The economic implications of changing age structures

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The first demographic dividend

- *The transition to low fertility leads to a period during which the population of working age increases faster than the consuming population.*
- *This "first demographic dividend" boosts per capita income.*

The first dividend is transitory

- *The "first demographic dividend" is transitory because, eventually, the population of working age ceases to increase.*
- *When this happens, income per consumer drops, a cause of concern.*

The second demographic dividend

- *Lower mortality produces longer lives.*
- *As people live longer, they need to accumulate more wealth to defray consumption in old age*

The second dividend is permanent

- *The higher the proportion of older persons, the higher wealth per capita.*

- *With more wealth per worker, productivity and asset income increase,leading to a long-lasting "second demographic dividend".*

Conditions leading to the second dividend

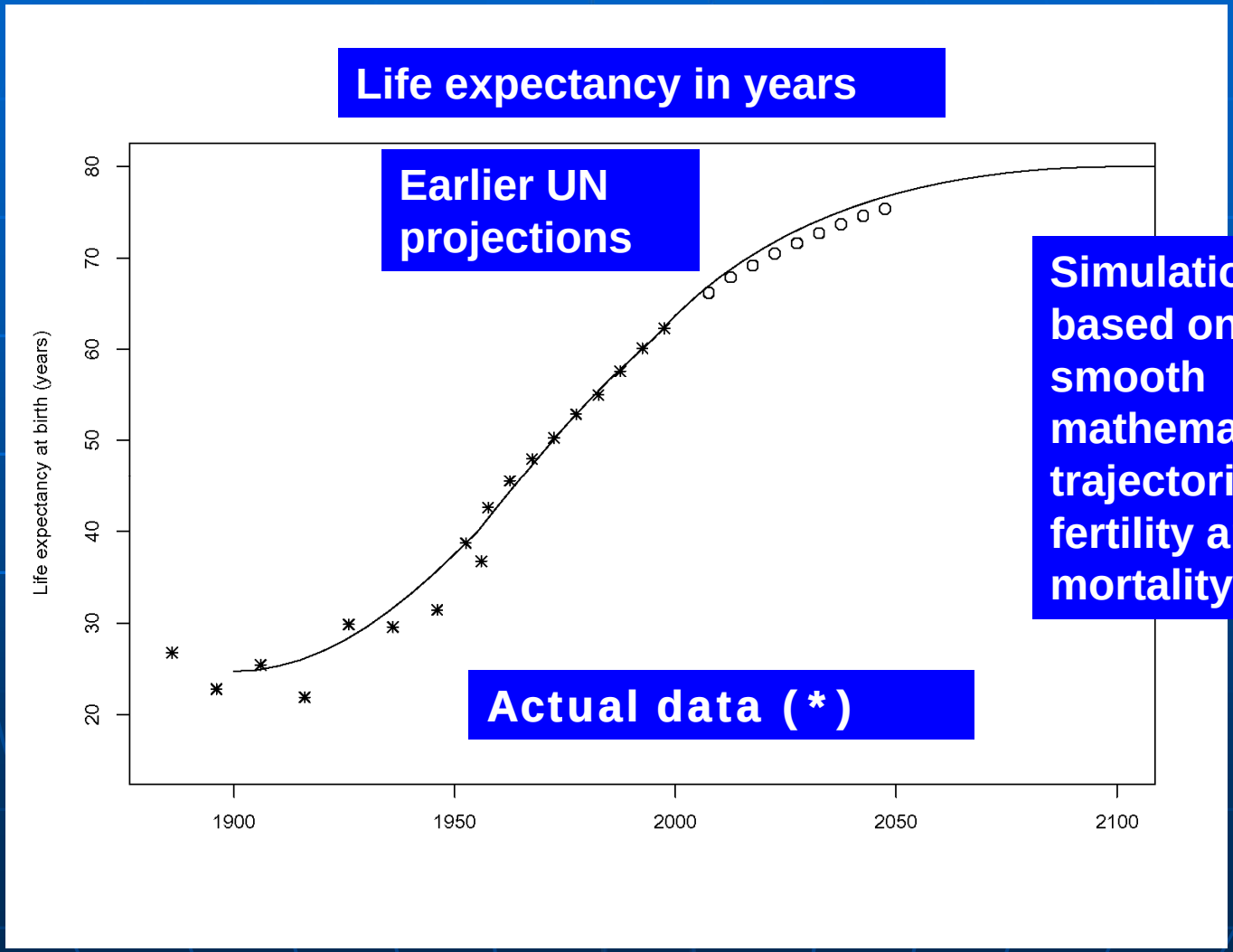
- *To realize the second dividend, wealth must be accumulated as savings or assets.*
- *To the extent that older persons depend on family transfers or public pensions, the second dividend is reduced.*

Crucially

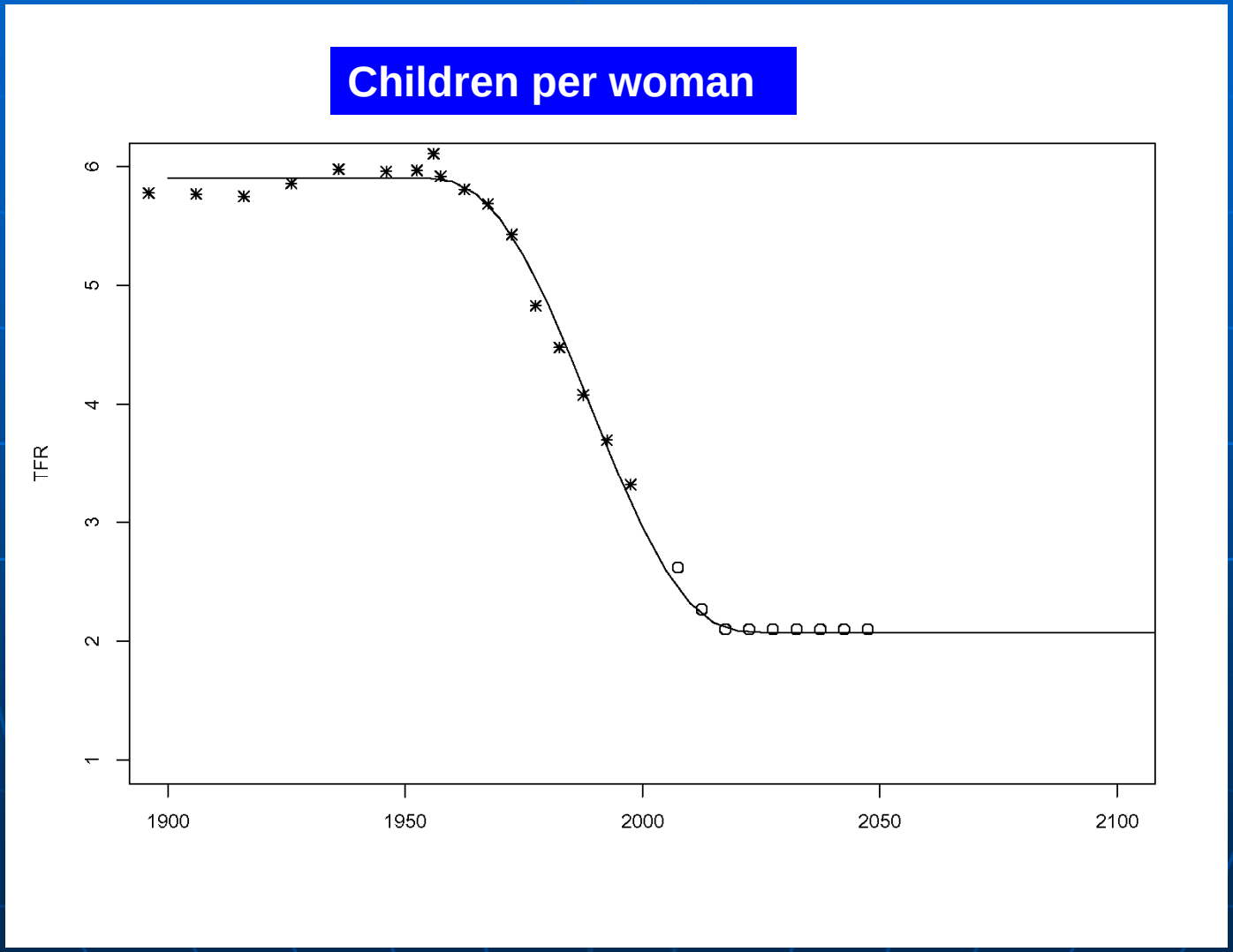
the economic effects of population aging depend on institutions and policies.

THE CASE OF INDIA

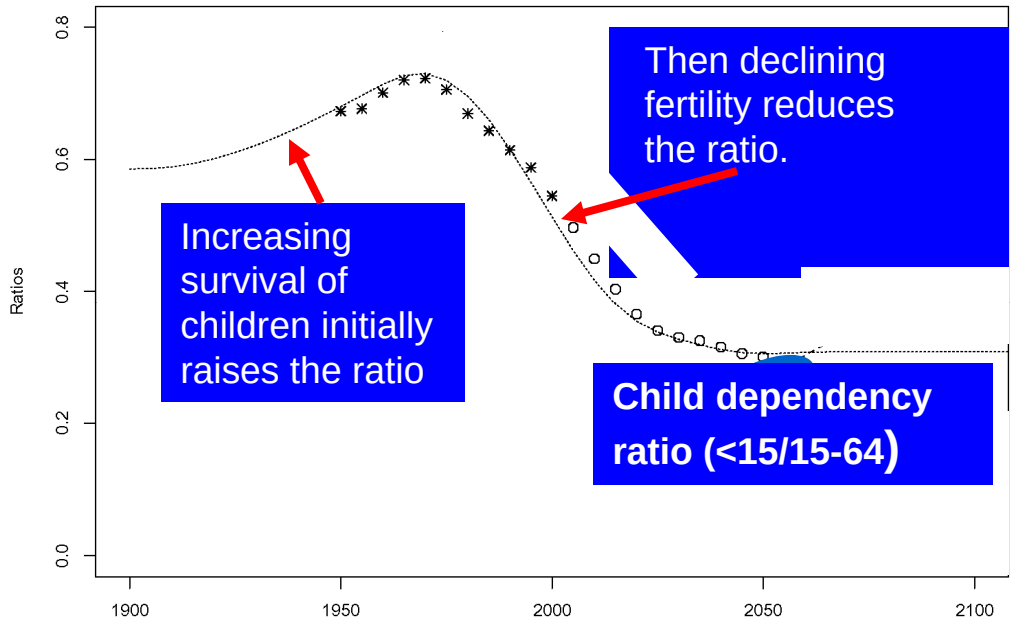
Indian life expectancy began to rise around 1900, here simulated to go from 24 to 80 years.



Indian fertility began to fall around 1960, here simulated to go from 6 to 2.1 births.

