

Population, Age Structure and Poverty

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Population and Poverty

Theory

- Population numbers → overcrowding
- Population growth → dilutes capital

Evidence

- Little evidence that population size affects national economic growth
- 1986 United States National Academy of Sciences Report

Population Crowding and Scarce Resources

- Countries can export and import
- Crowding effects may not appear at the national level – **with exceptions**
- Crowding in cities
- Globalization: At the global level there is only one observation (world population)
- World population may affect exhaustible resources and produce pollution

Fertility and Mortality

- While population growth appears to have little effect, the components of population growth matter
- **Population growth rate =**
birth rate - death rate + net migration rate
- Effects are not symmetric – the source of population growth is important

Cross Country Growth Evidence

- A low birth rate (slow population growth) increases economic growth
- A high death rate (slow population growth) lowers economic growth

The **components** of population growth have separate large effects on economic growth

- Bloom and Freeman 1988, Kelley and Schmidt 1995, 2005

Population and Demography

- Population is more than just numbers
The **source** of population growth matters .
- **What is the effect of population growth?** High fertility and low mortality have very different effects
- Our theory must be more than just about population numbers if it is to fit the evidence – demographic effects

Why do Fertility and Mortality Rates Matter?

- Age Structure Effects
- Behavioural effects of longer life spans
- Behavioural effects of lower fertility

