Population Dynamics:
Its Economic and Social Implications

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Key Issues

- How population change influence economy and society (current and future)

- What policies can be pursued to influence the outcome

Outline of Talk

I. Demographic Transition

II. Economic and Social Implications

III. Policy Implications

IV. Policy Recommendations

I. The Demographic Transition

- The world is experiencing two fundamental changes in their populations that will influence economic forces.
  - Population growth is slowing, but it varies across countries.
  - Population age structure is changing

Phases of Global Age Transition

Countries classified by age group (<25, 25-59, or 60+) with the largest absolute increase in population size.


Source: Based on UN Population Prospects 2008.

Andrew Mason, May 17, 2011
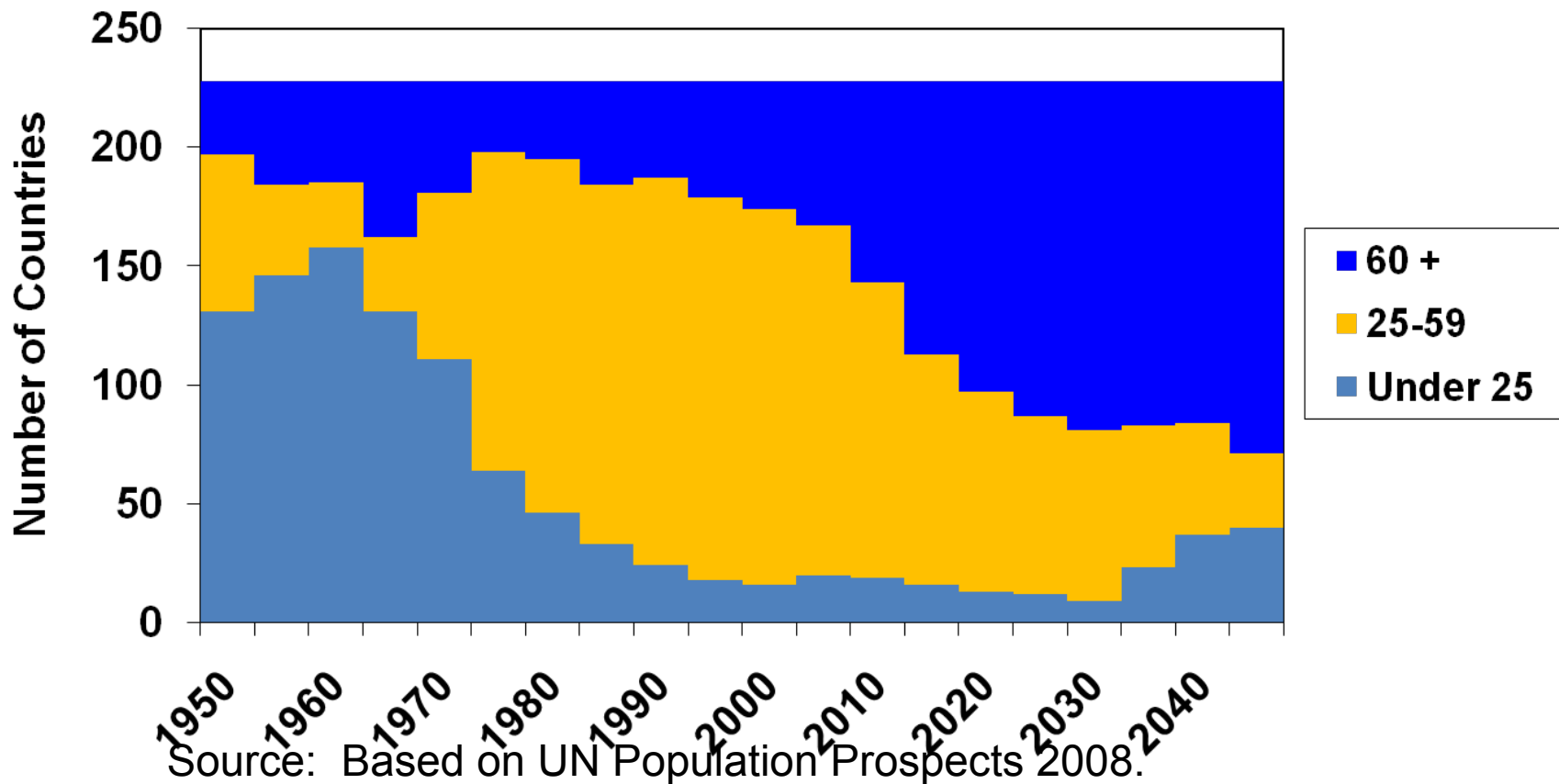
Population Growth Rates (%), 1950-2050

|	1950-55	1975-80	2000-05	2025-30	2045-50
China	1.87	1.48	0.67	0.17	-0.32
India	1.73	2.30	1.62	0.79	0.32
Indonesia	1.67	2.20	1.31	0.61	0.10
Japan	1.43	0.93	0.14	-0.56	-0.78
Korea	2.55	1.55	0.46	-0.25	-0.89
Mongolia	2.20	2.78	1.30	0.64	0.18
Pakistan	1.55	2.96	2.26	1.52	0.94
Singapore	4.90	1.30	1.49	0.38	-0.37
Thailand	2.84	2.08	0.76	0.12	-0.27
Viet Nam	1.87	1.99	1.45	0.75	0.21
United States	1.62	0.92	1.01	0.62	0.36

