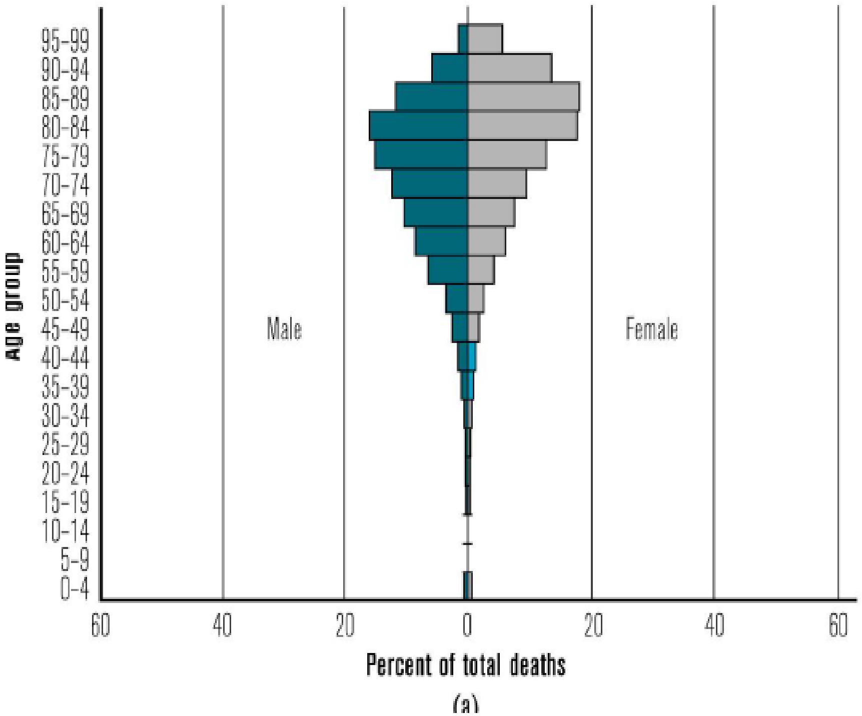
HUMAN CAPITAL: HEALTH

EE 462 Development Macroeconomics

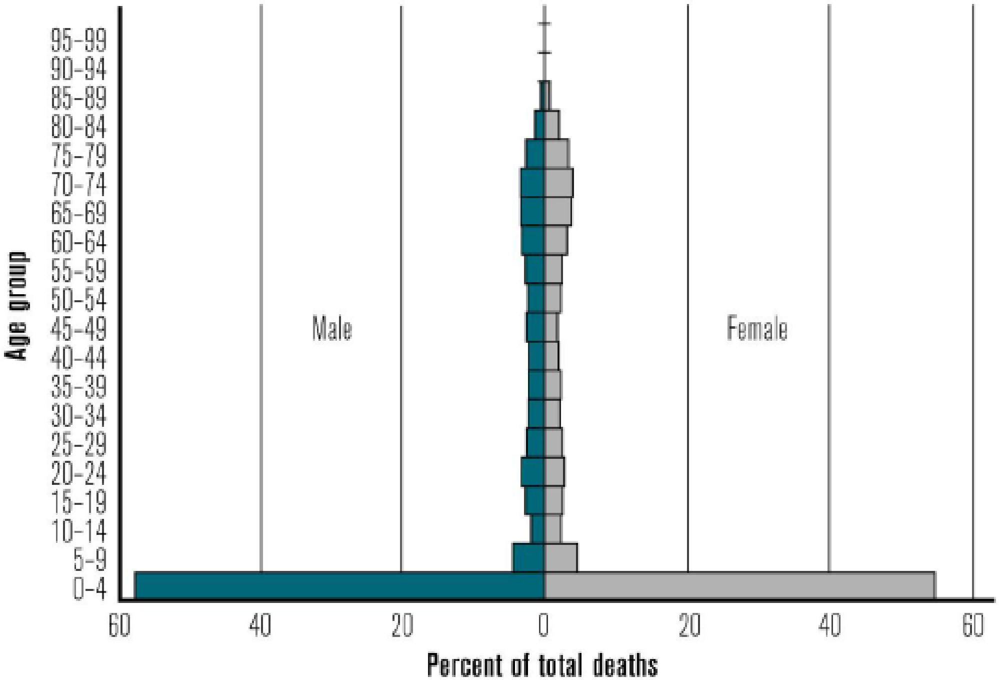
Topics

- Health Measures
- Transitions in Global Health
- Health, Income, and Growth
- Epidemics and Economics

Distribution of Age and Deaths, 2005



Denmark



Sierra Leone

Poor health outcomes are correlated with income levels, but which causes which?