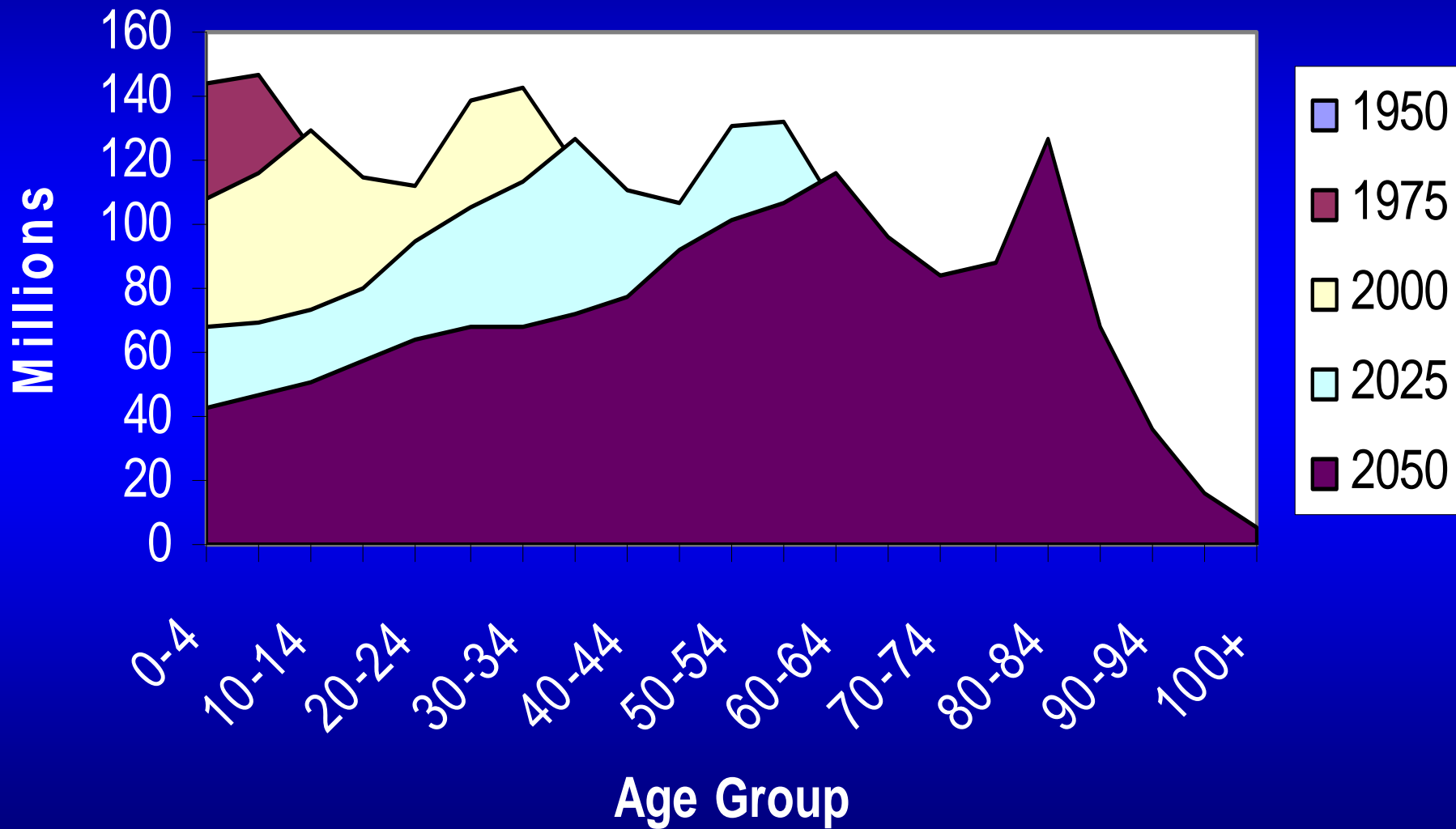
Age Structure Effects

- Fertility and mortality rates determine the age structure of a population
- Persons of working age are productive – children and the elderly are “dependants”
- Depends if elderly keep working or save for retirement