Percentage of Population in Asia Under Age 20
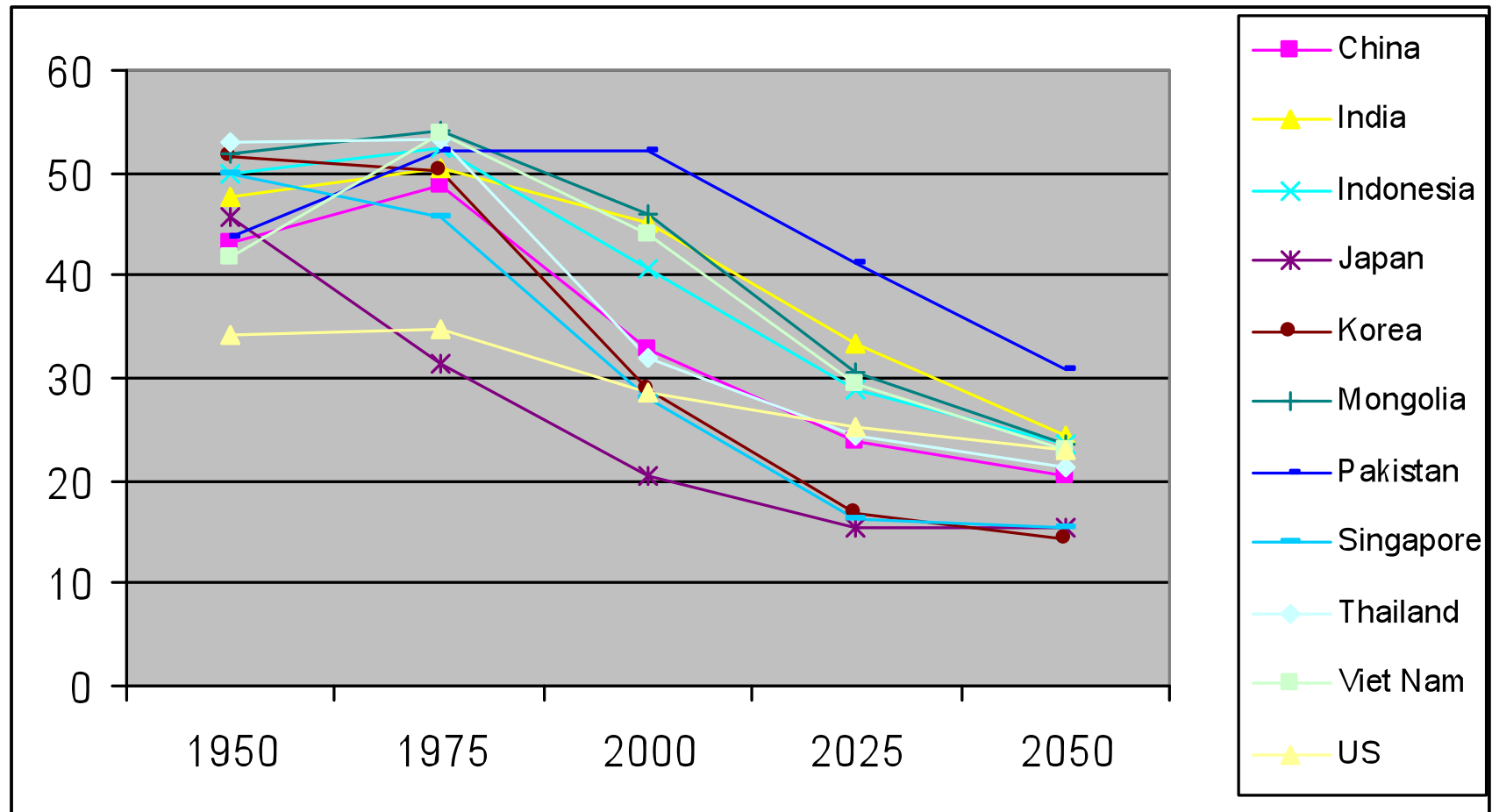
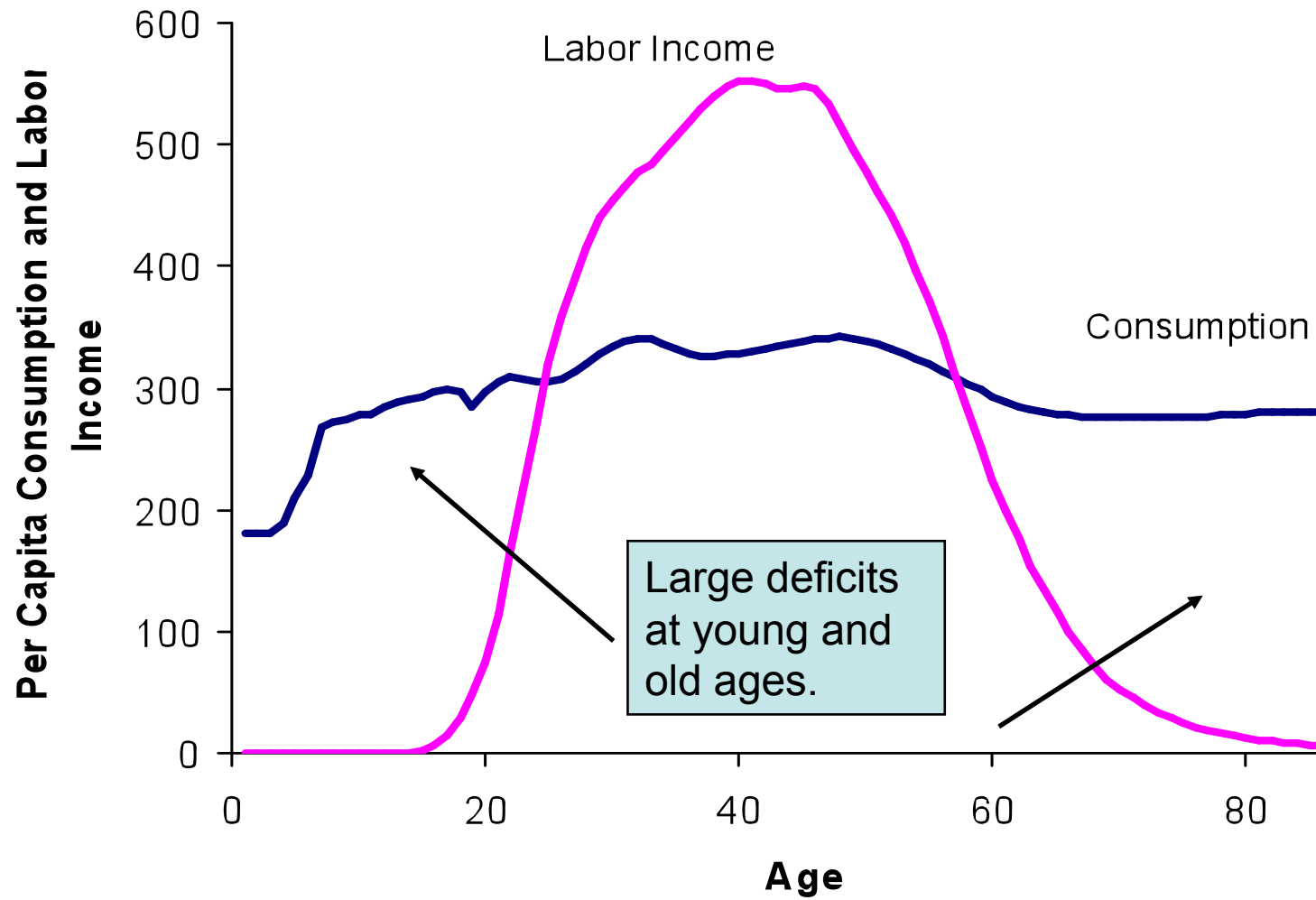