

Chapter 4

POPULATION AND ECONOMIC GROWTH

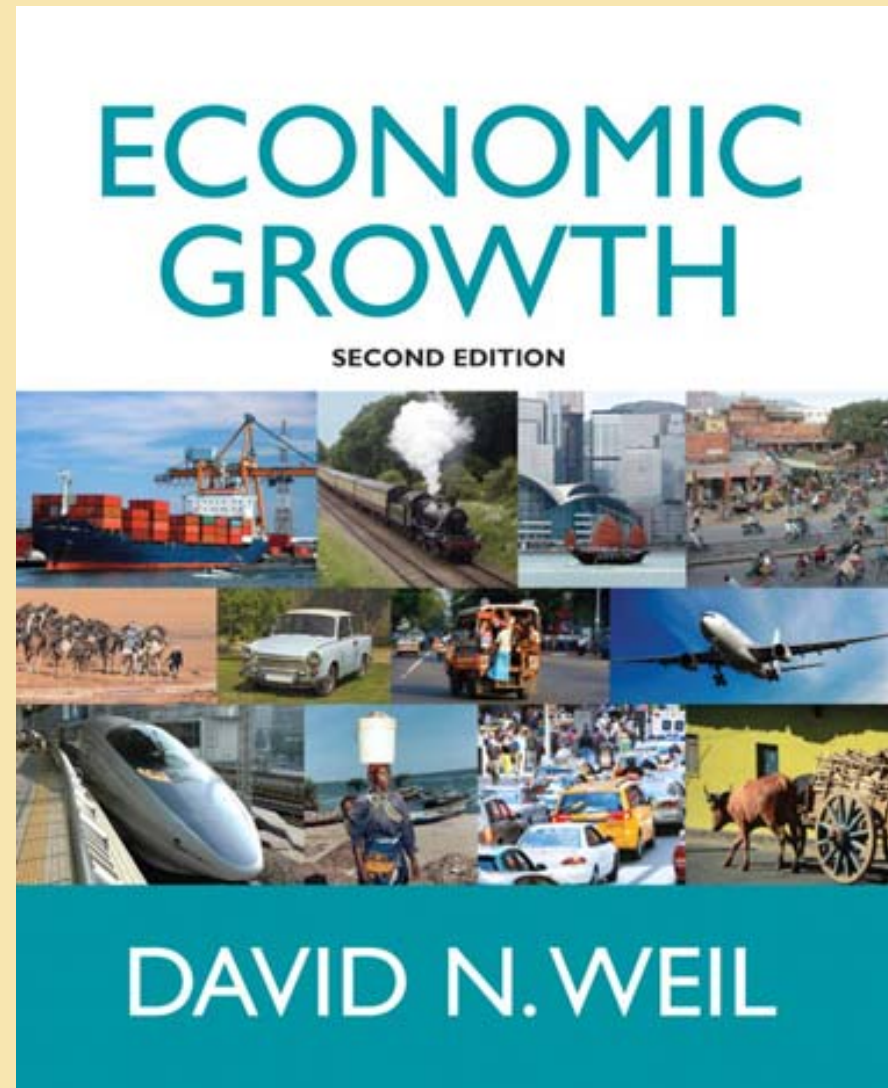