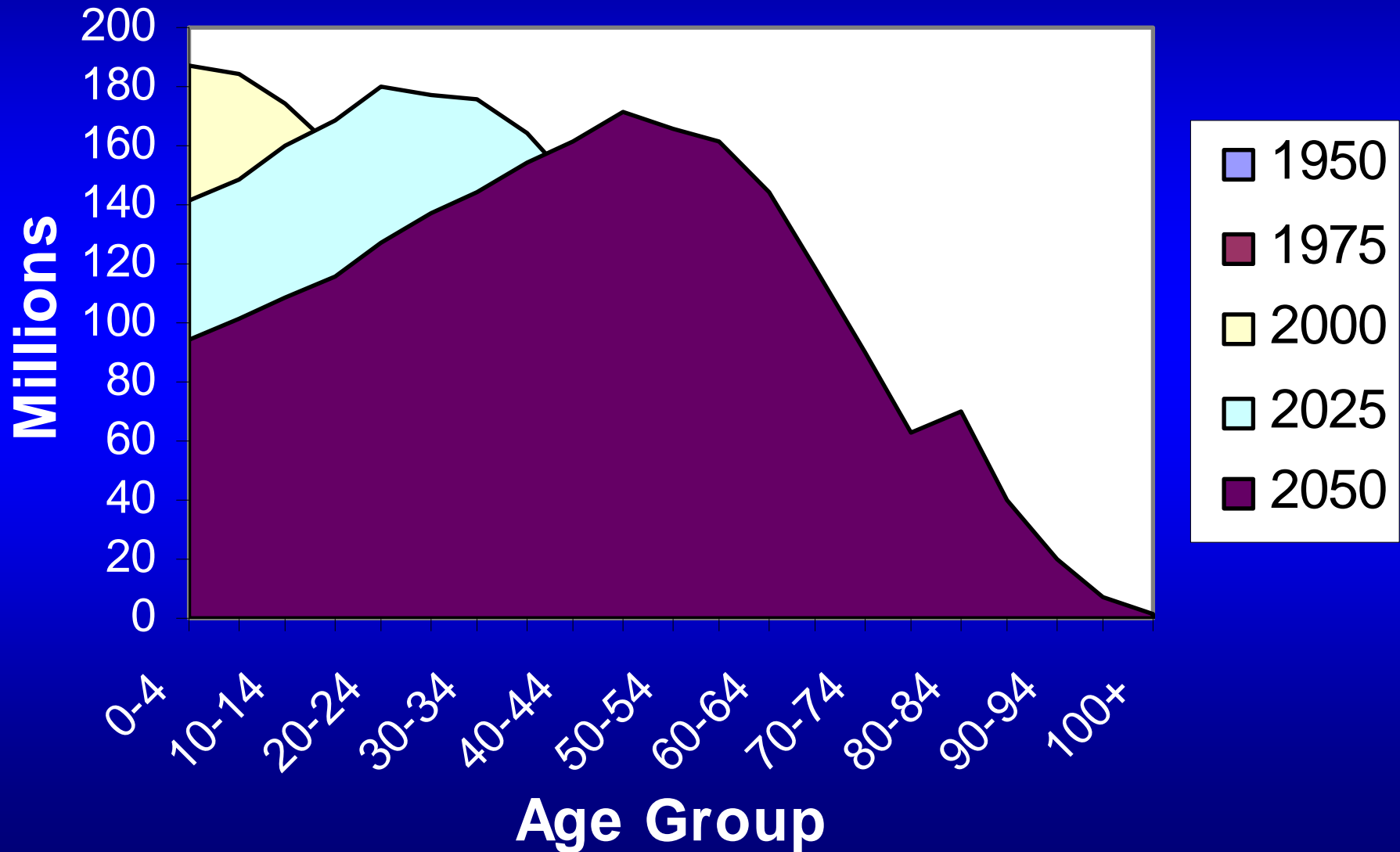
Demographic Dividend

- During the demographic transition fertility and mortality rates decline
- The **demographic dividend** is the accounting effect of more people of working age per capita
- plus additional behavioural effects of lower fertility and mortality