# Percentage of Population 65 and Older
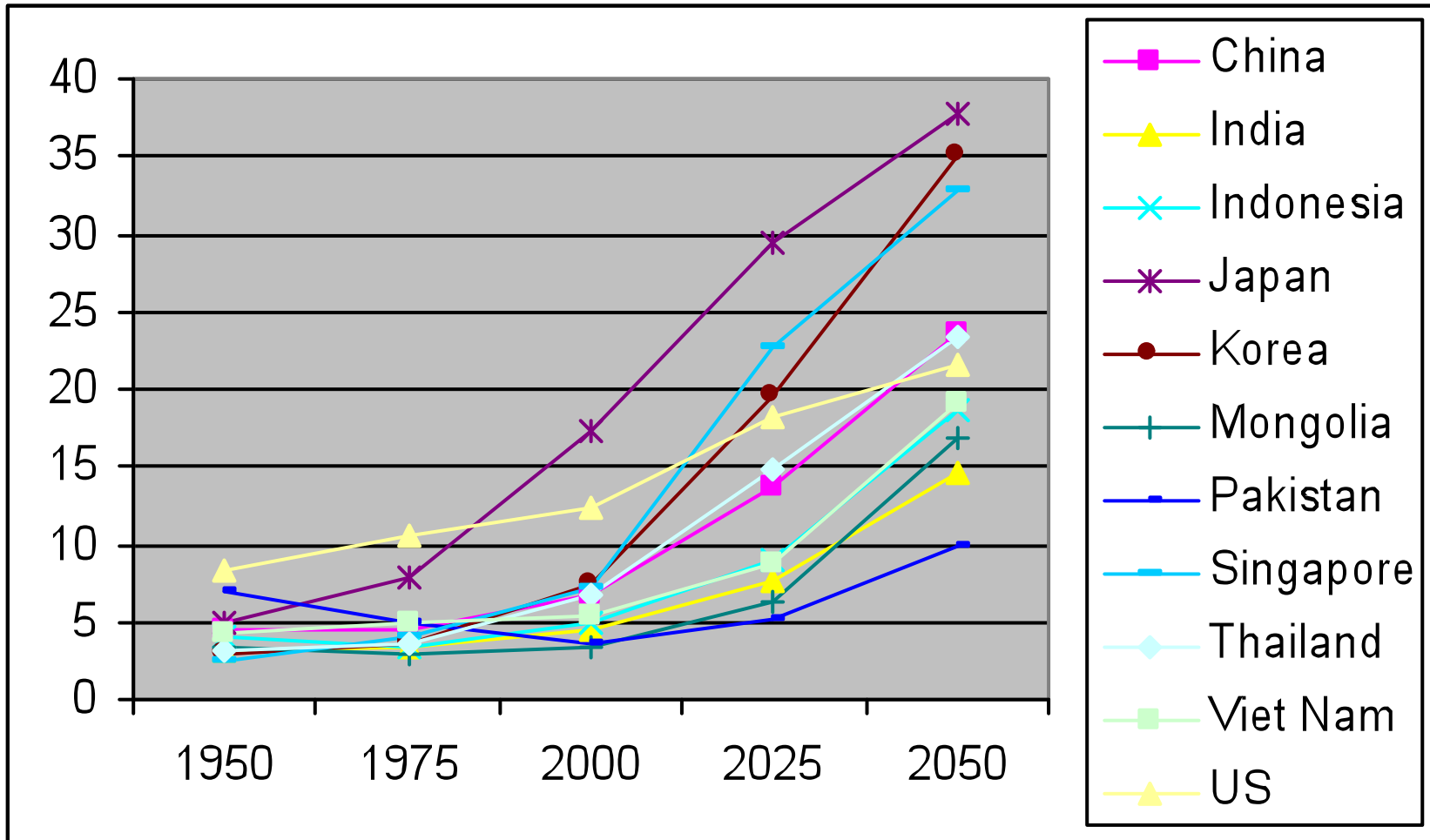
Percentage of Population Ages 20-64