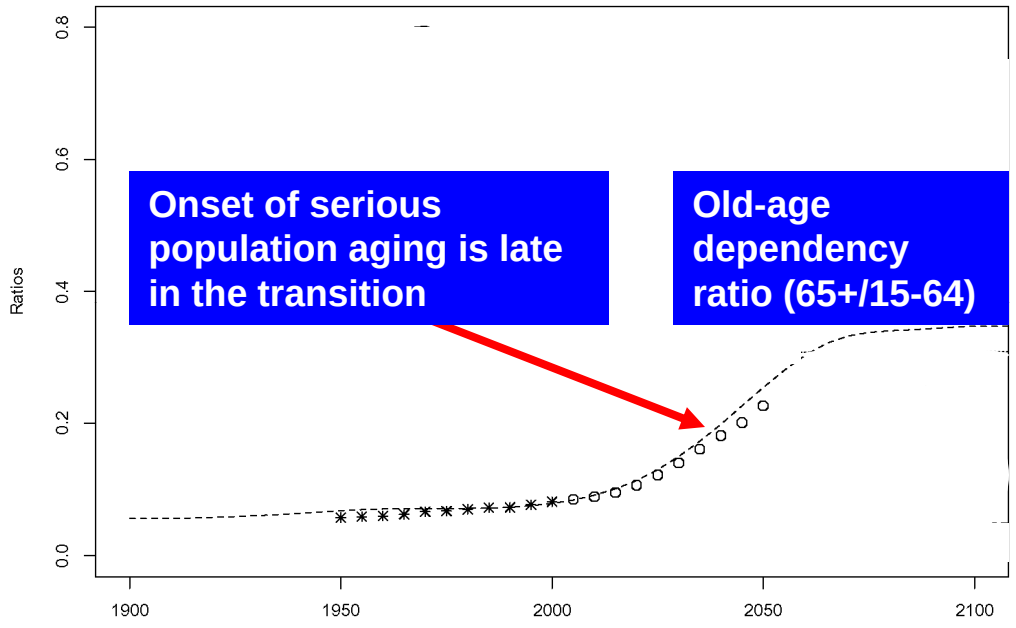


Changes in the child dependency ratio



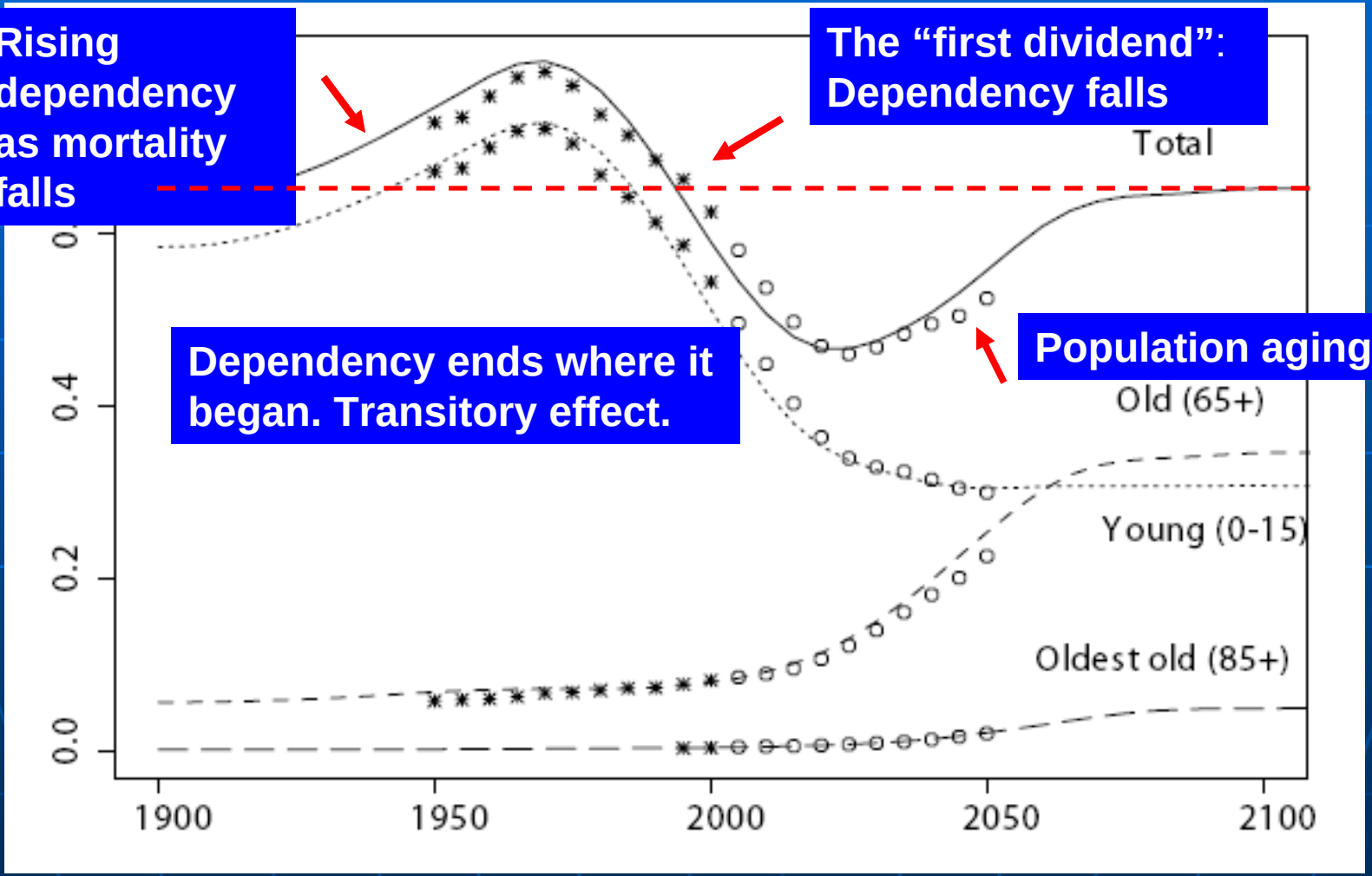
Once fertility begins to decline, the child dependency ratio falls.

Changes in the old-age dependency ratio



- Serious population aging begins more than a century after the transition starts.
- The old-age dependency ratio rises rapidly, by a factor of five or six.

Variation in the total dependency ratio



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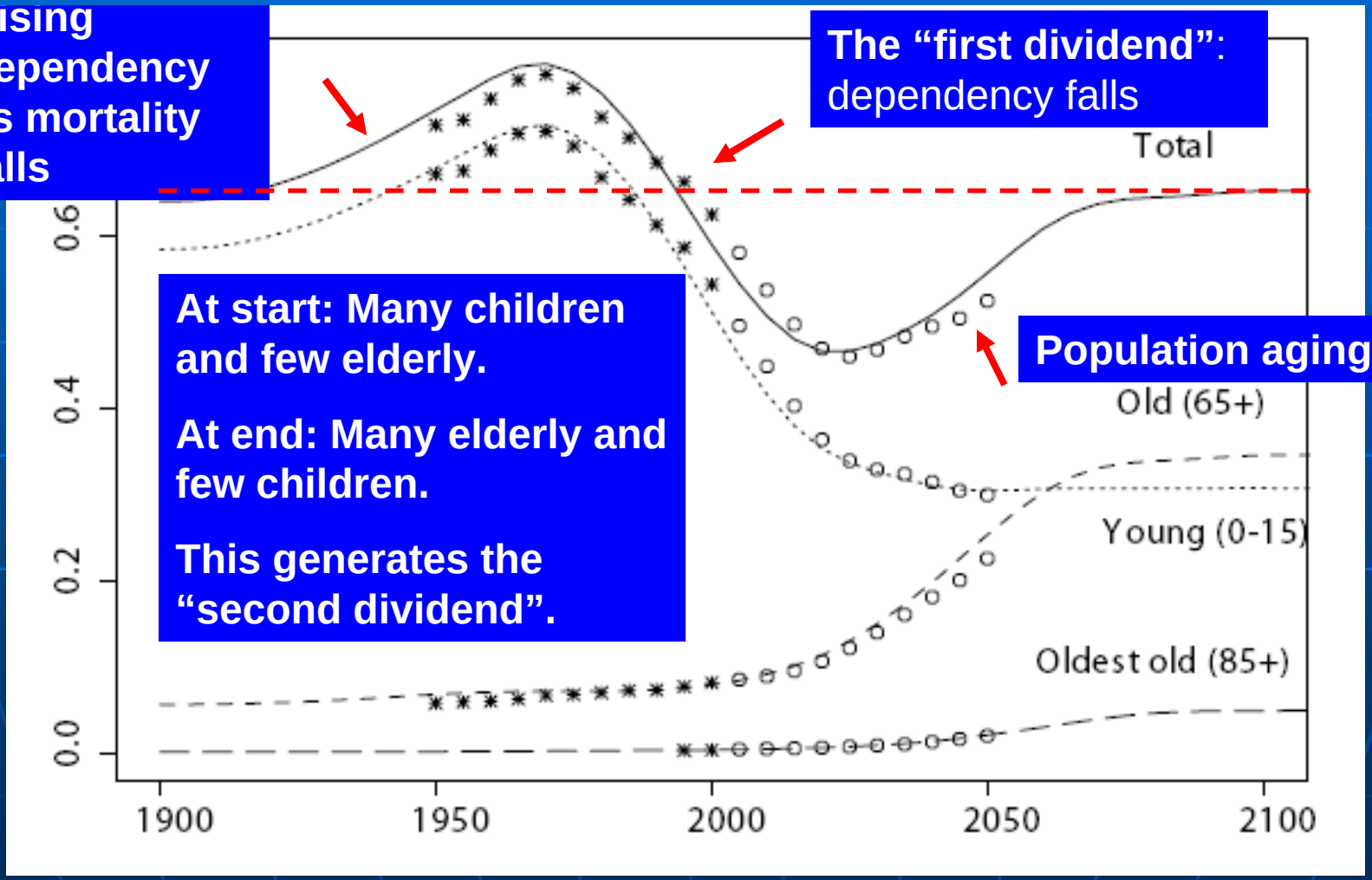
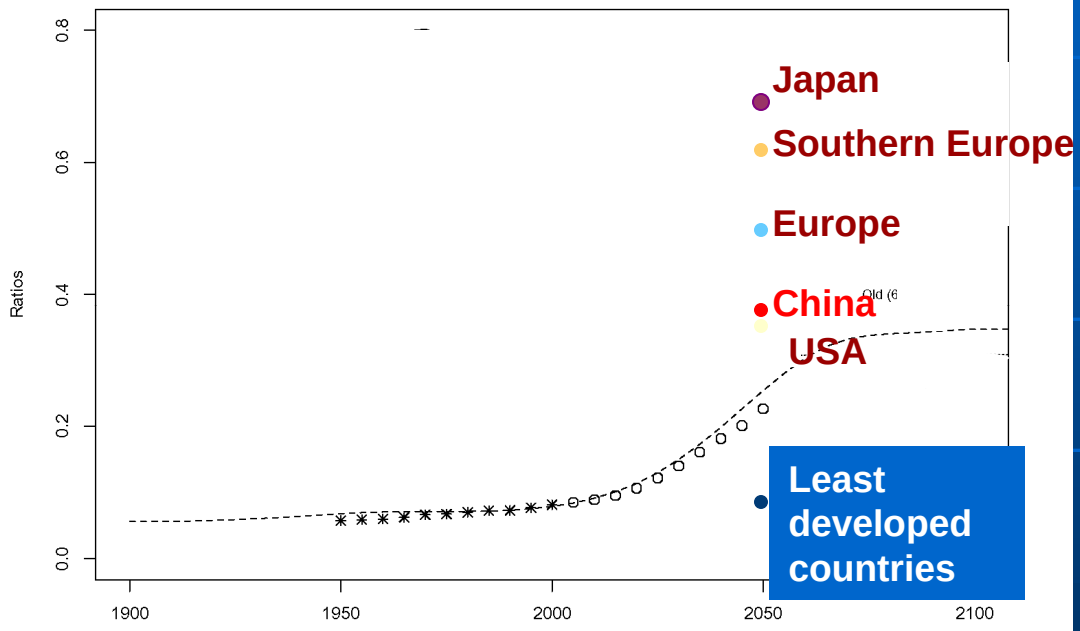