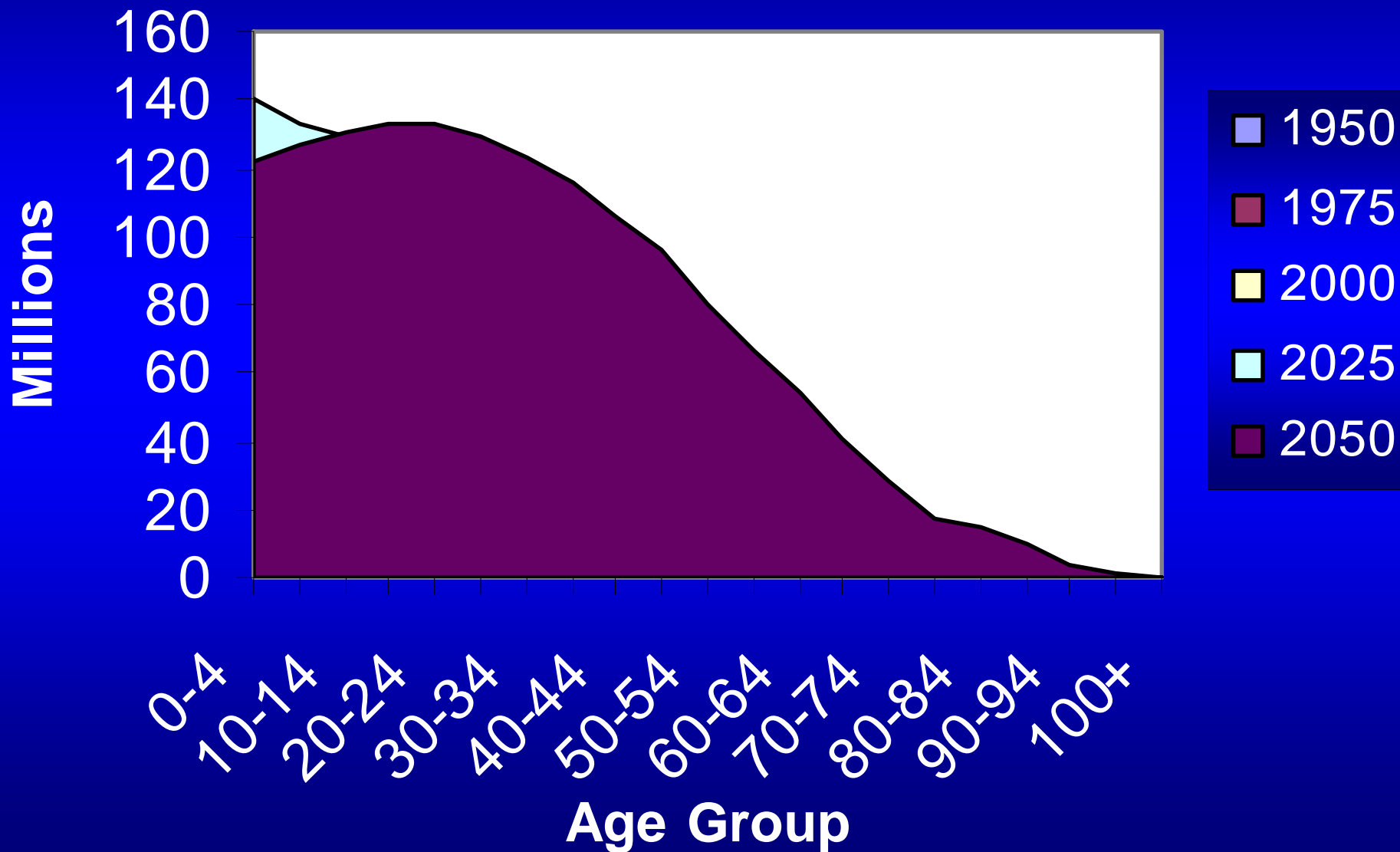
Population Age Structure: Eastern Asia



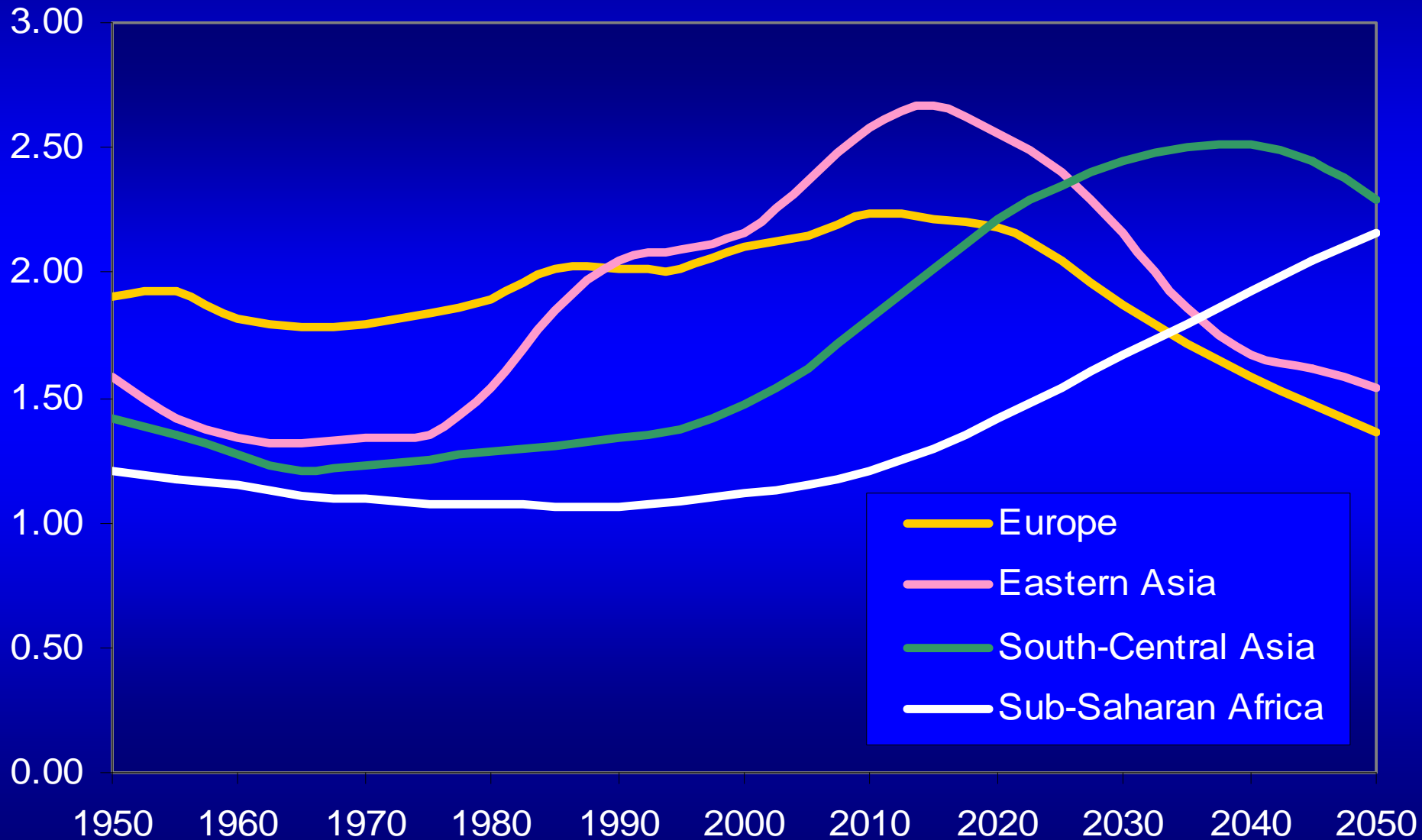
Population Age Structure: South-central Asia