Health Measures

- **Mortality** measures deaths in a population
  - Ex: Under-five mortality rate is the probability (in terms of 'per 1000 live births') that a child born dies before reaching age five
- **Morbidity** measures rates of disease and illness.
  - Ex: Prevalence of HIV-infected cases
- **Life expectancy** is the average number of years that the person is expected to live.
- **Health-adjusted life expectancy (HALE)** is a measure of life expectancy that takes into account disability-impaired living.

Transition in Global Health

- All regions of the world experienced gains in life expectancy since 1960, but some countries in Sub-Saharan Africa saw declines since the 1990s due to HIV/AIDS.
- In many developing countries, life expectancy has risen and fertility has fallen.
  - Lower youth dependency ratio, but higher elderly dependency ratio
- "Epidemiological transition": (i) age of pestilence and famine, (ii) the age of receding pandemics, (iii) the age of degenerative and human-made diseases
- In the 20th century, there has been a major shift in causes of death and disability from infectious disease to non-communicable disease. (but Covid-19 outbreak questions this statement!)

Health, Income, and Growth

- The relationship between health and income growth is bidirectional.
  - Higher income and growth means more resources available in the economy, so individuals can spend more on goods and services that directly or indirectly improve health.
  - Improved health leads to faster economic growth, higher incomes, and reduced poverty.

Discussion: Should we promote health or economic growth first?

Income and Health

- As income rises, there is greater ability to build public health clinics and hospitals, trains more doctors and nurses, and pay for public health services (e.g. immunization campaign).
- Prichett & Lawrence's article "Wealthier Is Healthier" suggests that improvements in income, holding other factors constant, lower child mortality and increase life expectancy.
- Caution: there's no evidence that economic growth will improve health *without deliberate public action*.
  - So, the problem might be "lack of information" or "weak belief" (Banerjee & Duflo).
  - Examples: Use of ORT and bed nets

Health and Productivity

- Q: How does better health lead to economic growth?
  - Productivity gains and increased investment
  - Healthier workers are not only more productive, but also loses fewer workdays due to illness.
  - Better health means less opportunity costs for care-takers in the household
- A family member's health can affect children's education.
  - No need to rely on child labor
  - Child's health has a direct effect on his/her own schooling.
  - There's evidence that childhood health can affect labor productivity later in life.

Health and Economic Growth (Bloom, Kuhn, and Prettner, 2018)

- Cross-country correlation between health and economic growth is well-established.
- But understanding causality between health and economic growth is still challenging.
  - There can be bidirectional causality and possible confounding factors (such as education, technological progress, institutional quality)
  - The relationship between the two varies depending on the dimension of health examined (morbidity vs. mortality) and the affected individual's age, gender, and SES.
  - Difference between the economic effects of health interventions in LDCs and in developed countries.