There is great variation in projected old age dependency ratios for 2050

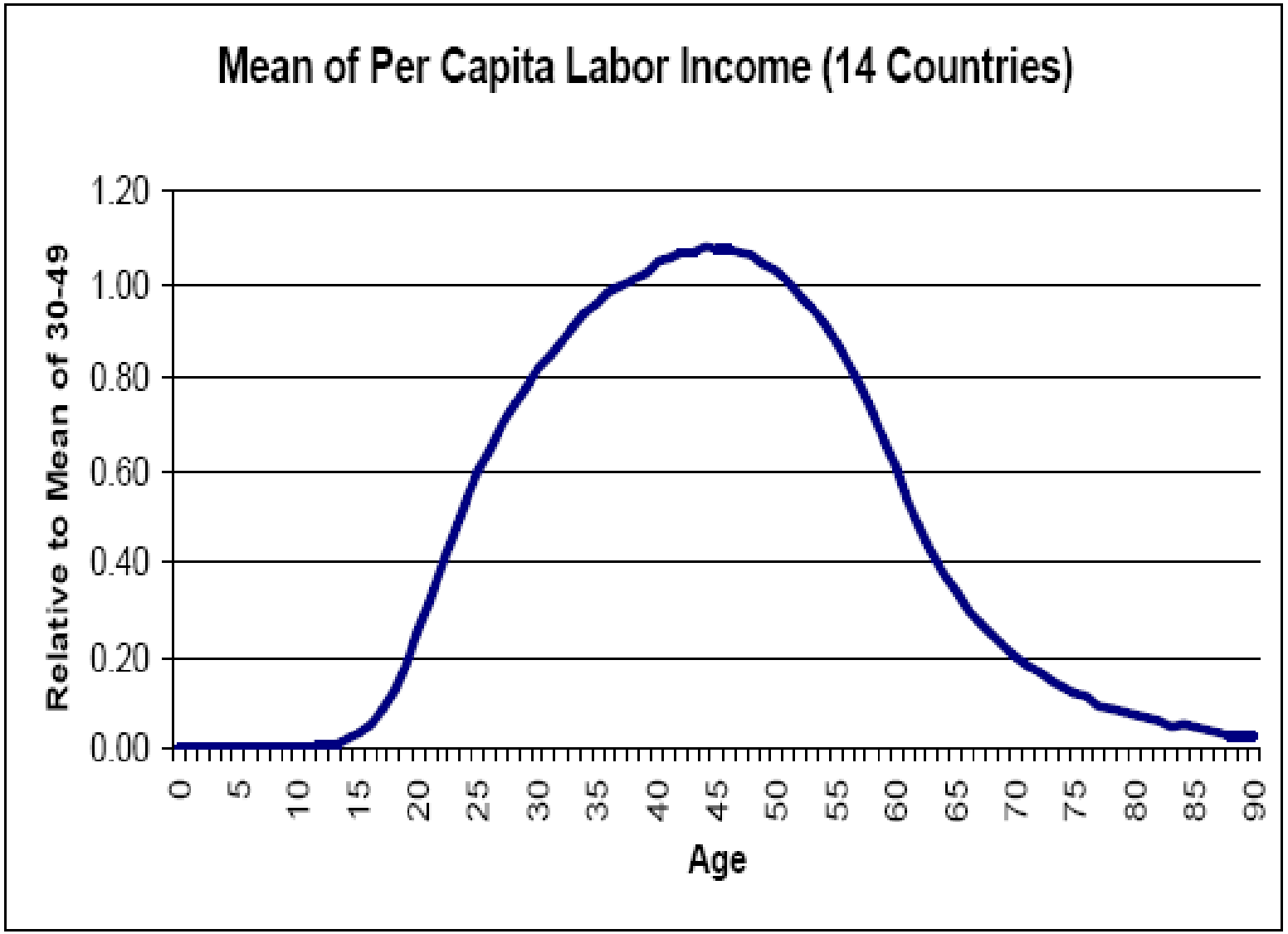


- Ratio in Southern Europe projected to be 6 times as high as in the least developed countries.
- Differences are due to position in transition, baby booms and busts, and fertility below replacement.

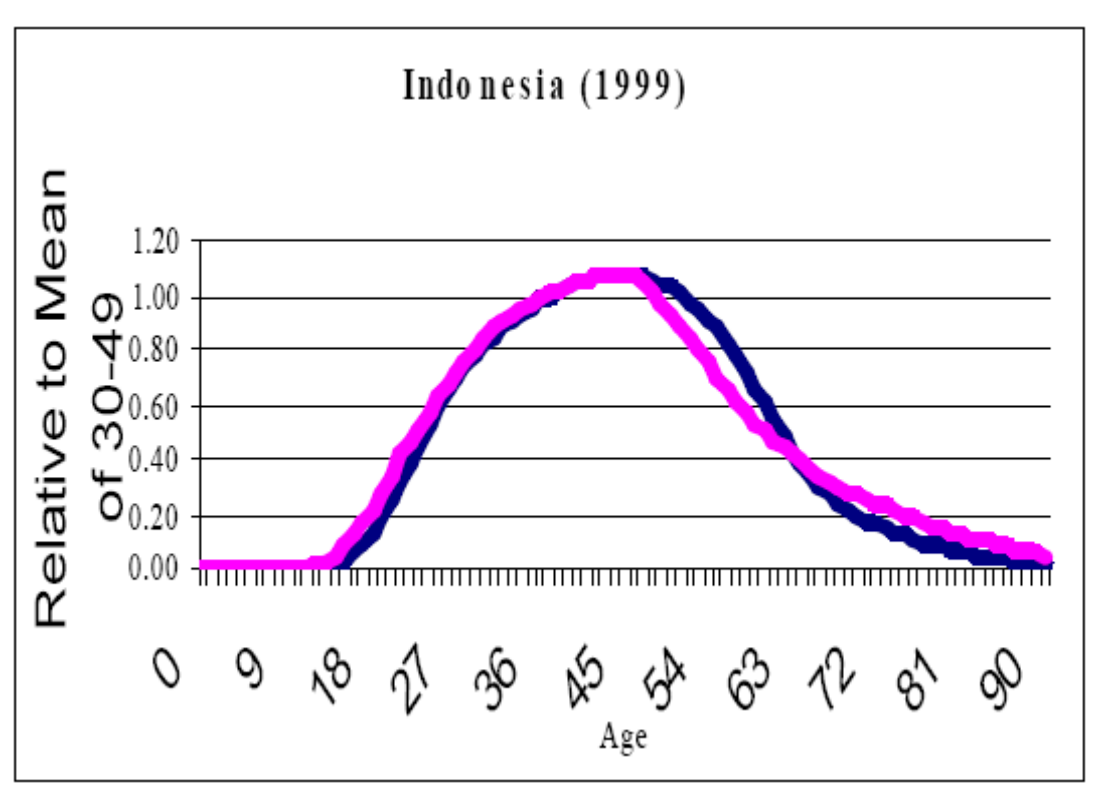
LABOUR INCOME AND CONSUMPTION

How labour income and consumption vary by age

- *To understand the economic implications of age structures, we need to know how labour income and consumption vary with age.*
- *The National Transfer Accounts project (NTA) is estimating these for many countries.*



Source: Sang-Hyop Lee, report on NTA labor income data



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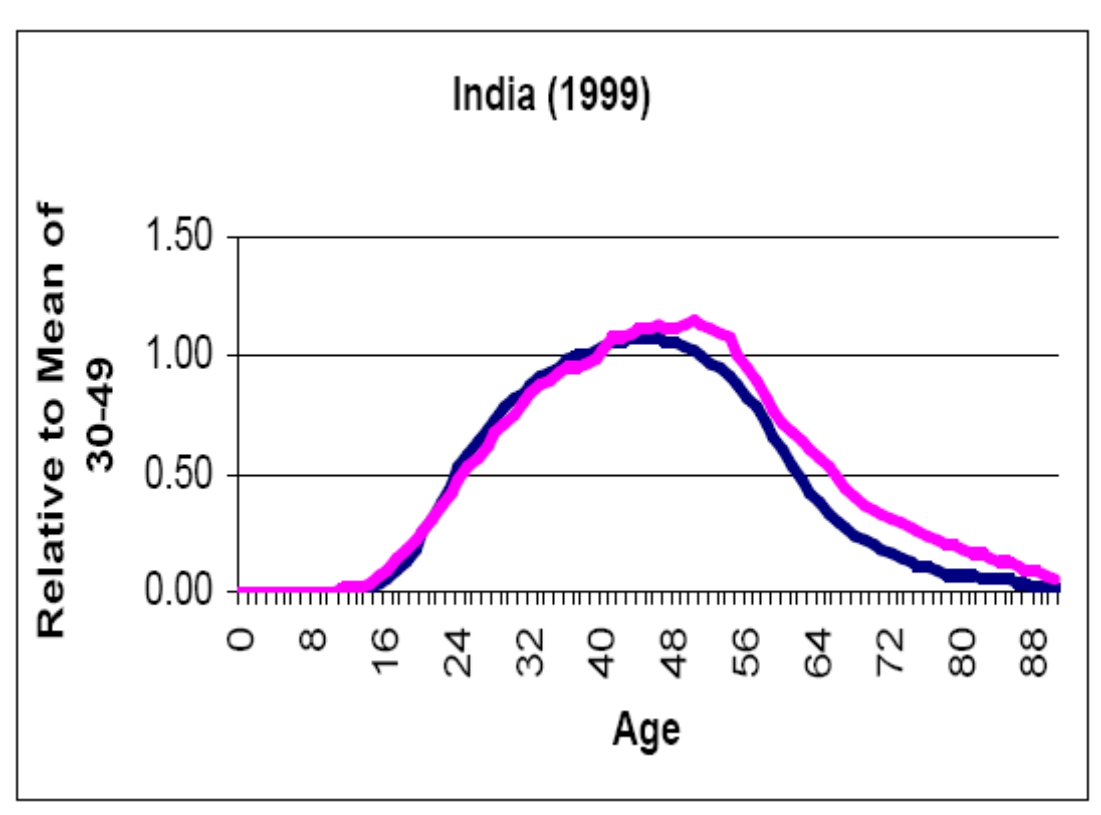

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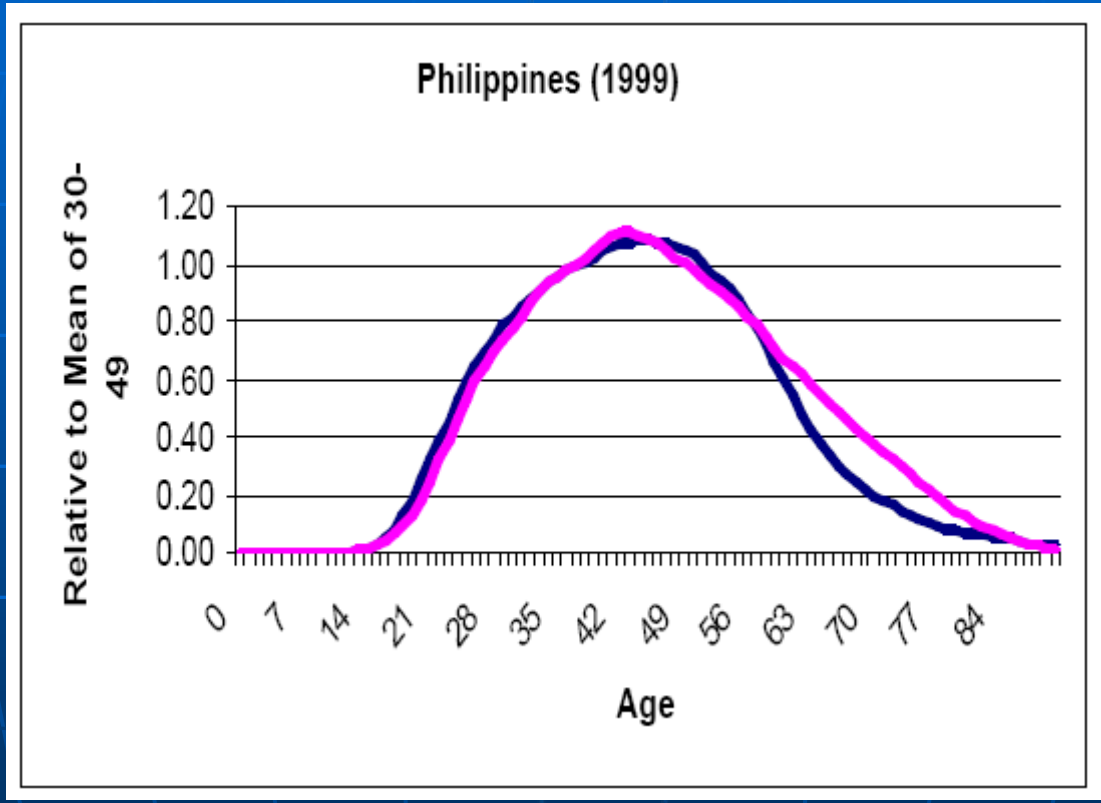