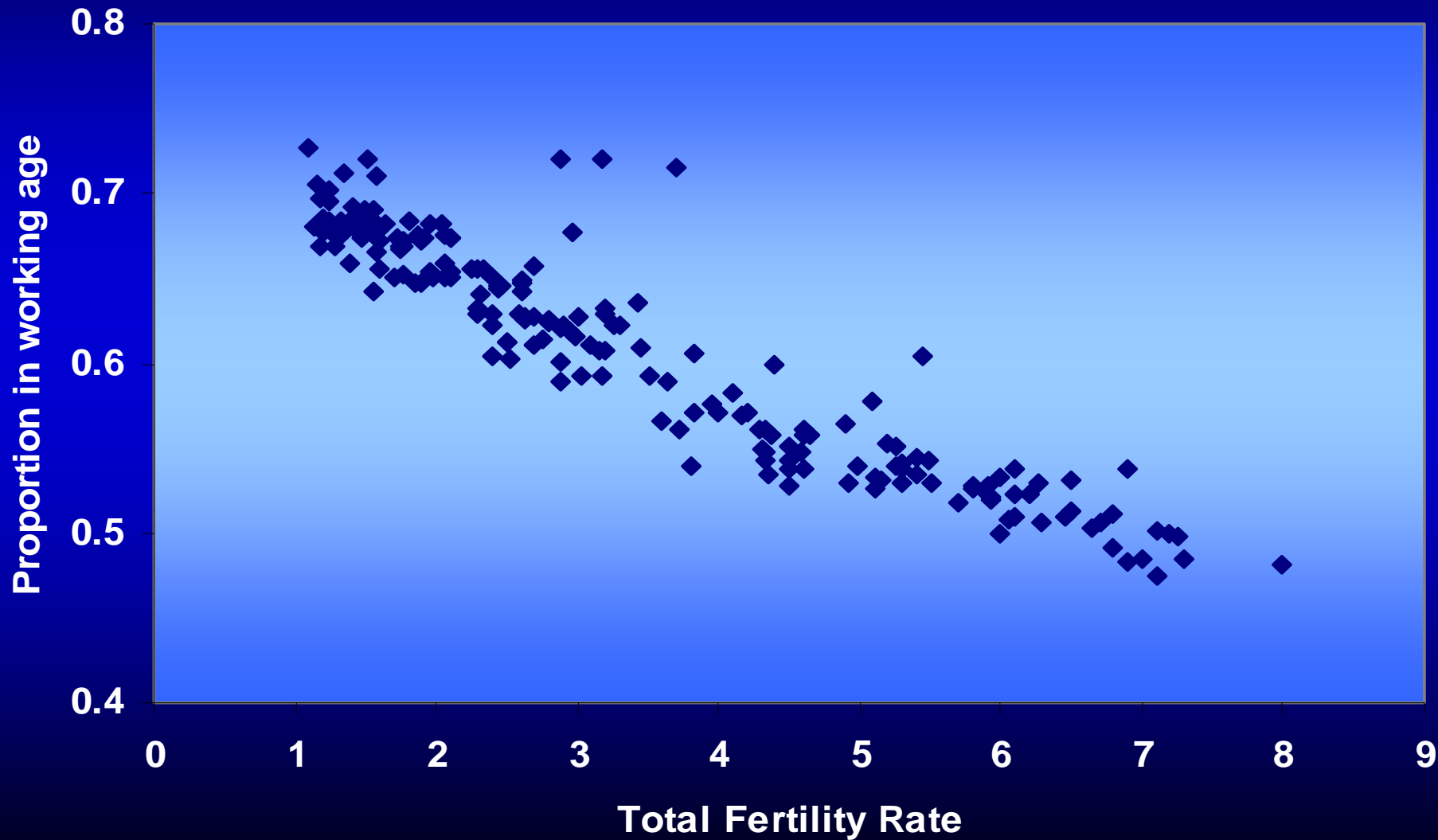
Population Age Structure: Sub-Saharan Africa