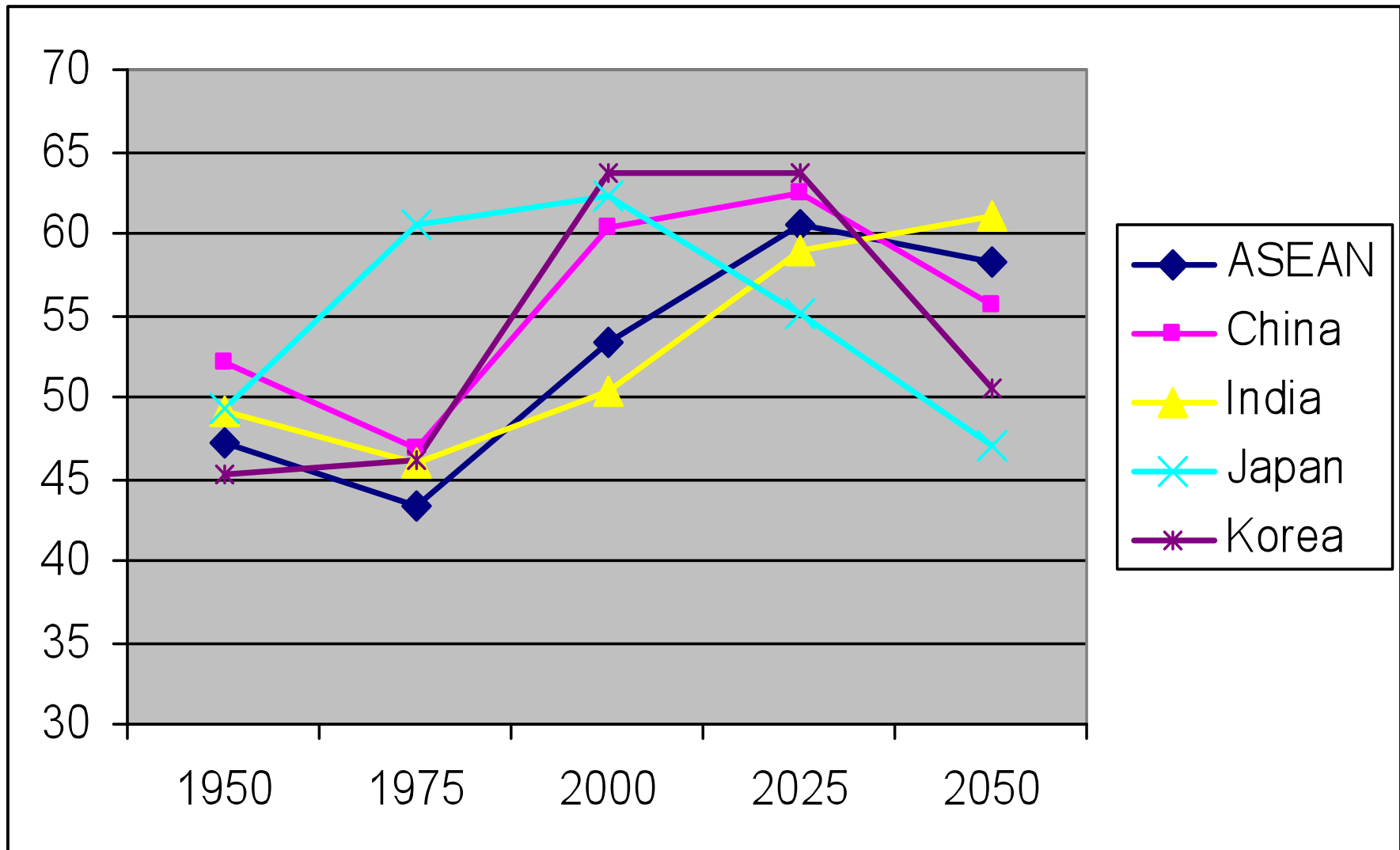
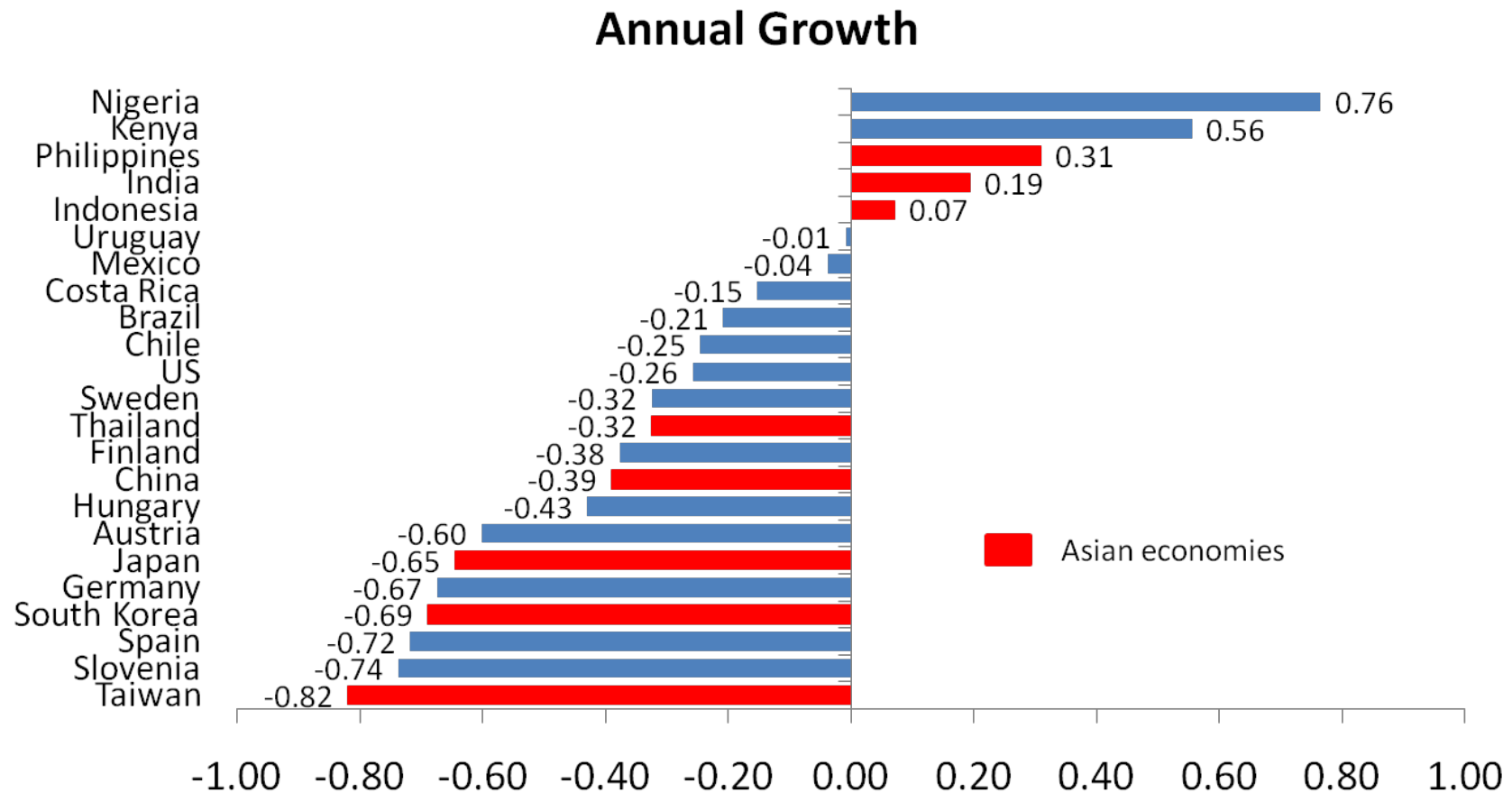# II. Economic and Social Implications