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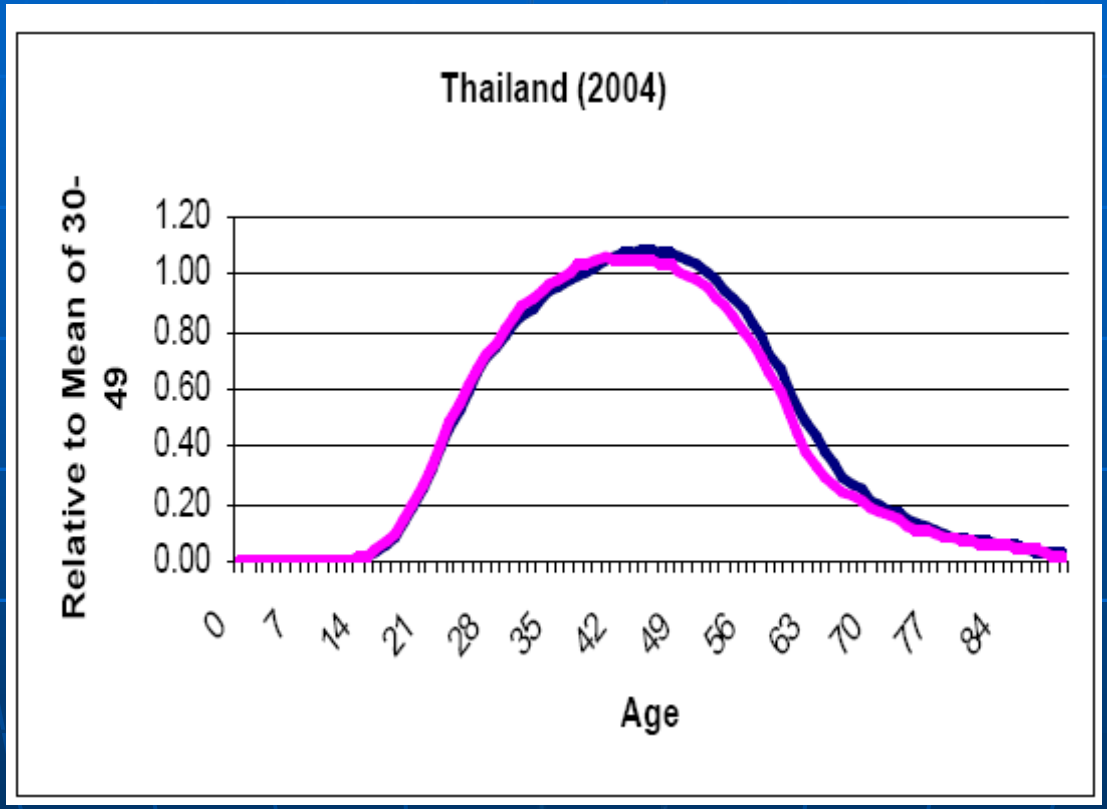

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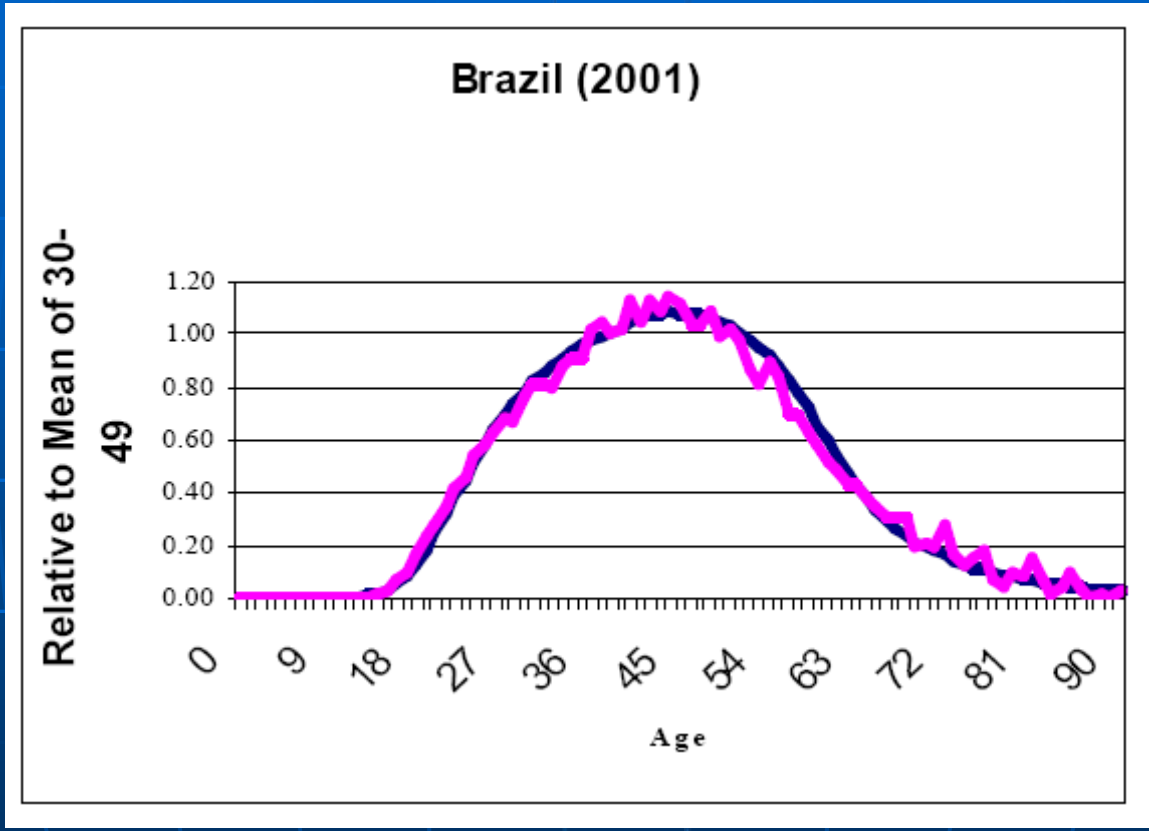

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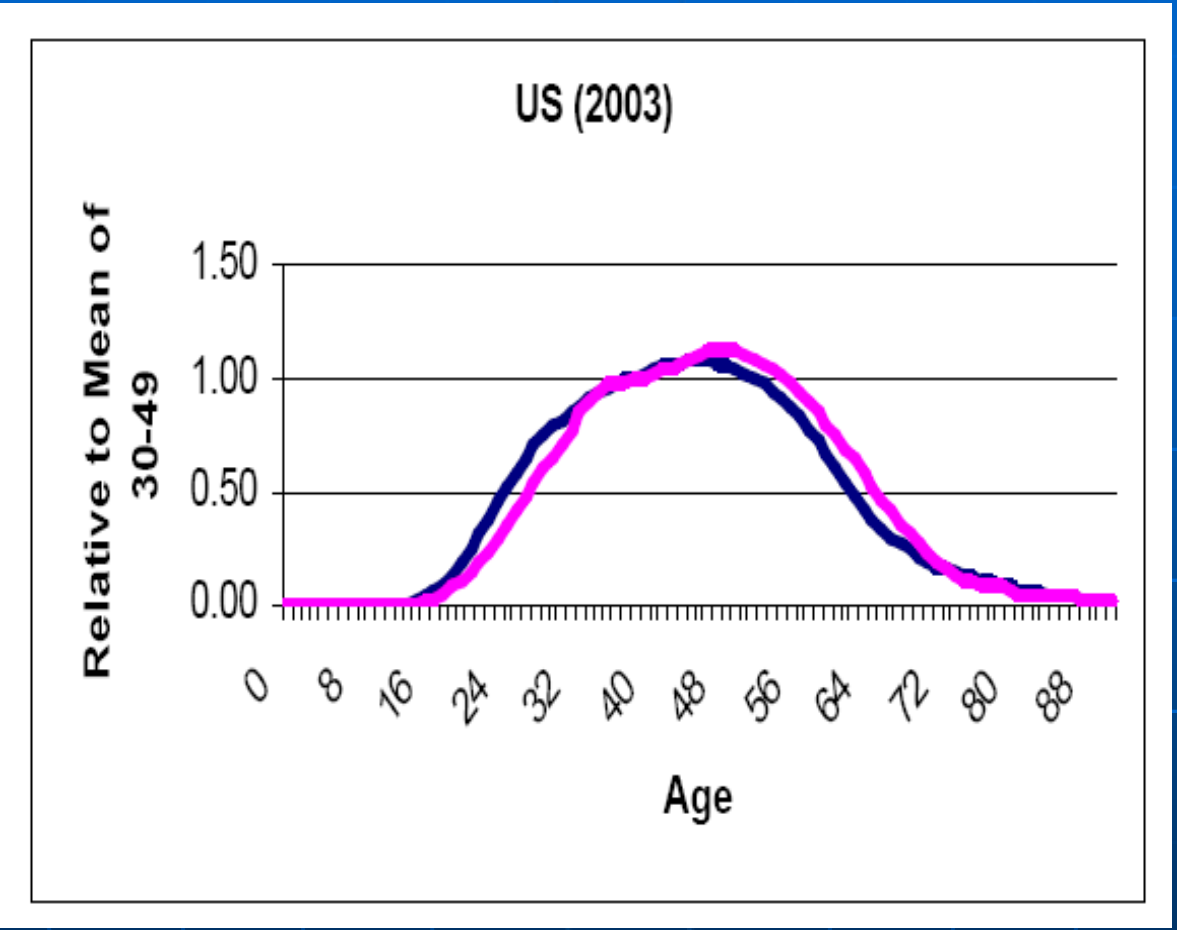

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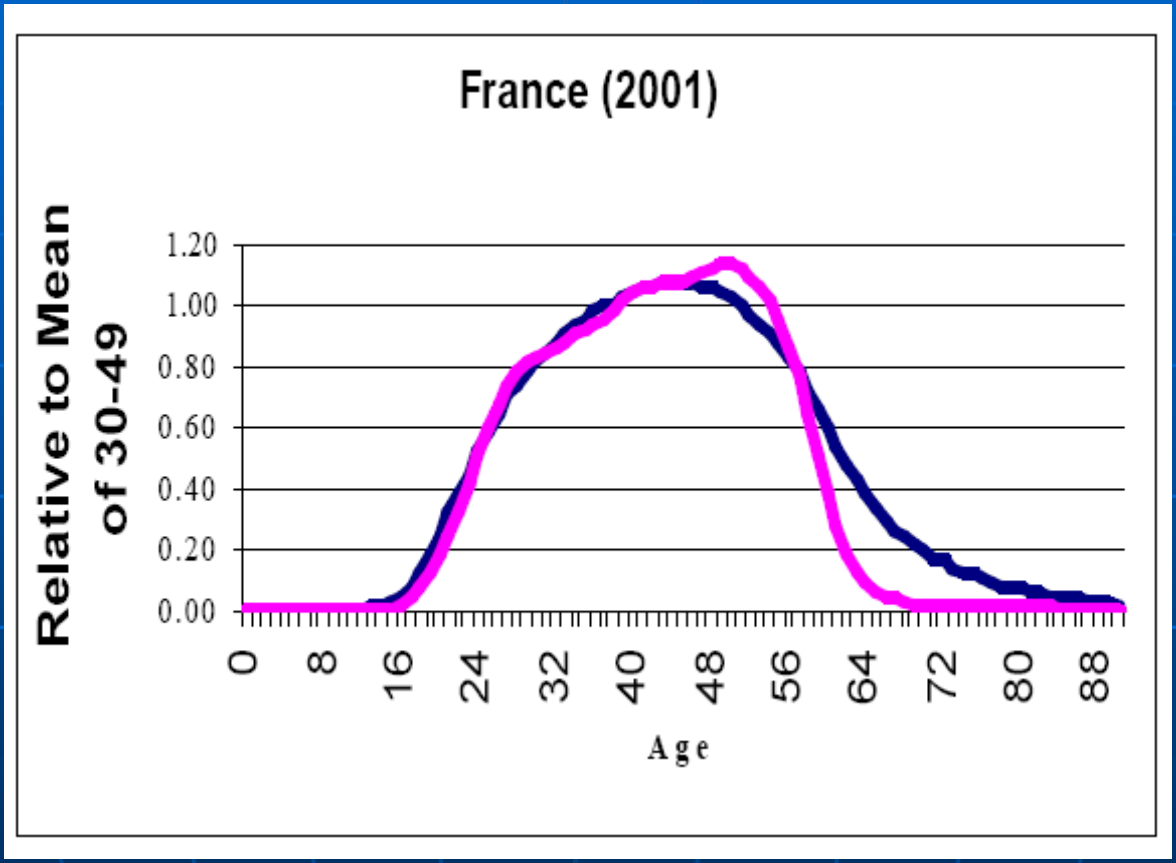