Ratio of Working Age to Non-Working Age Population



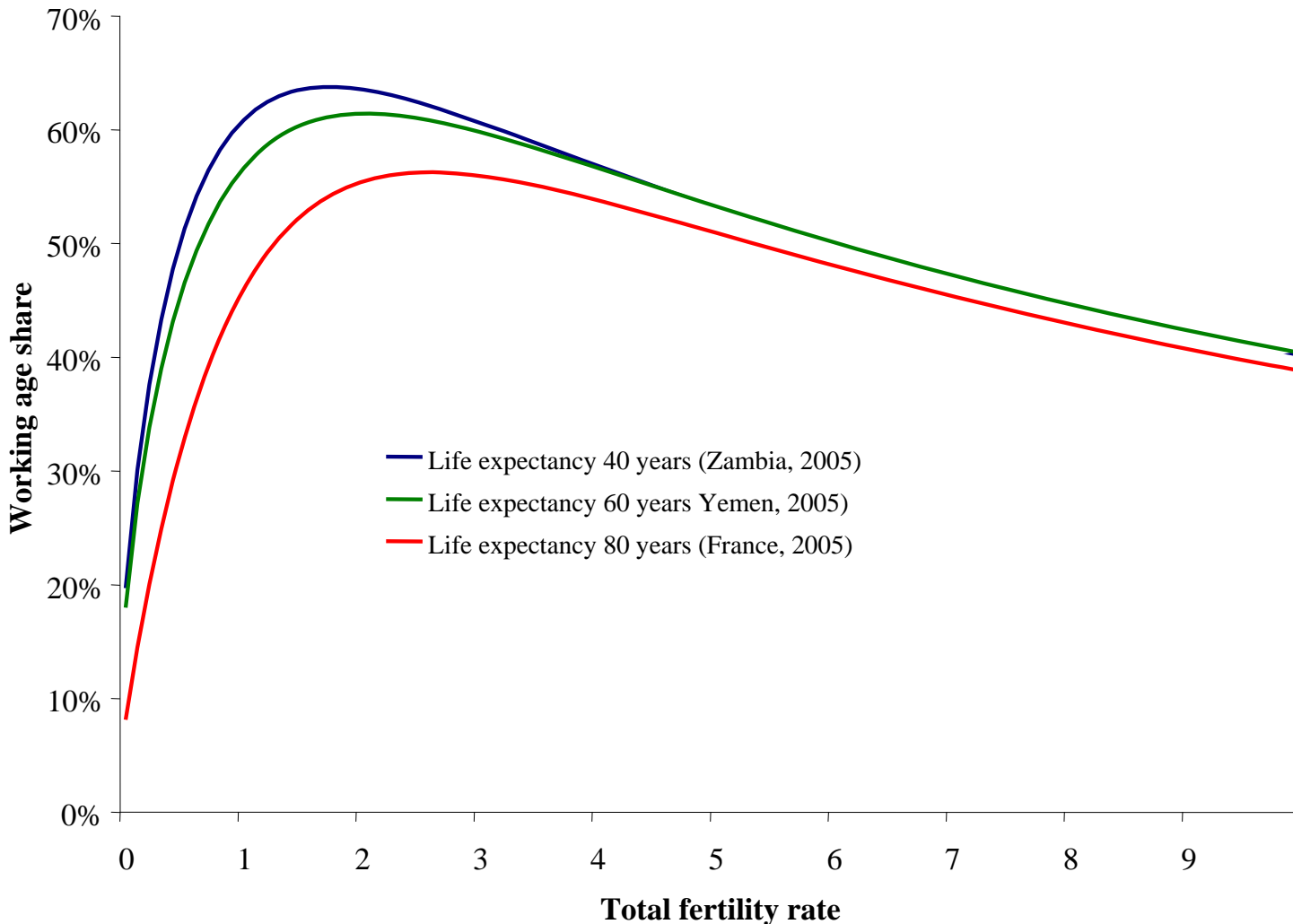
Fertility and Age Structure Across Countries, 2000