- Changes in population growth rate affects the size of the regional economy.

- Changes in population age structure is important since working age population supports young and old population.

- To understand the economic effect of demographic transition better, we need information on
  - Economic Lifecycle
  - Demographic Dividend

The Economic Lifecycle

Support Ratio (demographic dividend), Annual Growth, 2010-2050

Annual Growth

Country	Value
Nigeria	0.76
Kenya	0.56
Philippines	0.31
India	0.19
Indonesia	0.07
Uruguay	-0.01
Mexico	-0.04
Costa Rica	-0.15
Brazil	-0.21
Chile	-0.25
US	-0.26
Sweden	-0.32
Thailand	-0.32
Finland	-0.38
China	-0.39
Hungary	-0.43
Austria	-0.60
Japan	-0.65
Germany	-0.67
South Korea	-0.69
Spain	-0.72
Slovenia	-0.74
Taiwan	-0.82

Asian economies

The Economic Lifecycle

Reallocations from surplus to deficit ages required.

Consumption

Labor Income

Per Capita Consumption and Labor Income

Age

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Sources of Funding Consumption

- Labor Income
- Transfers
  - Familial Transfers
  - Public Transfers
    - Social Security System
- Asset-based Reallocations
  - Interest, dividends, rent from personal assets
  - Home
  - Dis-saving

Why support systems matter

- Support systems matter due to their implications for

  - Economic growth and saving (Mason and Lee, 2007: Mason, Lee, and Lee, 2010, etc)

  - Fiscal sustainability (Miller and Bravo, 2011)

  - Work and retirement (Lee and Ogawa, 2011)

  - Other policy related issues

   (e.g. intergenerational equity, healthcare provision, etc)