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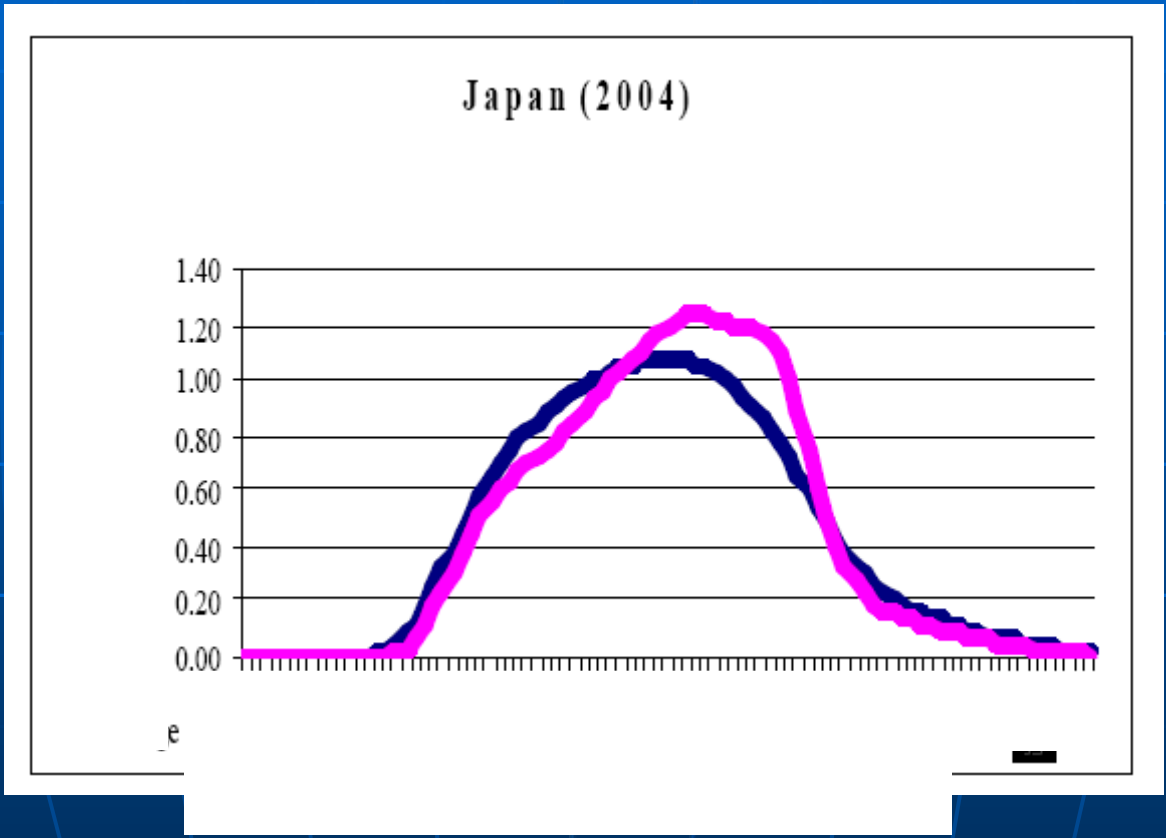

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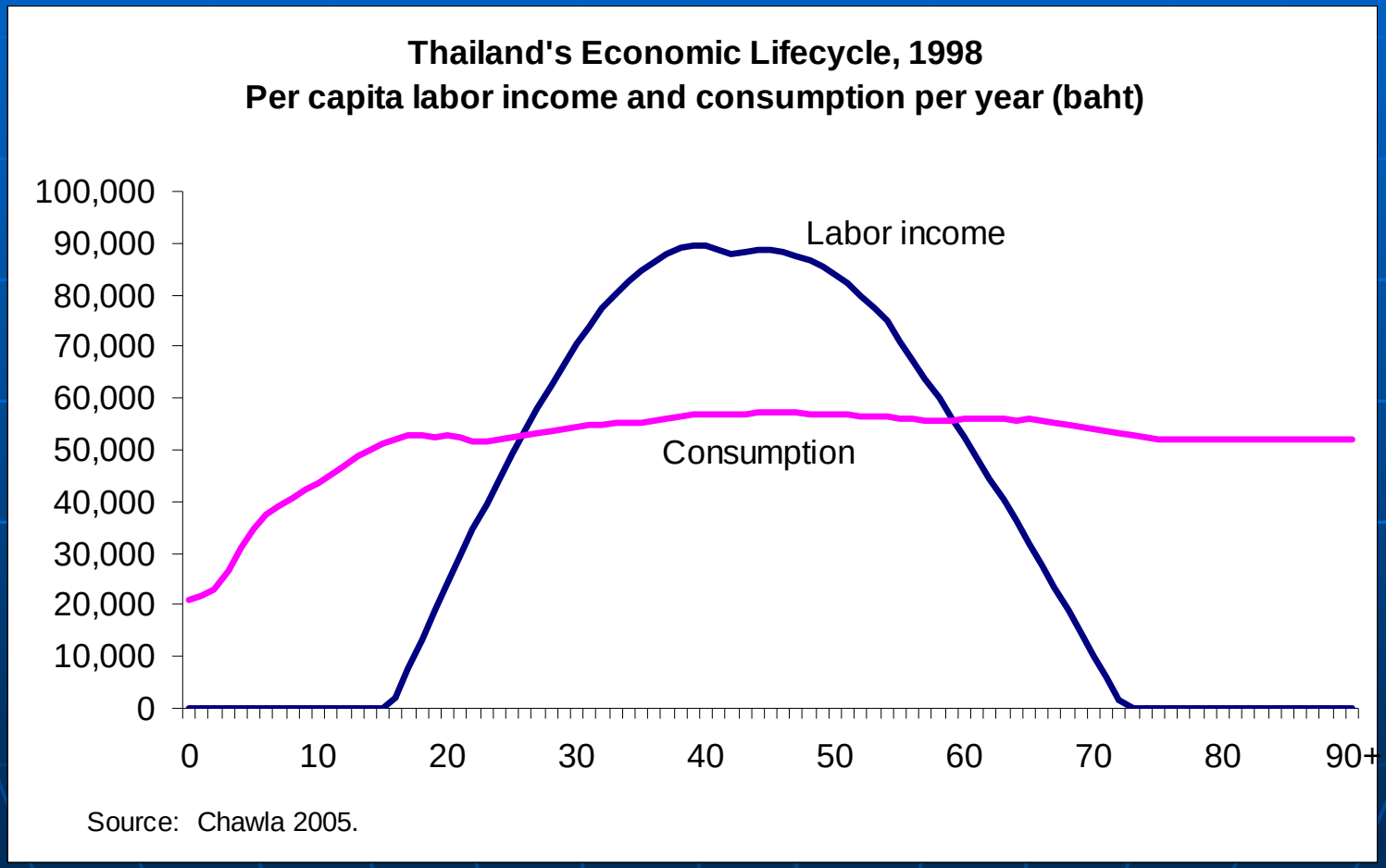
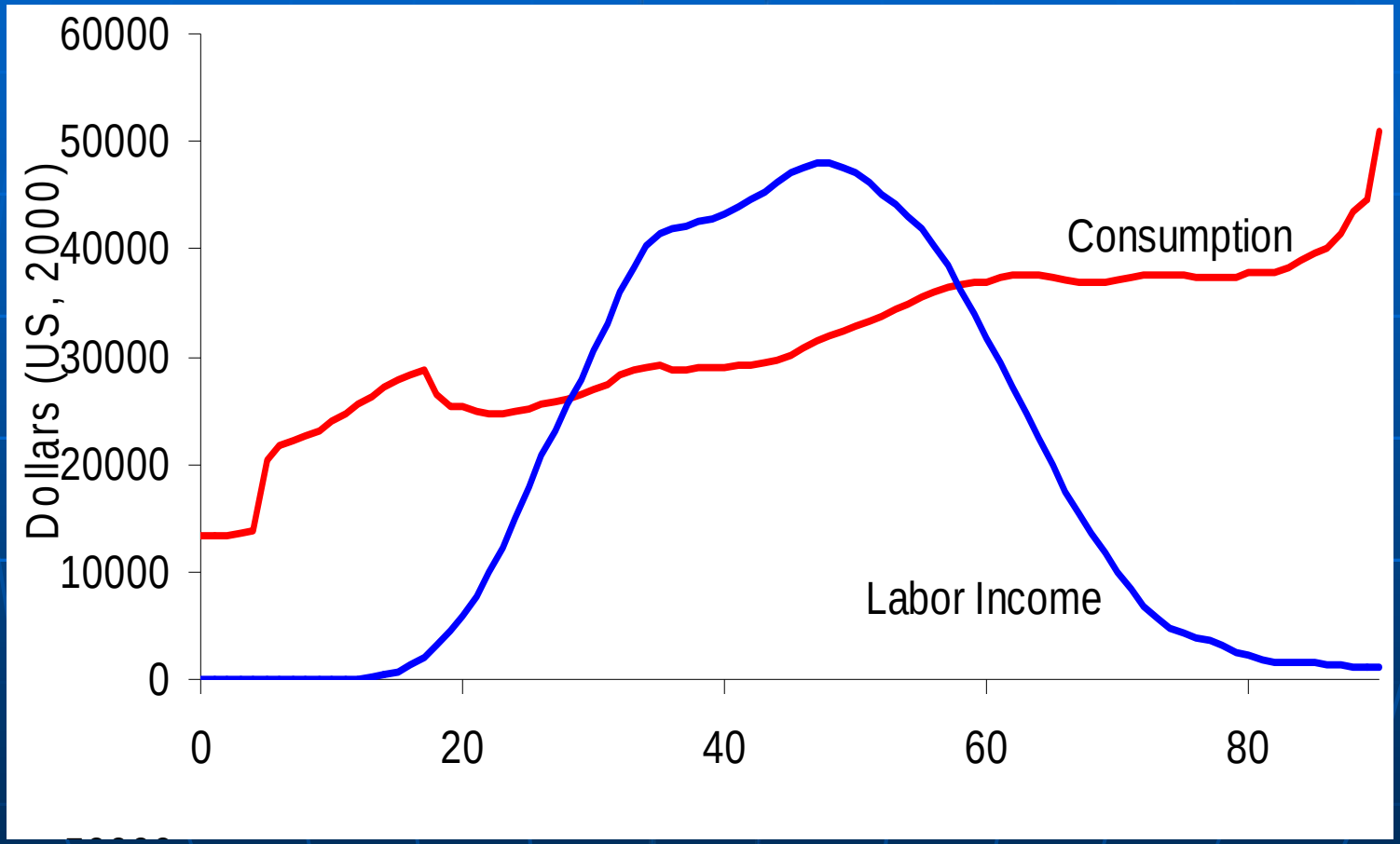
Consumption by age

- *The National Transfer Accounts include private household consumption and also the cost of publicly provided education, health care, and other items.*

A typical developing country: Thailand, 1998



Some developed countries have high consumption in old age (USA, 2003)



Source: National Transfer Account data.