Preston curves

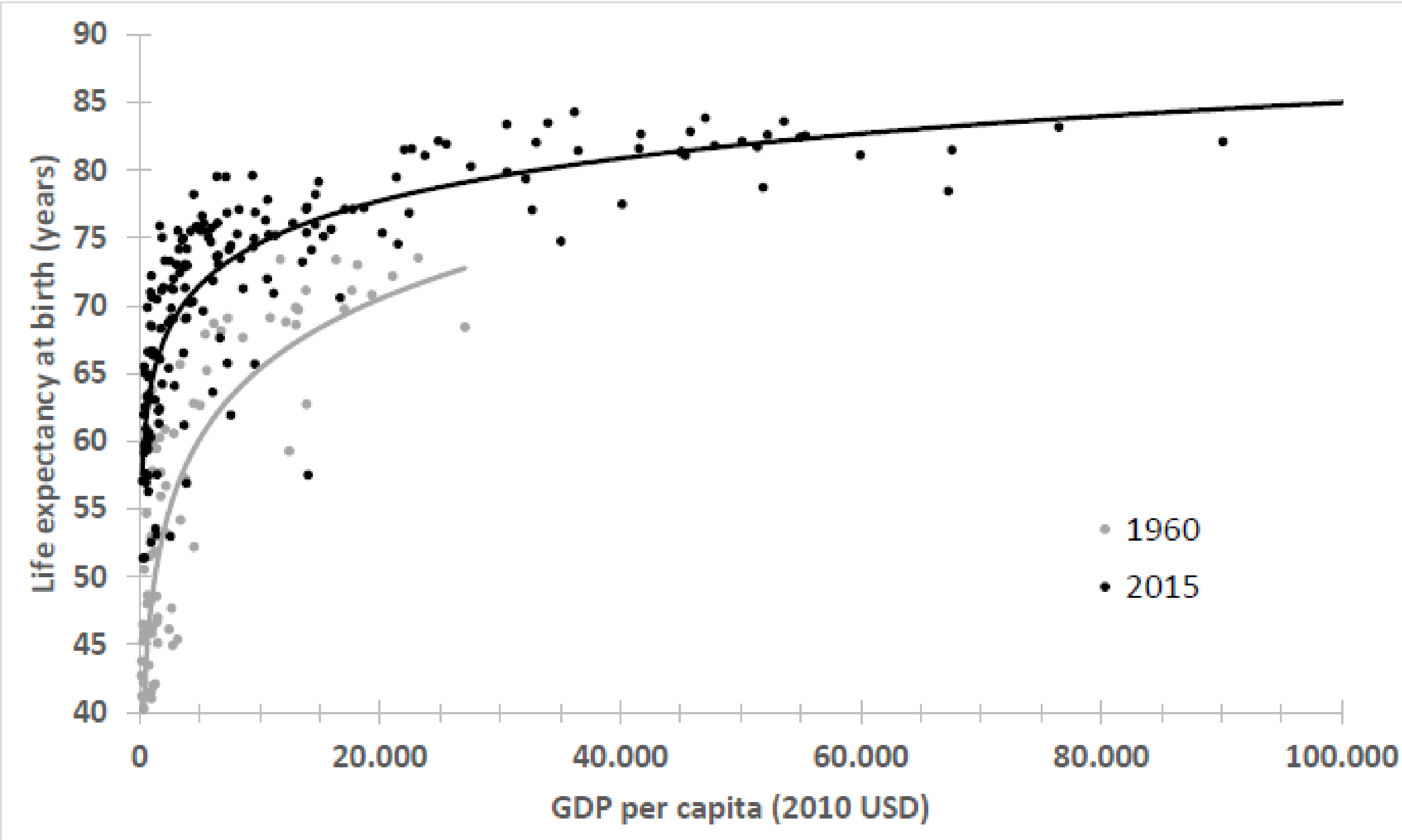


Figure 1. Preston curves for 1960 and 2015. Source: World Bank, 2017.

Empirical Evidence: Health and Econ Growth (1)

- Longevity impacts Long-run economic growth (e.g. Barro & Sala-i-Martin, 1995).
- Reducing mortality leads to less risky behavior, lower fertility, more investment in K and then raises econ growth (Lorentzen et al. 2008).
- Income → Growth
  - Causal effect of health on productivity (Shastry&Weil 2003; Weil 2007)
- Health → Income
  - Negative correlation between health improvement and economic growth (Acemoglu and Johnson, 2007)
    - Need to consider initial health
    - Diminishing returns to health investment at the macro level

Empirical Evidence: Health and Econ Growth (2)

- Role of demographic transition
  - ➢Rising life expectancy has a negative (not sig) effect on per capita income in the pre-transition countries, but has positive and significant effect in the post-transition countries (Cervellati and Sunde, 2011)
- U-shaped relationship between GDP/capita and life expectancy (Hansen 2012; Desbordes 2011)
- Influence of specific diseases
  - NCDs
  - Infectious diseases
  - Implications of pain-relief medicine on labor supply

Channels by which health affects econ growth in LDCs

- Demographic transition and timing of the take-off from Malthusian stagnation toward long-run econ growth
- Longevity → human capital investment is more likely to be paid off
- Mortality decline → lower fertility & dependency ratio
- Women's health → labor market, fertility, child health
- Longevity → incentives to invest in education
- Role of infectious disease

Channels by which health affects econ growth in developed countries

- Role of health as a driver of econ growth?
- Increase in life-expectancy raises aggregate savings and econ growth.
- Learning-by-doing spillovers – increased life expectancy has positive effect on technological progress
- High costs of advanced health-care systems potentially deter growth.
- Longevity improvement may lower economic support ratio.
- Productivity gains insufficiently offset elderly’ high medical costs.