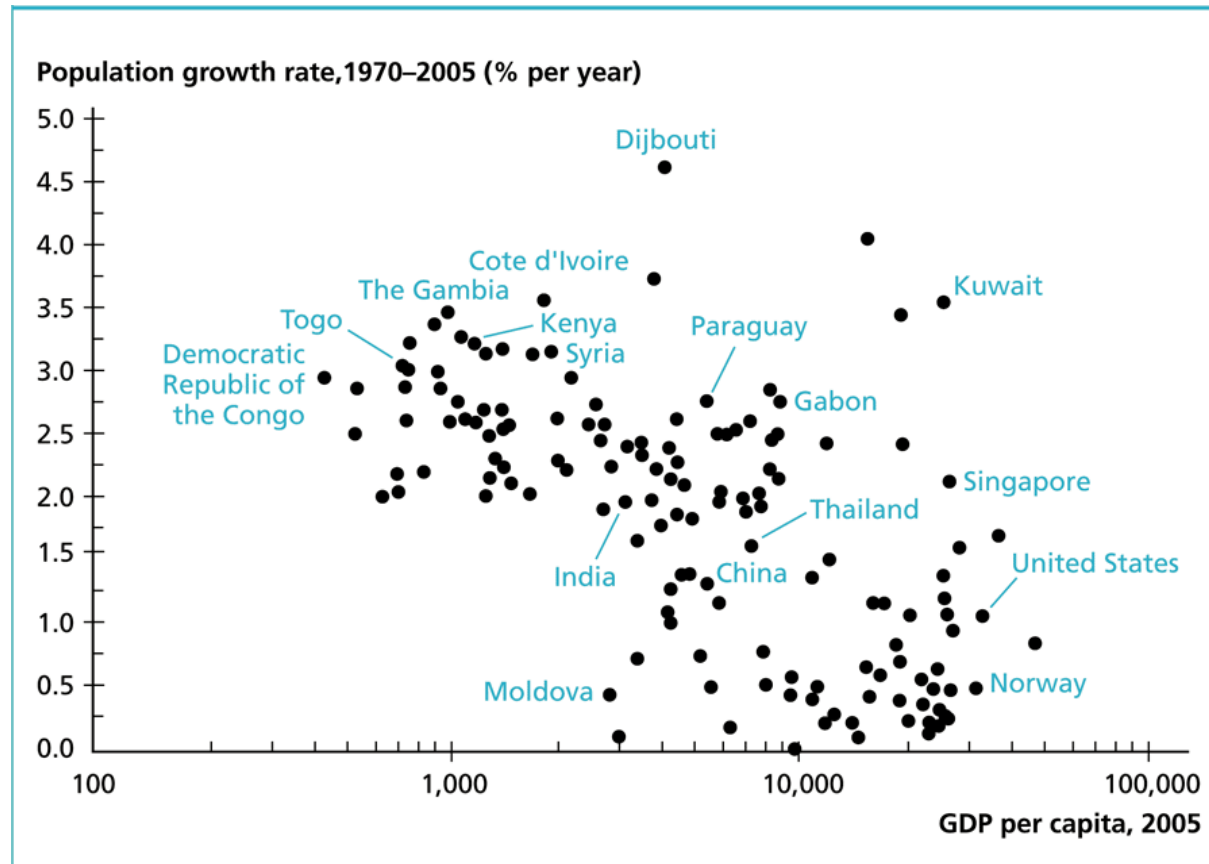
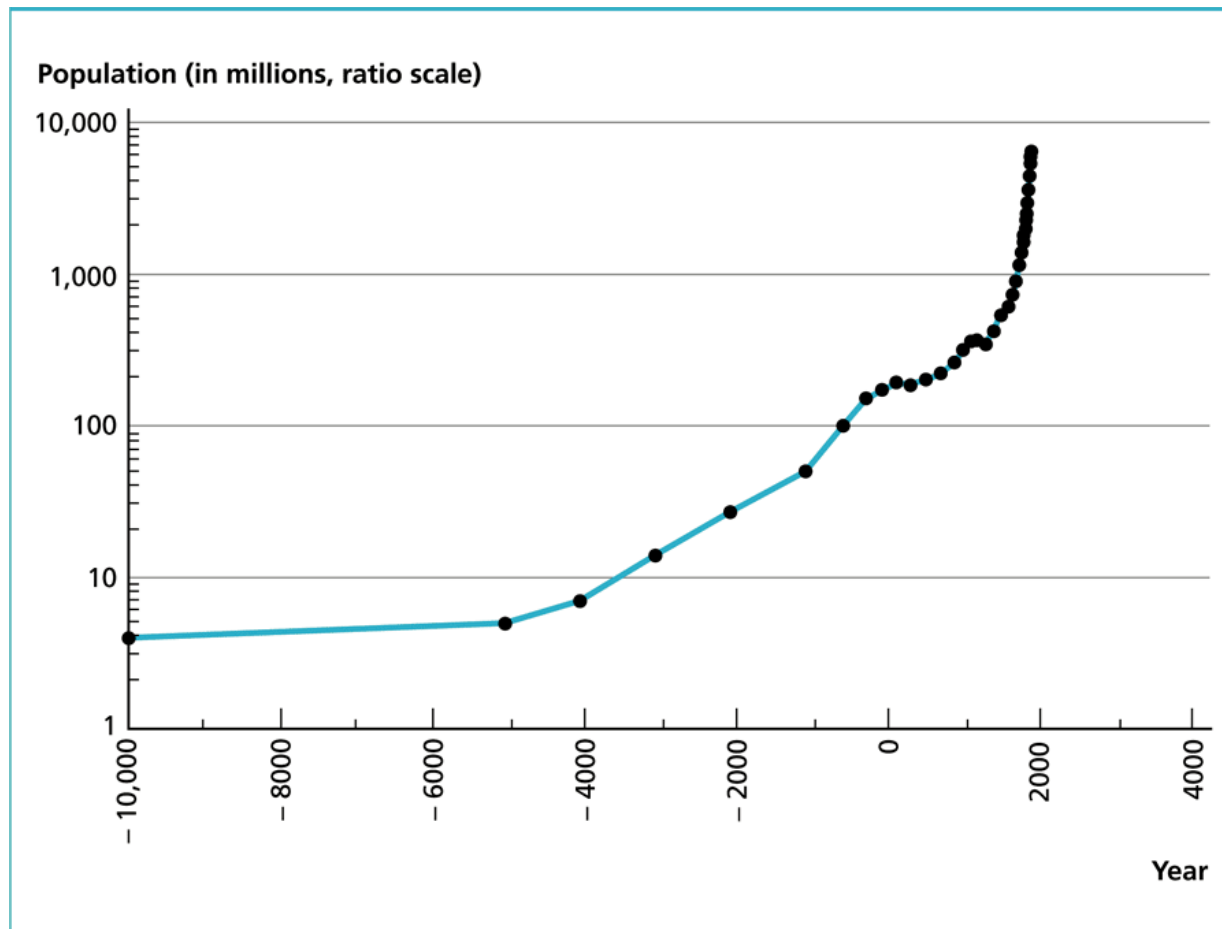