SUPPORT RATIOS AND THE SECOND DIVIDEND

Economic consequences of age distribution: Support ratios

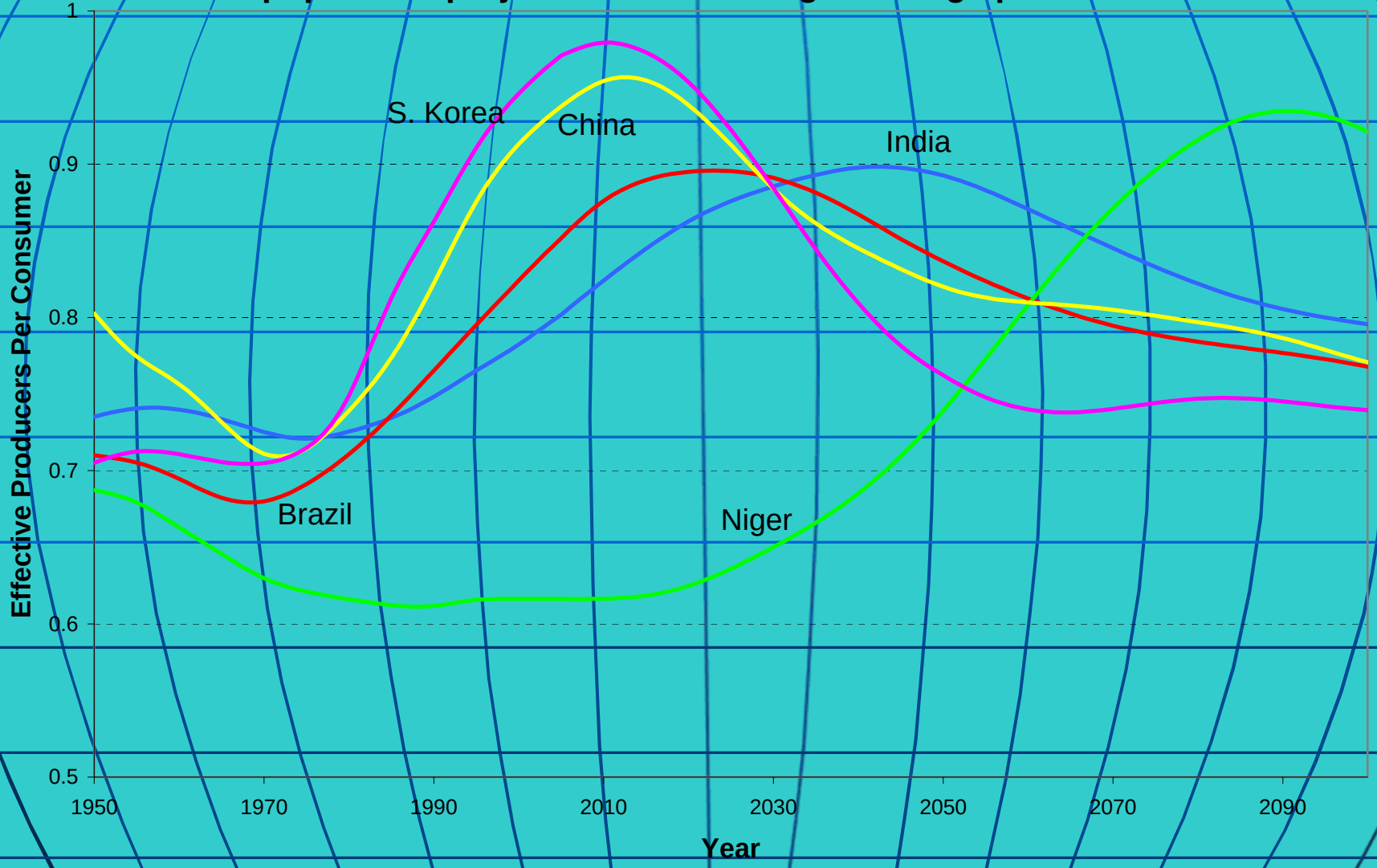
- *The relation between workers and consumers in a population is summarized by the support ratio*

- *The support ratio is the population times labour income divided by the population by consumption at each age*

The support ratio

- *A high support ratio is favourable.*
- *The transition to low fertility produced a increasing support ratio during the period of the "first demographic dividend".*

Support Ratios for Five Less Developed Countries, 1950-2100, Based on UN population projections and average LDC age profiles from NTA



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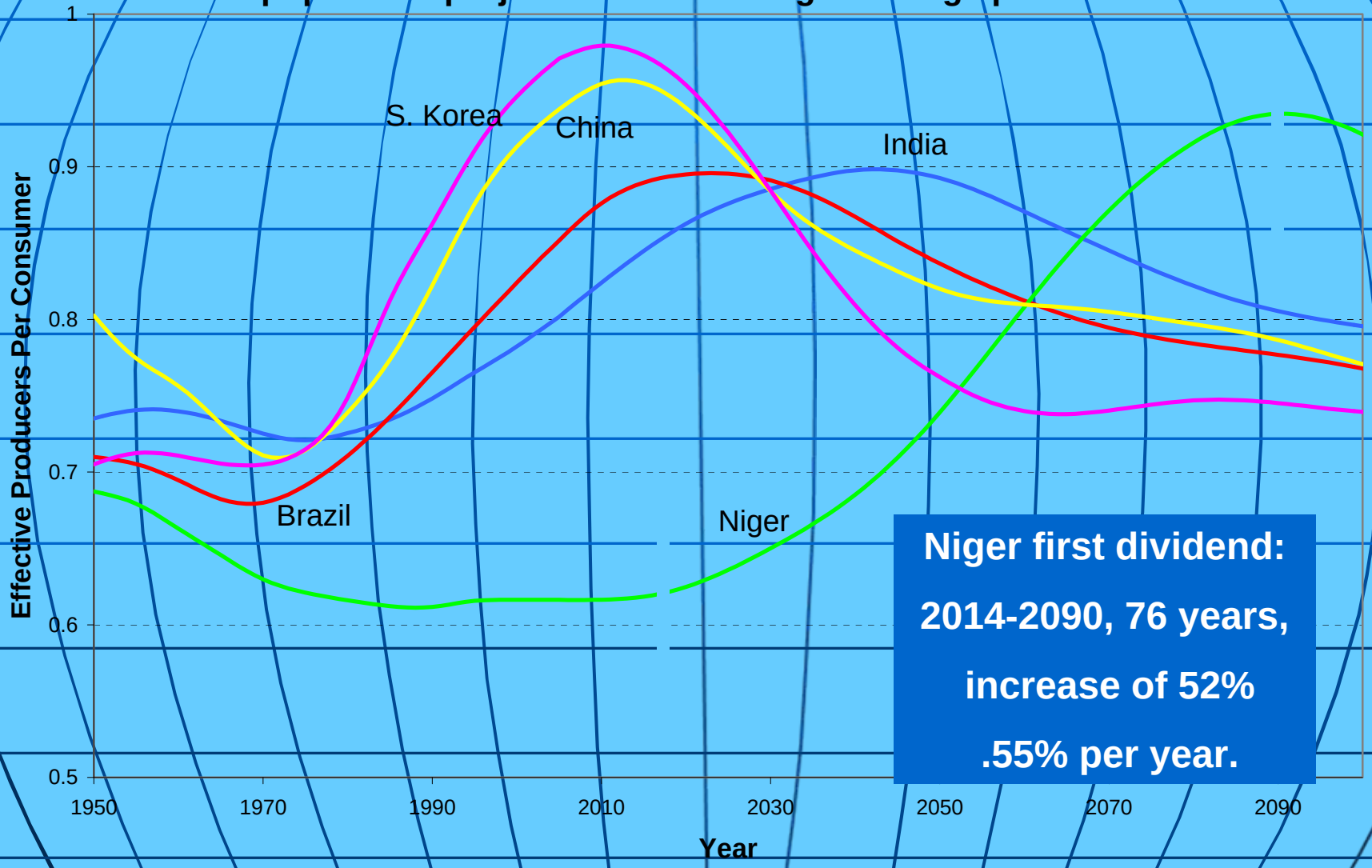

Niger first dividend:

2014-2090, 76 years,

increase of 52%

.55% per year.

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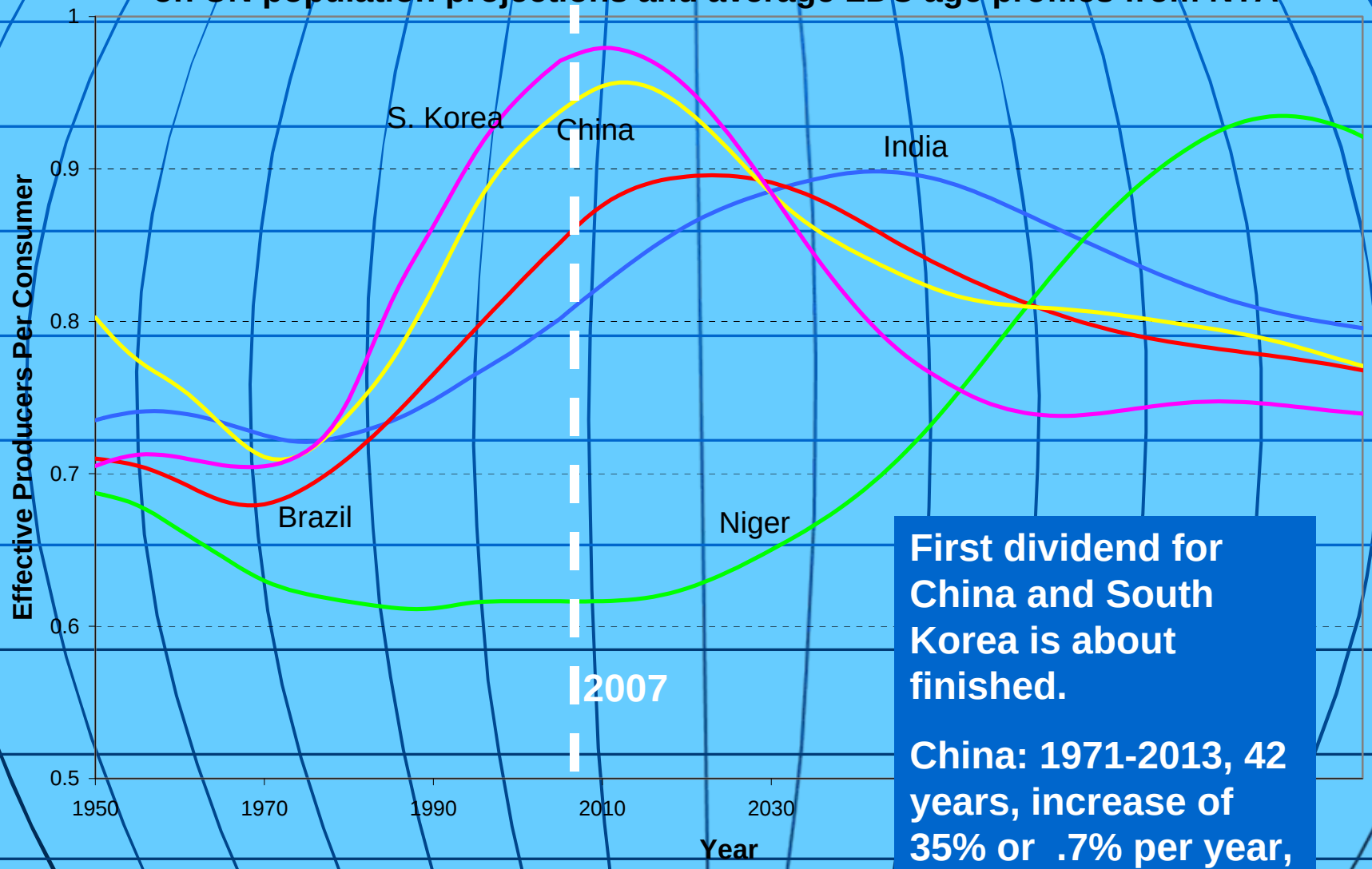

First dividend for China and South Korea is about finished.