Research provides policy tools Ex) National Transfer Accounts♪
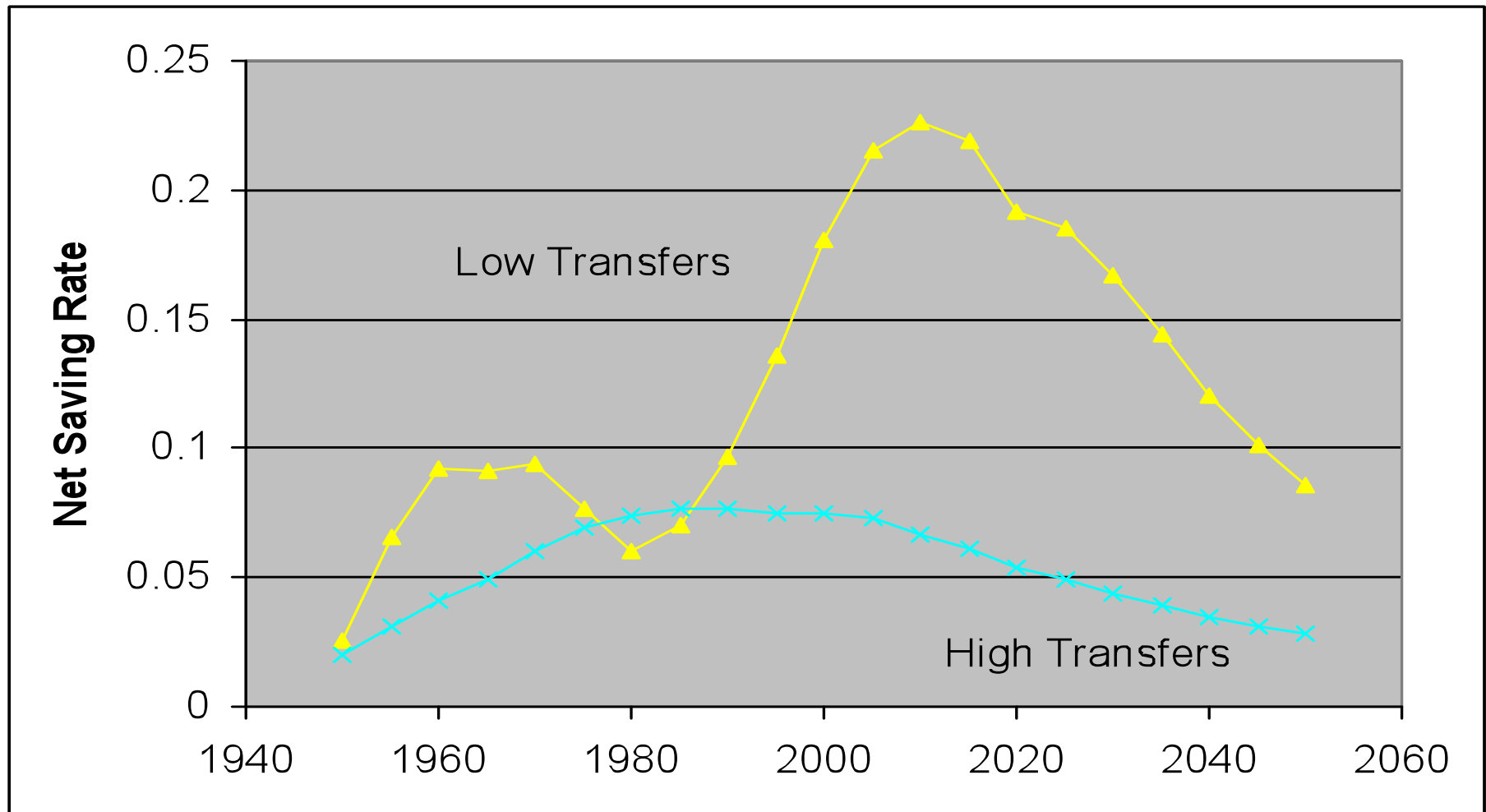
- Develop a system of economic accounts that can be used to study the macroeconomic implications of aging (Andrew Mason, Ronald Lee…)

Nation's Economy	Total (trillion)	Age 0	Age 1	…	Age 99
Consumption					
Pension ♪					
Labor income					