Fertility and Age Structure

- Decreasing fertility reduces child dependency but, below replacement, leads to a lower proportions of workers in the long-run
- Fertility can decrease too much, reducing the number of workers and creating higher old-age dependency

Fertility and the Share of Working Age Population in a Steady State



Evidence of Age Structure Effects

- There is strong evidence that age structure affects economic growth
- Macroeconomic models
 - Asia – Bloom, Canning, Malaney, 2000
Young, 1995
 - Ireland – Bloom, Canning, 2003
- Estimated effects are larger than pure accounting effects

Dividend is not Automatic

- Demographic dividend varies with governance and economic policy.
 - Governance
 - Markets
 - Openness to Trade
- In some countries no evidence of dividend – unemployment
- With good policies dividend is three times larger than accounting effect

Behavioural Effects: Health to Wealth Mechanisms

- Increased productivity of healthier workers
 - Compression of morbidity and longer working lives
- Increased returns to education
- Longevity and savings: longevity expectations and affect savings
- Long-term effects of childhood health
 - On physical and cognitive development

Behavioural Effects: Fertility Mechanisms

- Female labour force participation
 - Lower fertility and better maternal health increase the female labour supply.
- Family size
 - Fewer children mean higher investments in health and education per child at both the household and national levels
 - Investing in the health and education of children has long-term payoffs in terms of reducing poverty

Evidence of Fertility Effects

- **Positive evidence of effects of fertility on female labor force participation**
 - Angrist and Evans, 1998
 - Bloom, Canning, Fink and Finlay, 2009
- **Mixed evidence of effects on investments in children: the quality-quantity tradeoff**
 - Rosenzweig and Wolpin, 1980
 - Angrist, Lavy, and Schlosser, 2005
 - Lee and Mason, 2009

Experimental Evidence

- Family planning and maternal and child health interventions in Matlab, Bangladesh and Navrongo, Ghana. Two rural areas.
- Treatment areas had enhanced programmes on family planning and maternal and child health, control areas did not.

Fertility and Mortality Effects in Matlab and Navrongo

The interventions:

- Lowered completed fertility by more than one child per woman;
- Increased birth spacing of third and higher order births, and
- Reduced infant mortality thanks to health workers.
 - Shultz and Joshi 2007, Depuur et al 2002

Long-term Effects in Matlab

For women

- Better nutrition among women
- Higher earnings and incomes for more highly educated women
- Increased household assets

For children

- Increased years of schooling for boys
- Improved nutrition for girls

Conclusion: Households

- Providing family planning services reduces fertility
- Lower fertility leads to
 - Increased female labour force participation and income
 - Higher investment in children's health and education

Conclusion: Countries

- Lower fertility, by lowering child dependency, increases income per capita – **the demographic dividend**
- It also boosts family incomes from higher **female labour force participation**
- Over the long-run, smaller families can produce a **healthier and better educated** workforce.

Policy Implications

- Fertility rates have economic implications for both households and countries
- Income and poverty are not the only welfare goals - health, family size
- Well informed families, with access to reproductive health and family planning choices, are best placed to make these decisions and tradeoffs