China: 1971-2013, 42 years, increase of 35% or .7% per year,

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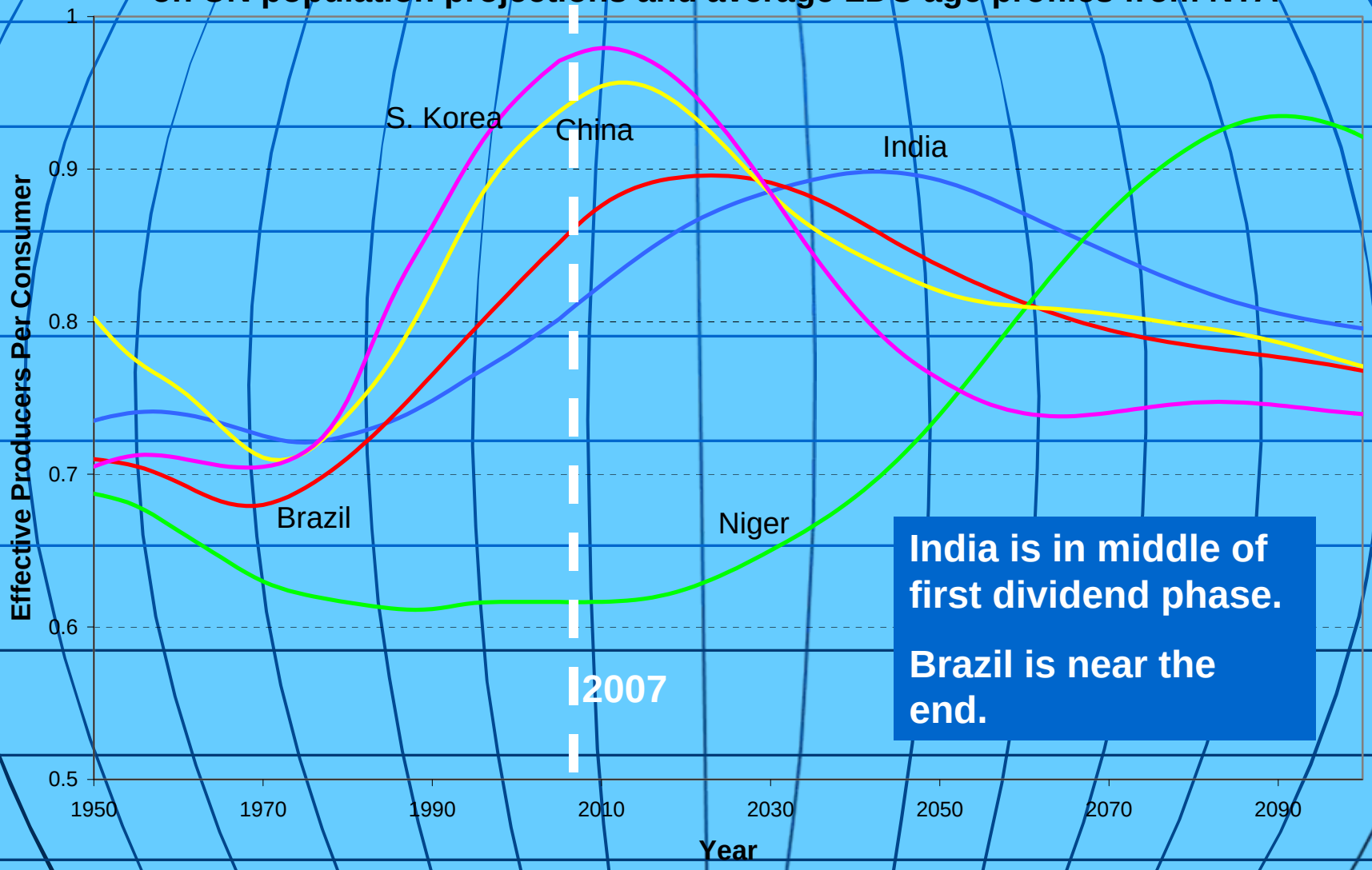
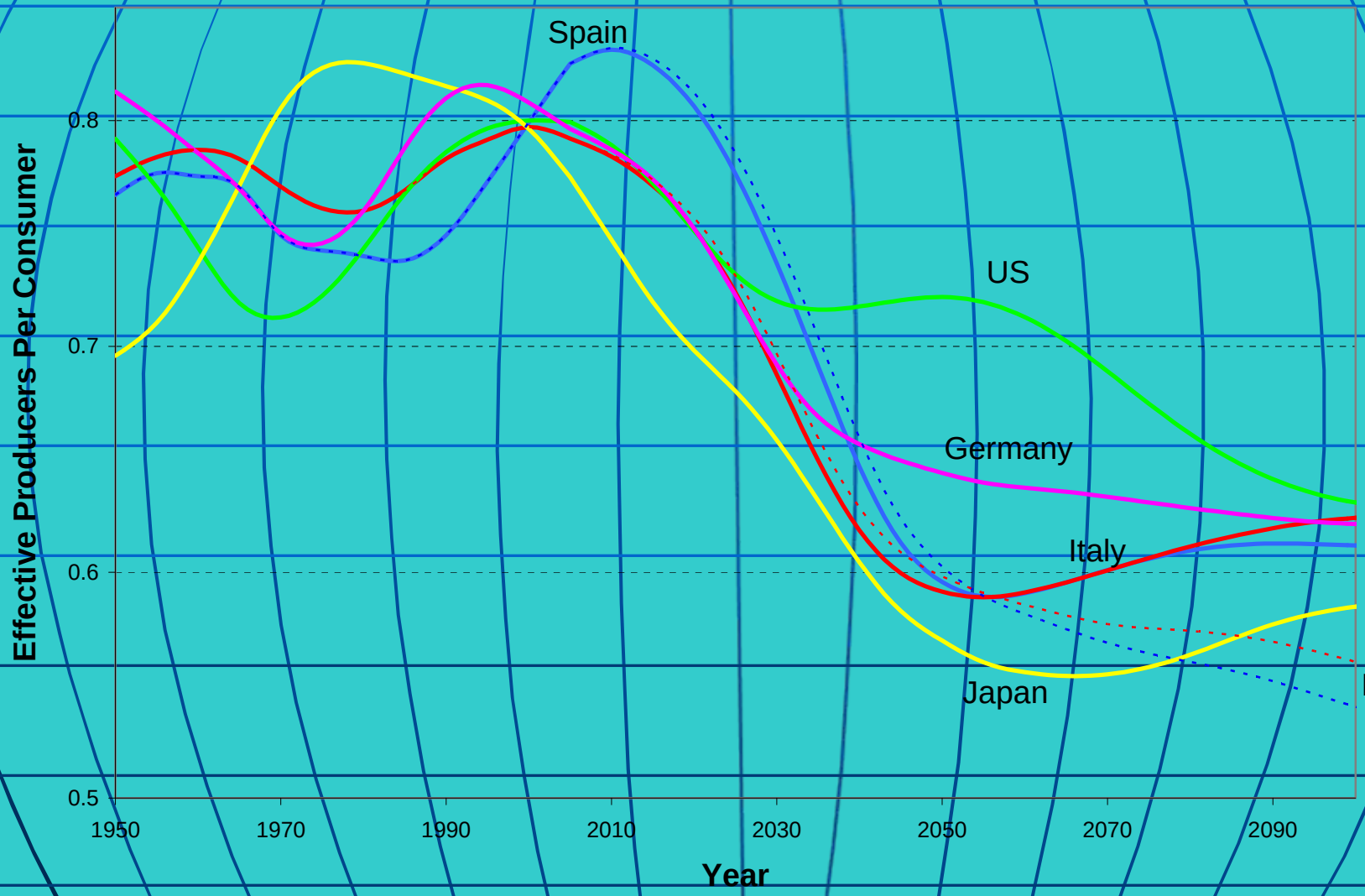


India is in middle of first dividend phase.

Brazil is near the end.

Support Ratios for Five More Developed Countries, 1950-2100, based on UN long term population projections and the NTA age profile for the US.



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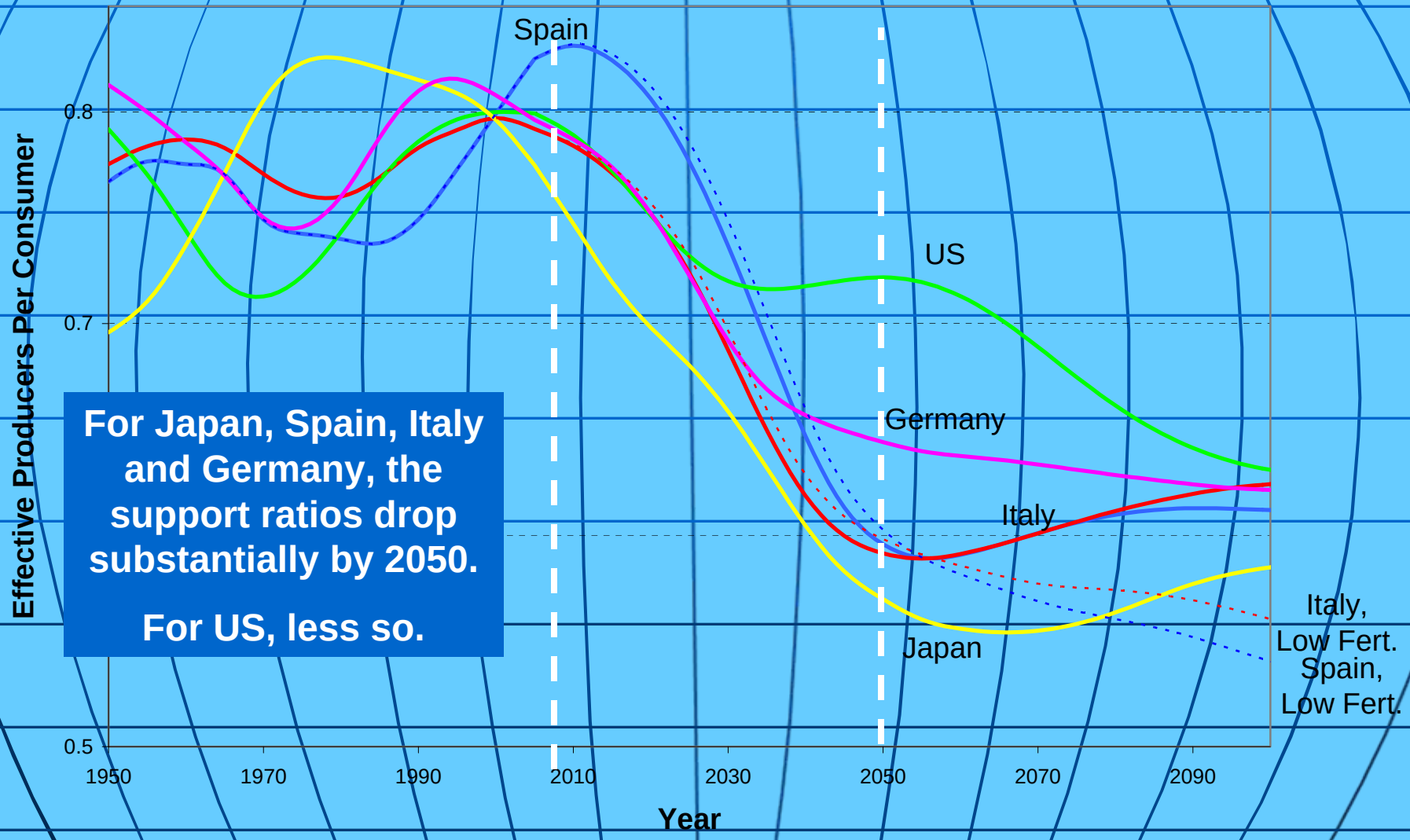
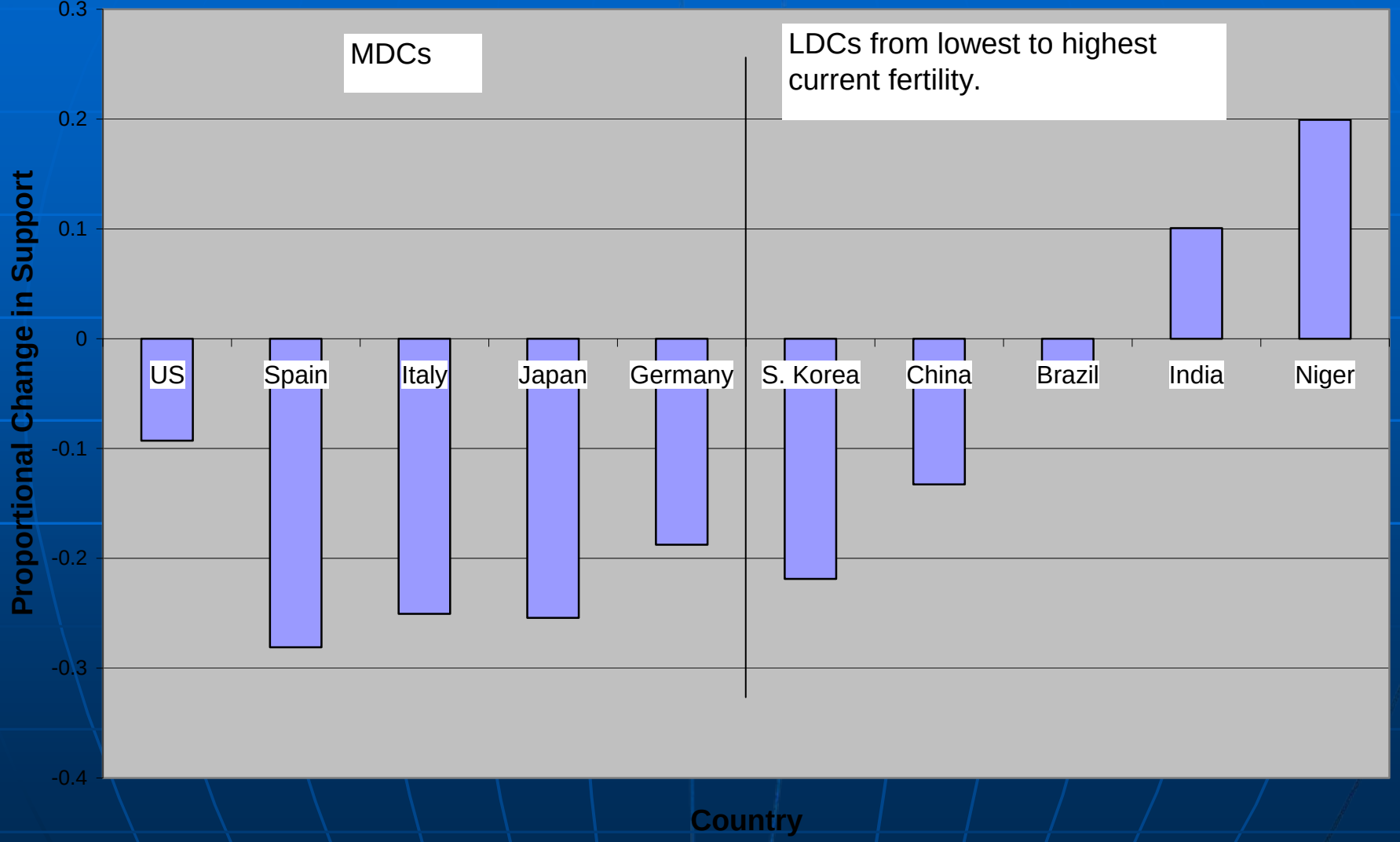


For Japan, Spain, Italy and Germany, the support ratios drop substantially by 2050.