National Transfer Accounts Project Country Members
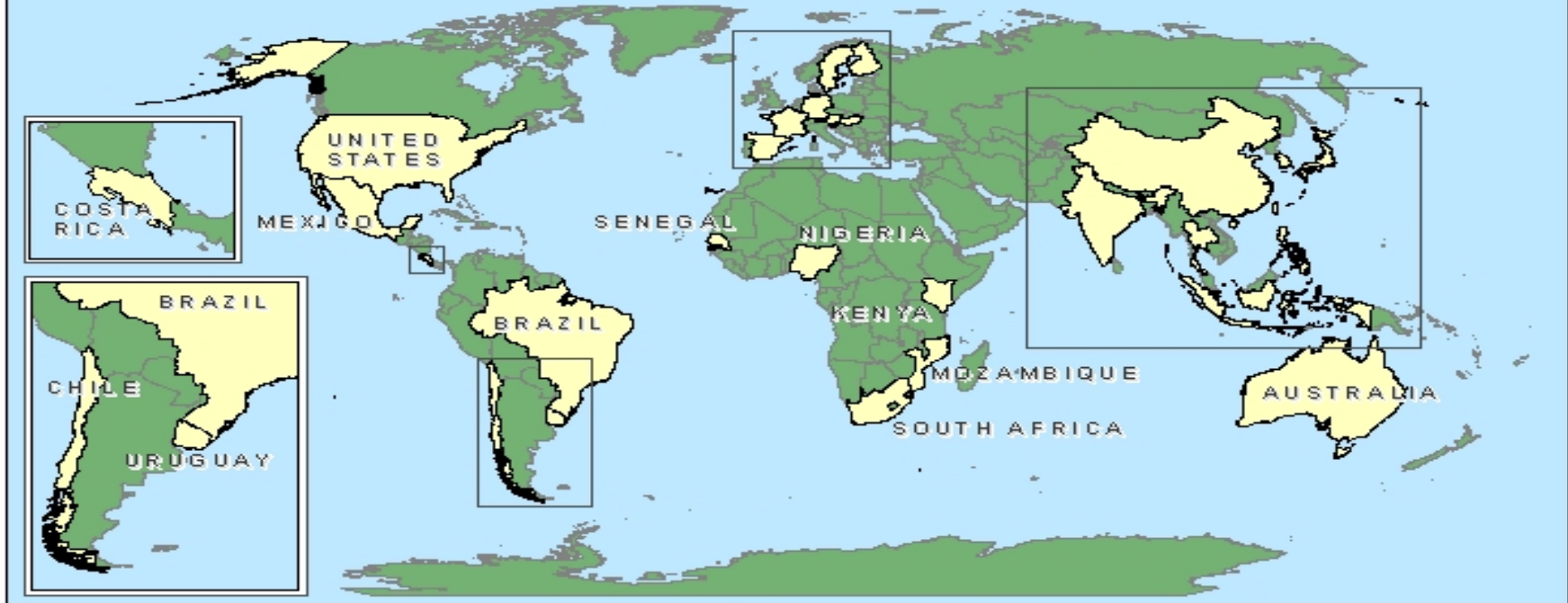
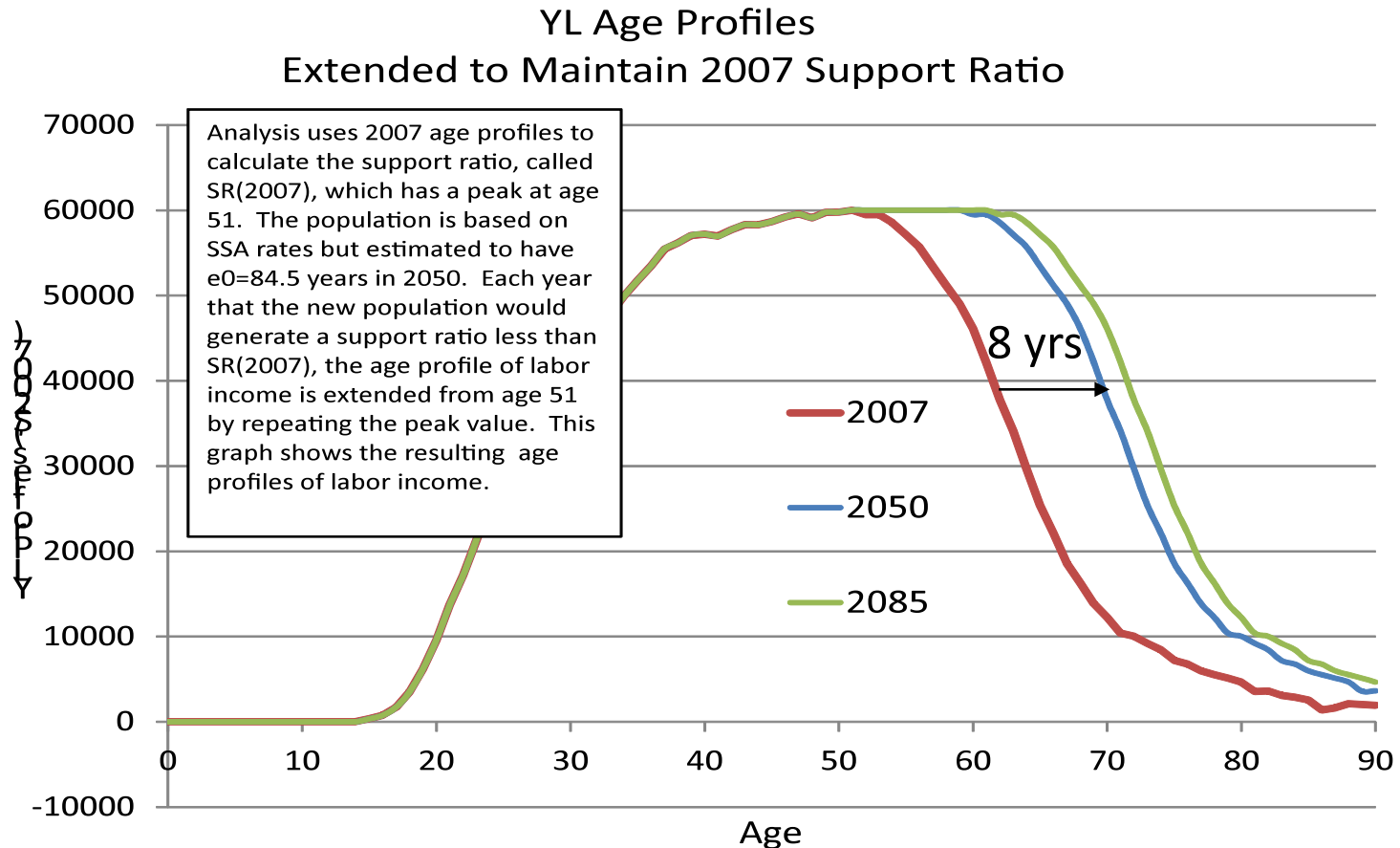# Simulated saving rate, ASEAN

III. Policy Implications

- Good policies
  - that do not undermine work and saving incentives, and promote growth
  - and that are financially sustainable
  - that are consistent with poverty reduction goals

- One set of policy implications are
  - economic policy that can best accommodate population policy
  - Influencing population change and age structure, per se.

# Revisit: Sources of Funding Consumption

- Labor Income (self-support)
- Transfers
  - Familial Transfers
  - Public Transfers
    - Social Security System
- Asset-based Reallocations
  - Interest, dividends, rent from personal assets
  - Home
  - Dis-saving

Working more is one option, but.. (e.g. United States)

YL Age Profiles
Extended to Maintain 2007 Support Ratio

Analysis uses 2007 age profiles to calculate the support ratio, called SR(2007), which has a peak at age 51. The population is based on SSA rates but estimated to have e0=84.5 years in 2050. Each year that the new population would generate a support ratio less than SR(2007), the age profile of labor income is extended from age 51 by repeating the peak value. This graph shows the resulting age profiles of labor income.