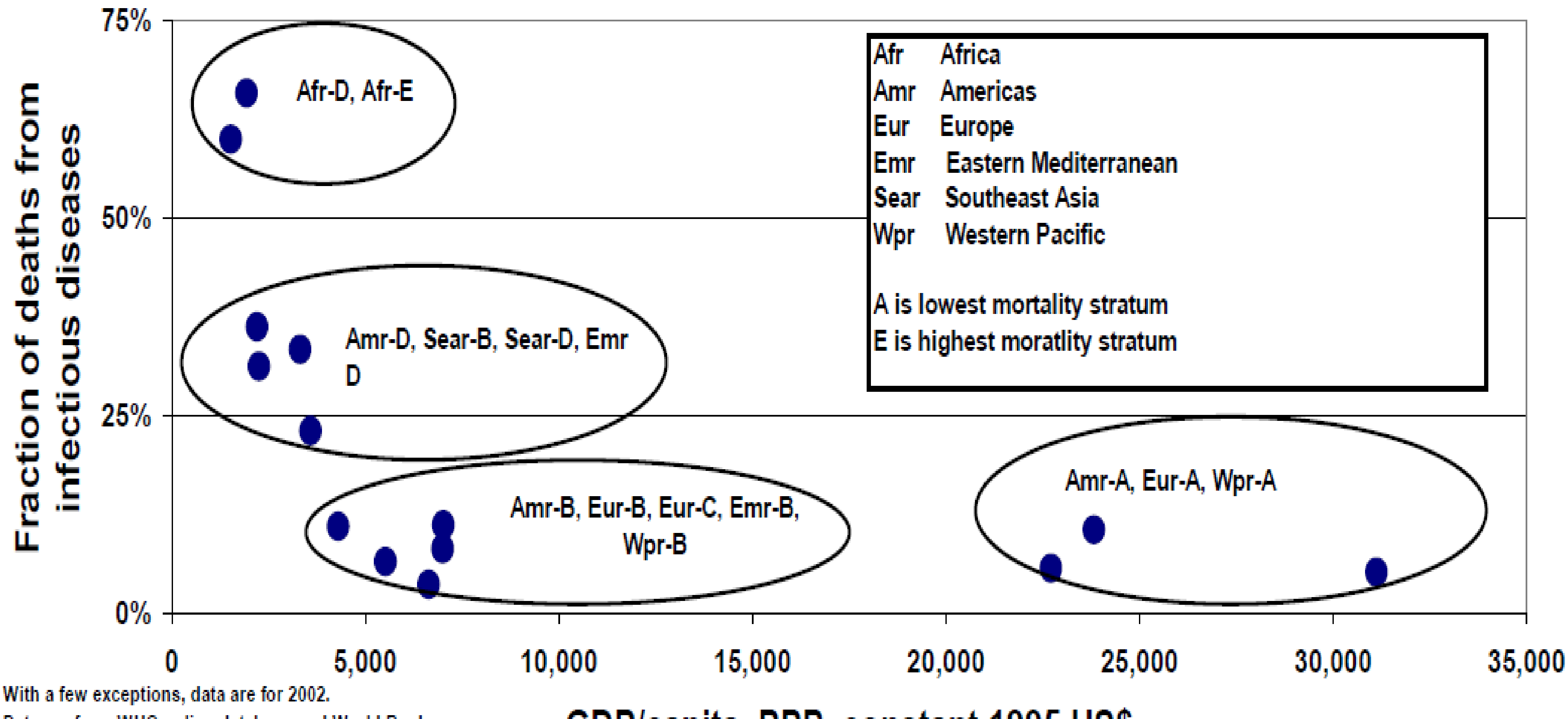
Epidemics and Economics (Bloom & Canning, 2006)

- The paper discusses the links between income and infectious disease epidemics, and how such links are affected by changing global circumstances.
- Health and wealth
  - Wealth as a determinant of health – improving economic conditions can lead to better health, but not always the case.
  - Health as a determinant of wealth:
    - Health affects income via education.
    - Good health boosts labor productivity.
    - Good health promotes saving and investment.
    - Health improvements will have both transitional and permanent effects on country’s population age structure, and potential impacts on economic development.
    - Health scares may deter both investors and tourists from a country (e.g. SARS).

Bloom & Canning (Cont'd)

- Epidemics, pandemics, and economic prosperity
  - Epidemics are most likely to arise and persist under conditions created by poverty:
    - Poor sanitation
    - Crowded living conditions
    - Weak bodies
    - Weak health care systems
  - Wealth enables people to safeguard themselves against or mitigate the effects of risk factors.
  - The share of deaths from infectious diseases is much higher in poor countries than in rich countries.
  - The economic impact of epidemics also depends on how long it lasts.
  - Also, when considering the value of human life, epidemics are extremely costly.

GDP/Capita vs. % of Deaths Caused by Infectious Diseases, By WHO Region and Mortality Stratum



With a few exceptions, data are for 2002.
Data are from WHO online database and World Bank, World Development Indicators 2004.

Bloom & Canning (Cont'd)

- The challenge of epidemics:
  - The forces of globalization helps the spread of epidemics (via international trade, travel, migration, etc.).
  - Global climate change may be affecting the spread of malaria.
  - Epidemics create panic.
  - Policy responses need to be fast and flexible.