For US, less so.

Proportionate Changes in the Support Ratio from 2007 to 2050 for Selected Countries



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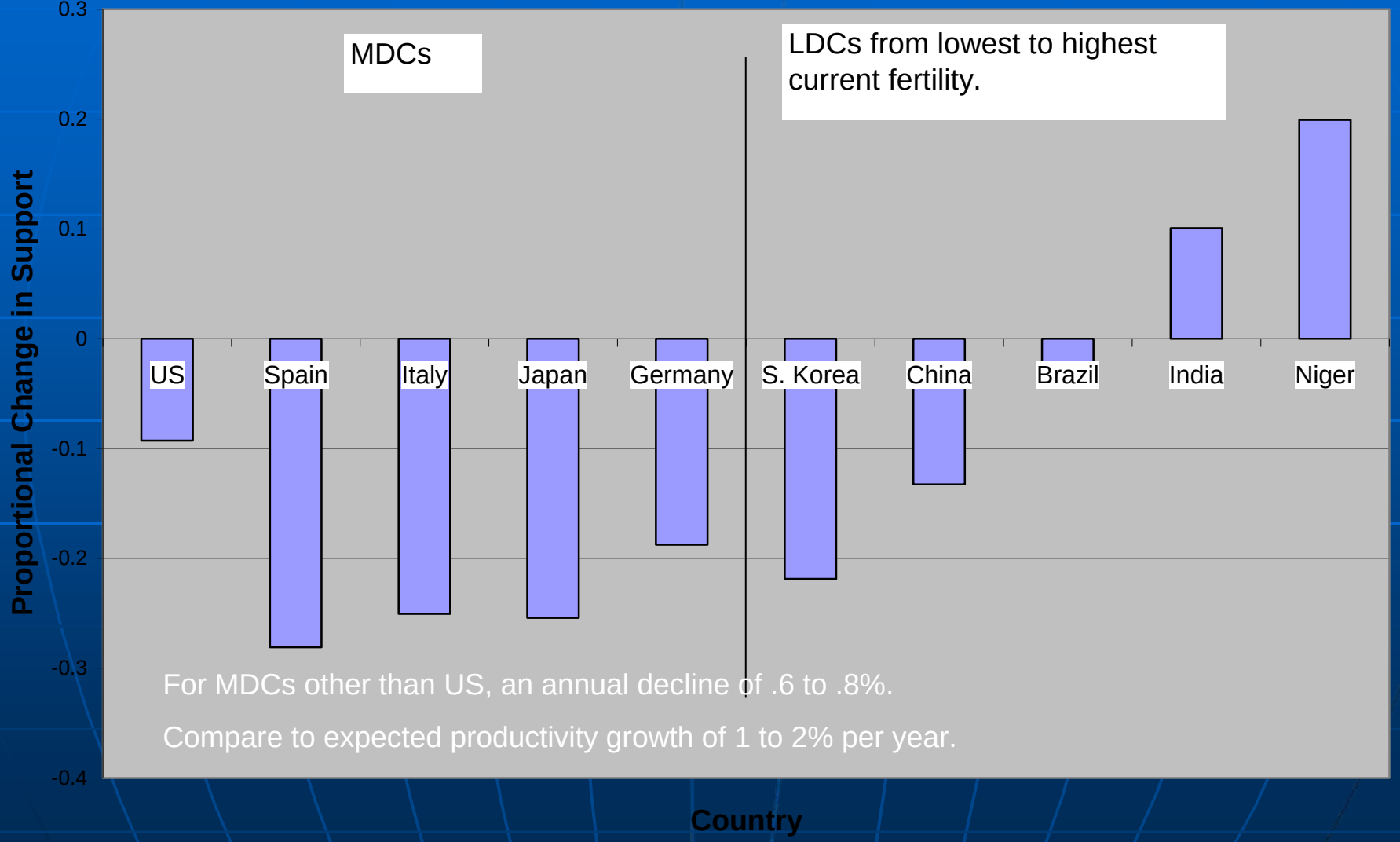


For MDCs other than US, an annual decline of .6 to .8%.

Compare to expected productivity growth of 1 to 2% per year.

Population ageing, savings and capital

- *The first demographic dividend is transitory.*
- *Given the right policies, changes in age structure can produce a second demographic dividend which is permanent.*

The second demographic dividend

- *Typically, adults accumulate assets over their lifetimes.*
- *Hence, the elderly hold more assets than others.*
- *Population aging raises the population share of the elderly and therefore raises the average per capita amount of wealth and asset income.*
- *More capital per worker also raises labour productivity producing the second dividend.*

The second dividend is reinforced by demographic change

- *Longer life requires increased saving for retirement.*
- *Lower fertility may mean higher saving by parents with fewer children.*
- *For these reasons, older persons may accumulate even more wealth.*

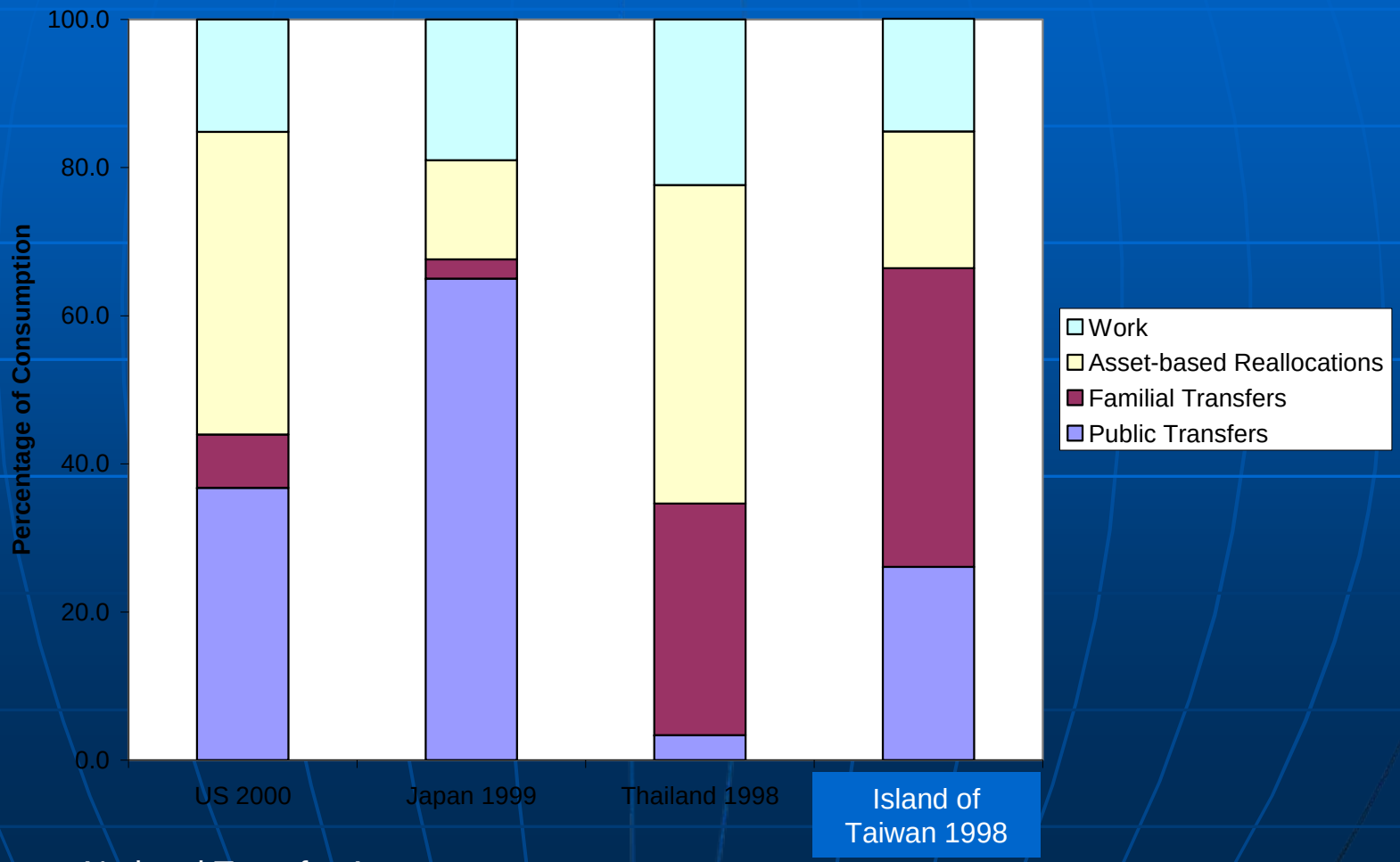
The savings rate may decrease as the population ages

- *Reaping a second dividend does not require an increasing savings rate. Actually, aggregate saving may well fall.*
- *The second dividend can nevertheless occur, because with slower labour force growth, even lower saving can raise capital per worker.*

However, the second dividend depends on institutions

- *If older persons are supported by their adult children, they will probably save less.*
- *If older persons are supported by unfunded public pensions, they are also likely to save less.*
- *In both cases, the second dividend is reduced.*

How old age consumption is financed in four countries



Source: National Transfer Accounts.

Major differences across the four countries

- *Public transfers account for 65% of elder consumption in Japan, but only 3% in Thailand.*
- *Family transfers account for 40% in Taiwan, Province of China but only 4% in Japan.*
- *Assets account for 40% in Thailand and the US, but only 15% in Japan.*

RECAPITULATION

The transition leads to a first dividend

- *Low fertility, longer life and slower population growth or decline are the destiny of all countries.*

- *The transition to low fertility produces increasing support ratios for a period and a first dividend thus accrues.*

The first dividend is transitory

- *As population ageing continues, the support ratios eventually decline*
- *With more older persons, institutions and programmes focused on the elderly will come under severe stress.*

The second dividend will help

- *Yet, even as the population ages, the second demographic dividend increases capital per worker, boosting productivity and asset income.*

The second dividend is not automatic

- *BUT, realization of the second dividend depends on the institutional context of each country and the extent to which it favours people's reliance on savings and the accumulation of assets for old age support.*

Transfers compete with the second dividend

- *Because inter-generational transfers compete with savings or asset accumulation as sources of support for old age, less of them is better if the second dividend is to be maximized.*

- *BUT, transfers may be necessary, especially to provide a safety net for the poor. Policy-makers should weigh carefully their costs and benefits.*

But transfers may be necessary

- *Transfers may be necessary, especially to provide a safety net for the poor, but policy-makers should weigh carefully their costs and benefits.*

There is no need for alarm, but there is need for action

- *Population aging is not a cause for alarm, but it will require adjustment of institutions and programmes.*

Policy-makers must reassess their transfer systems

- *At early stages of the aging process, Governments have the option of encouraging asset accumulation rather than transfers for old age support and thus harness the power of population aging to increase wealth.*

Delay is not an option

- *Delays can only lead to the increase of debt in transfer programmes and limited flexibility to change, as in developed countries today*

Population ageing presents many opportunities if we address the challenges it posses.