8 yrs

— 2007
— 2050
— 2085

Age

Source: US National Transfer Accounts, R. Lee and G. Donehower, 2011

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Labor income for elderly has also been decreasing over time
(e.g. Taipei, China 1977-2003)
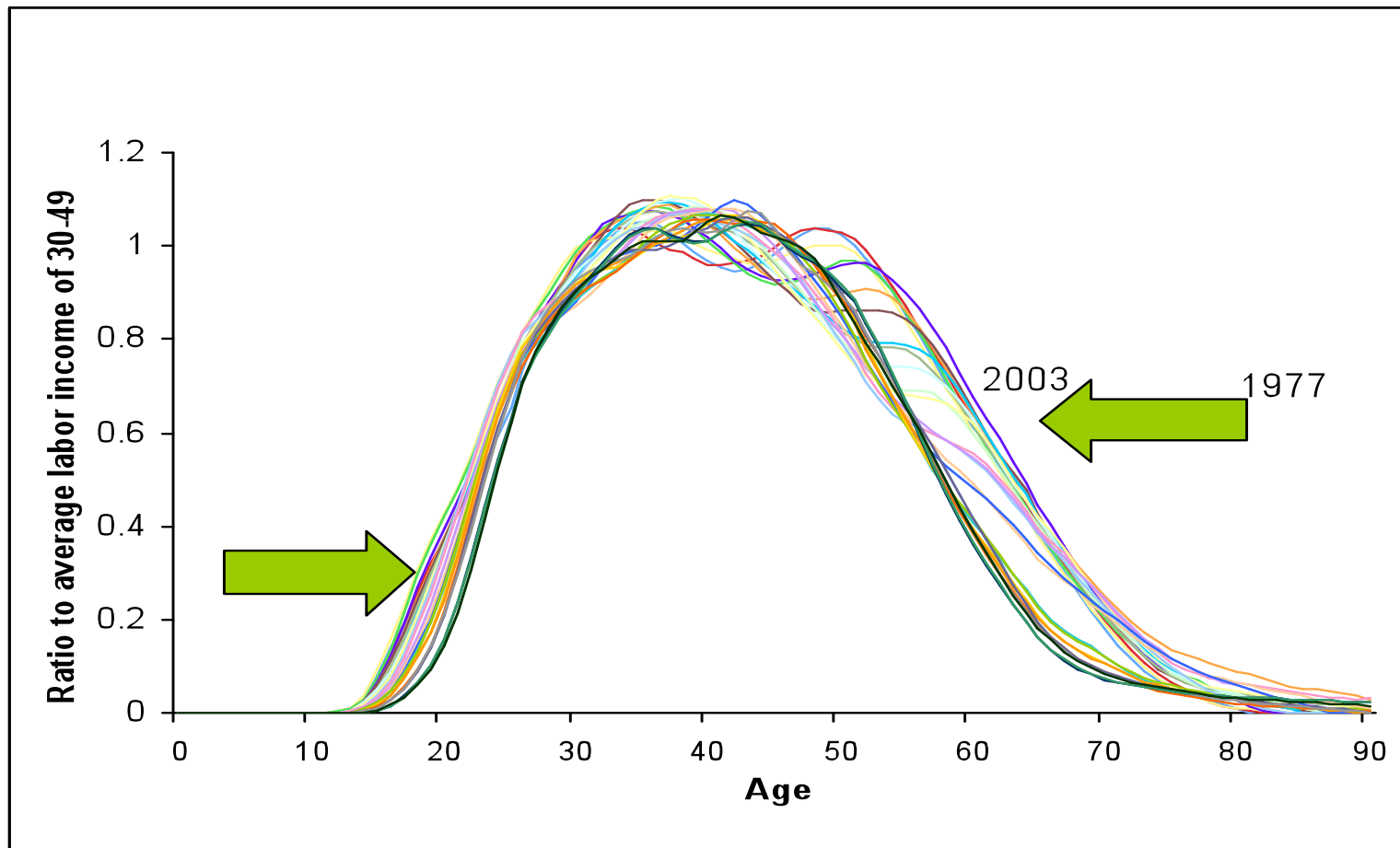
That is,

- Significant lifecycle deficits at old ages are allowed only if the elderly can depend on transfers and asset-based flows

- Priority is to tap the productive potential of older workers and women
  - Human capital investment; older workers and women may be especially vulnerable when there are general downturns in the economy.
  - Remove rigidity in the labor market and wage system.

Relying on family

- Family has been important support systems in some countries in Asia.

- But even in Asia, it is deteriorating.

- Not clear whether young people want to provide this and older people want to rely on this.

Relying on public support

- Merits
  - A politically acceptable means of providing an economic safety net.
  - Allow risk pooling, income redistribution

- Issues
  - May dictate early retirement
  - Unsustainable if not carefully designed
  - Administrative, and political issues, etc.
  - Discourage saving

Relying on assets and savings (asset-based reallocation)

- Implications for capital accumulation in aging populations
  - The proportion of wealth-holding elderly is higher.
  - If need is met by asset accumulation, then population aging raises asset income and perhaps labor productivity.
  - But if people expect to be supported by transfers when they are old, this effect is muted.

Population Policy

- Some Asian countries are becoming more interested in pronatalist population policies.
- The experiences with such policies are not entirely satisfactory
  - Japan's TFR continue to decline from 1.29 in 2003 to 1.25 in 2005
  - Although the fertility may have declined even more without those measures the incentives appear to be insufficient to change young couple's reproductive behavior.
  - There are dangers in placing burden on employers too.

Role of Immigration

- Immigration may attenuate the pace of aging

- So far, immigration has played a relatively modest role in determining population growth and age structure.
  - In particular, some Asian countries have restrictive immigration policies

- Policies and attitudes towards immigration may change as populations age and labor force growth slows or even turns negative.

IV. Policy Recommendations

1. Establish a process for monitoring and reporting on impacts of demographic change on key socio-economic indicators.

2. Increase awareness among policy-makers and public.

Policy Recommendations (cont'd)

3. Develop financial sectors.

4. Remove labor market barriers and enhance productivity for older people and women.

Policy Recommendations (cont'd)

5. Strengthen and restructure human capital investment for higher productivity and better employability.

6. Maintain a sustainable public policy.

7. Design a system to help people make good financial decisions.

Policy Recommendations (cont'd)

8. Build regional cooperation and integration.

9. Population policy

10. Add!

Conclusions

- ## Population matters

  - Population size

  - Population age structure

    - Demographic dividend

    - Reallocation system (asset-based or transfers)

- ## Policy matters

  - Implication for growth; but underdeveloped financial markets may limit investment opportunities.

  - Early policy response is essential to realize the demographic dividend.

Thank you!