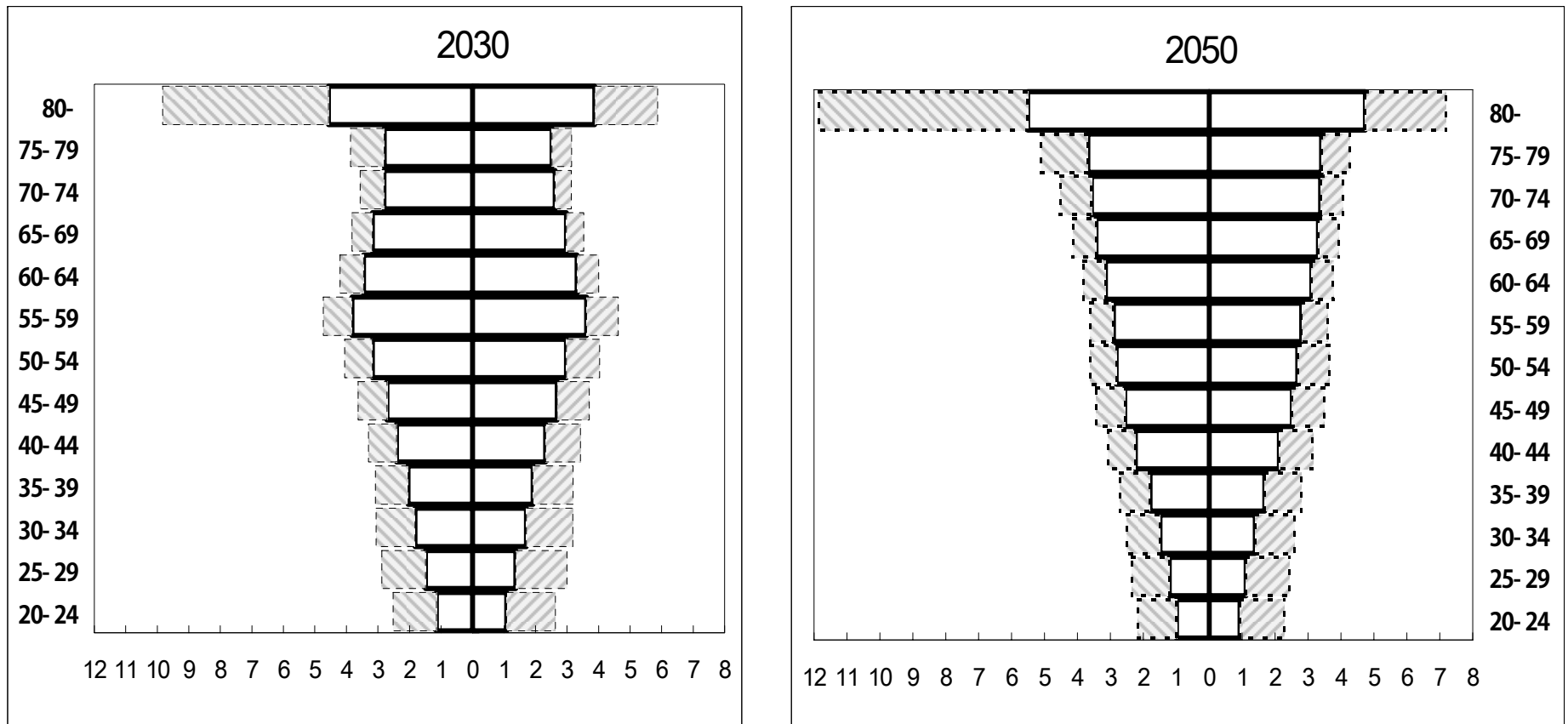
Distribution of eligible & actual voters by age group changes dramatically (1967, 2008).



Note 1: Outer dotted line shows the age structure of eligible voters and inner solid line shows that of actual voters. Figures indicate the ratio of voters (eligible/actual) by age group to the total eligible voters in each year.

Source: Author's calculations.

Distribution of eligible & actual voters by age group changes dramatically (2030, 2050)



Note 1: Outer dotted line shows the age structure of eligible voters and inner solid line shows that of actual voters. Figures indicate the ratio of voters (eligible/actual) by age group to the total eligible voters in each year.

Source: Author's calculations.



Conclusion (1)

- Asian nations will follow the path of aging populations and declining TFRs like Japan.

negative impacts seen in Japan.

1) Labor force shortages

⇒ Utilizing female and the aged labor force more extensively.

2) Declining savings rates

⇒ Attracting overseas investment funds.

3) Changes in voting structure

⇒ Being aware that the burden of aging is shared fairly among different generations.



Conclusions (2)

- The characteristics of Asia's aging:

- * Faster than Japan's

- negative impacts:**

- 1) Difficulty of taking universal measures
 - 2) Systems (e.g. pension) are bound to be modified **in a proactive way** after introduction.

- * Enormous in scale.

- negative impact:**

- 1) Its burden will increase sharply.

- positive effect:**

- 1) A possibility of new markets/industries.