Figure 4.1 Relationship Between Income per Capita and Population Growth



Source: Heston et.al. (2006), World Bank (2007a).

Figure 4.2 World Population, 10,000 B.C. to A.D. 2005



Source: Kremer (1993).

Figure 4.3a The Malthusian Model



(a) Relationship Between Income per Capita and Population Size

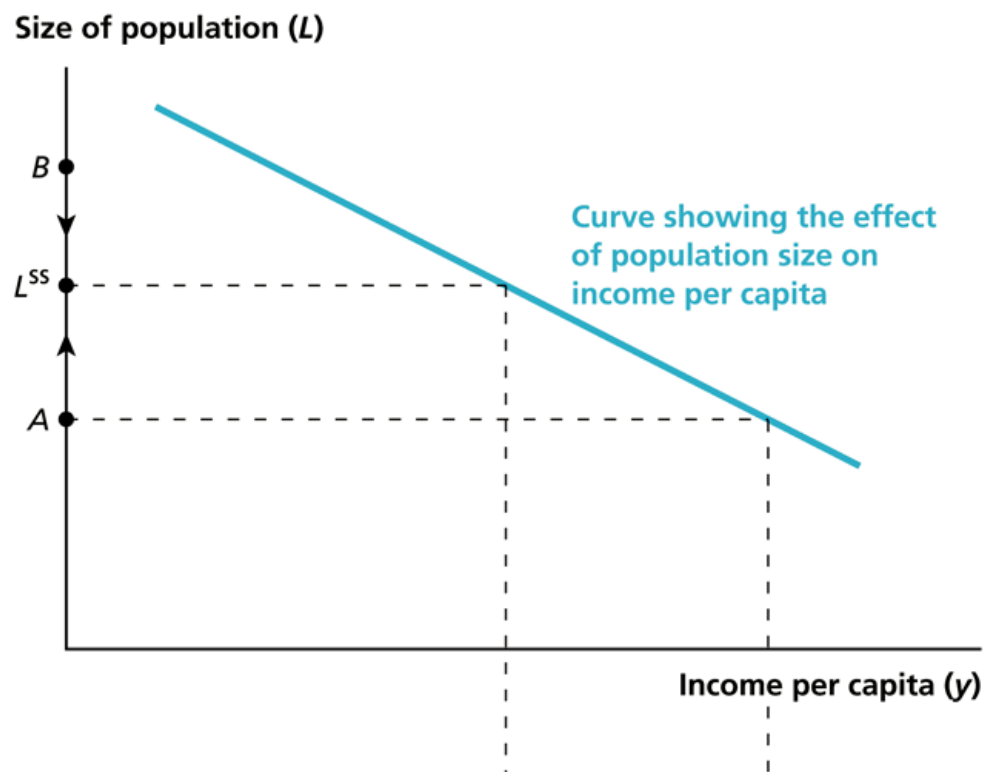


Figure 4.3b The Malthusian Model



(b) Relationship Between Income per Capita and Population Growth

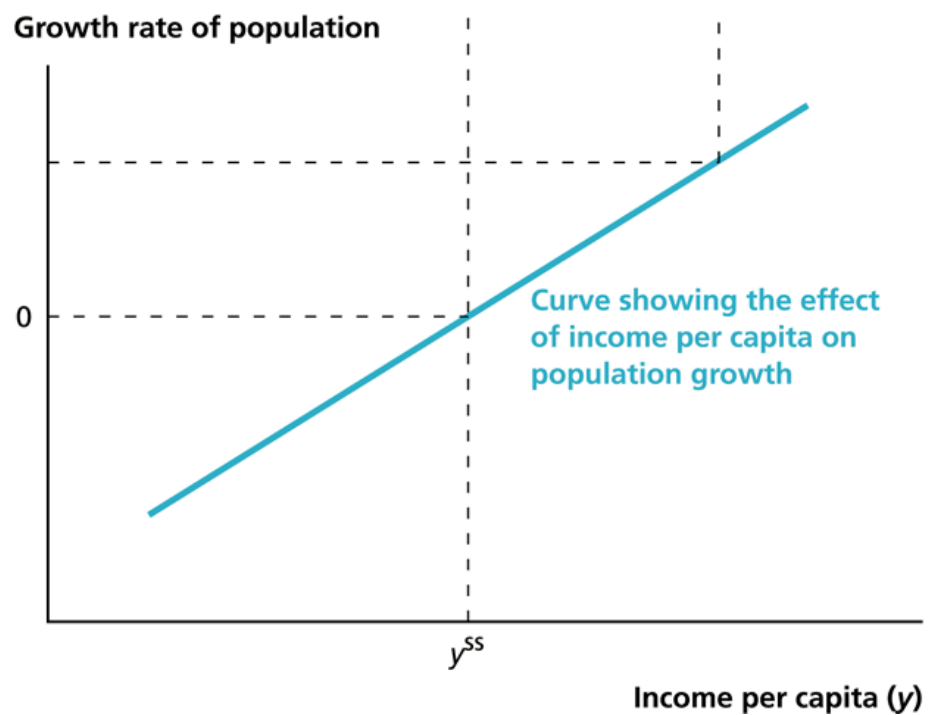


Figure 4.4a Effect of Productivity Improvement in the Malthusian Model

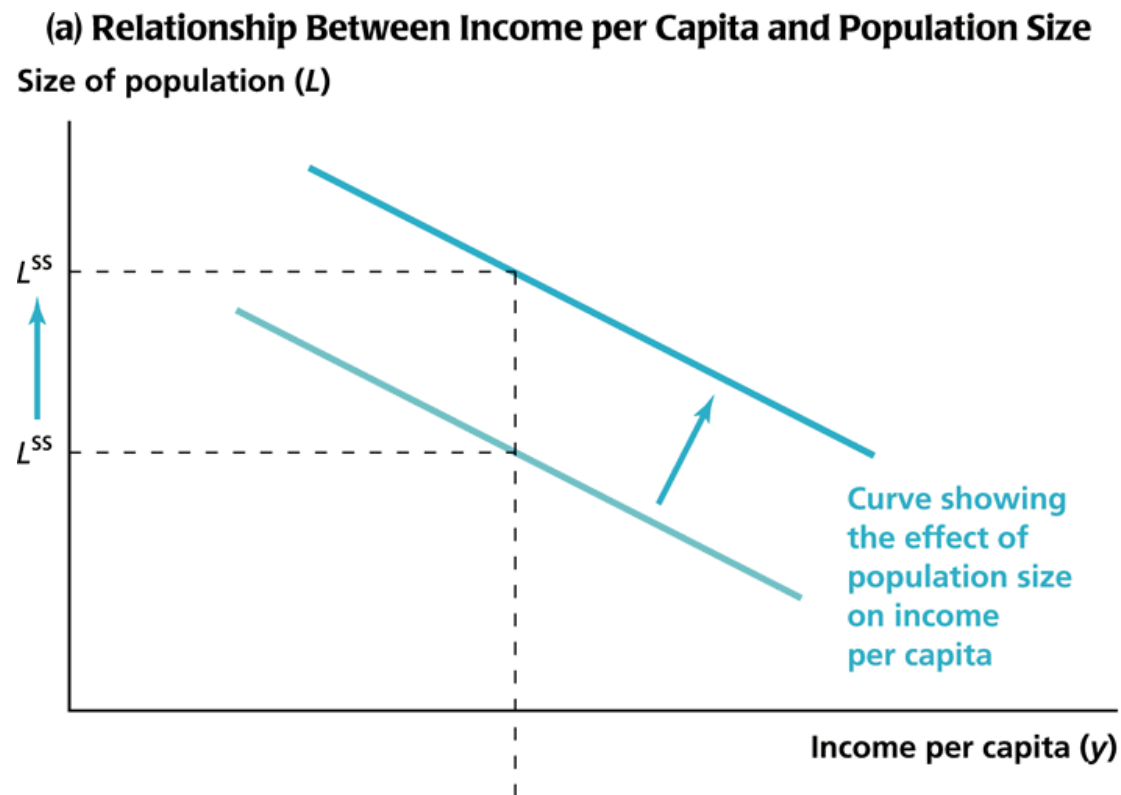
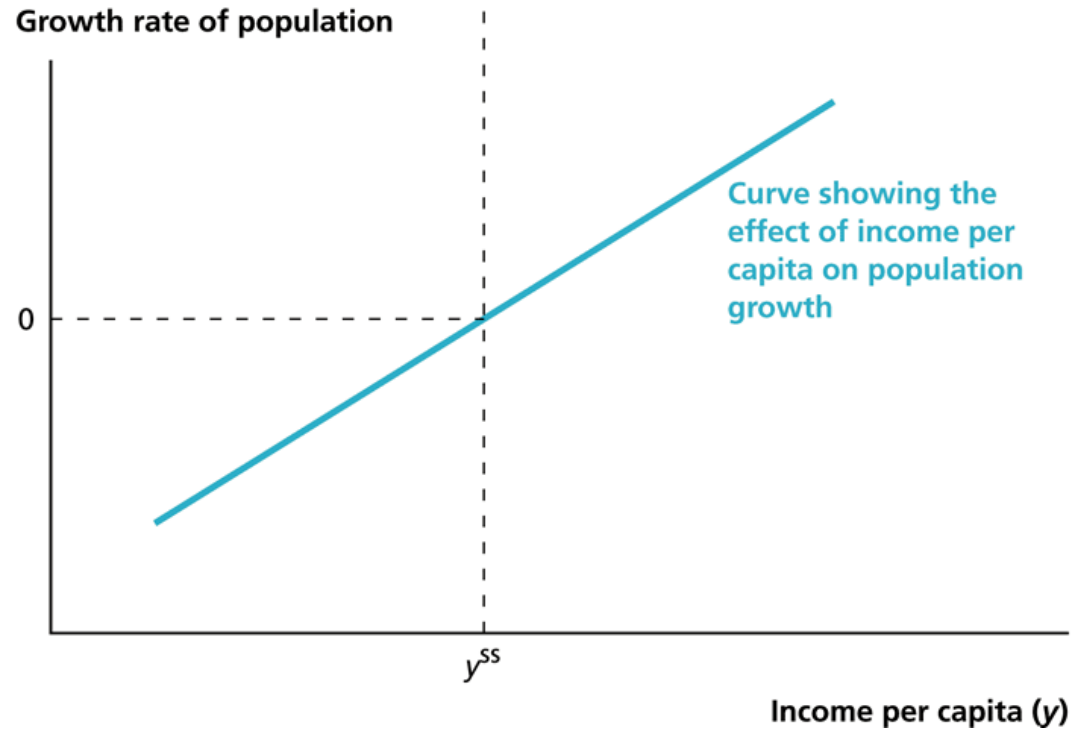


Figure 4.4b Effect of Productivity Improvement in the Malthusian Model



(b) Relationship Between Income per Capita and Population Growth



Question



- If Malthusian model predicts that improvements in productivity will not make people better off, then what will?

Figure 4.5b Effect of “Moral Restraint” in the Malthusian Model

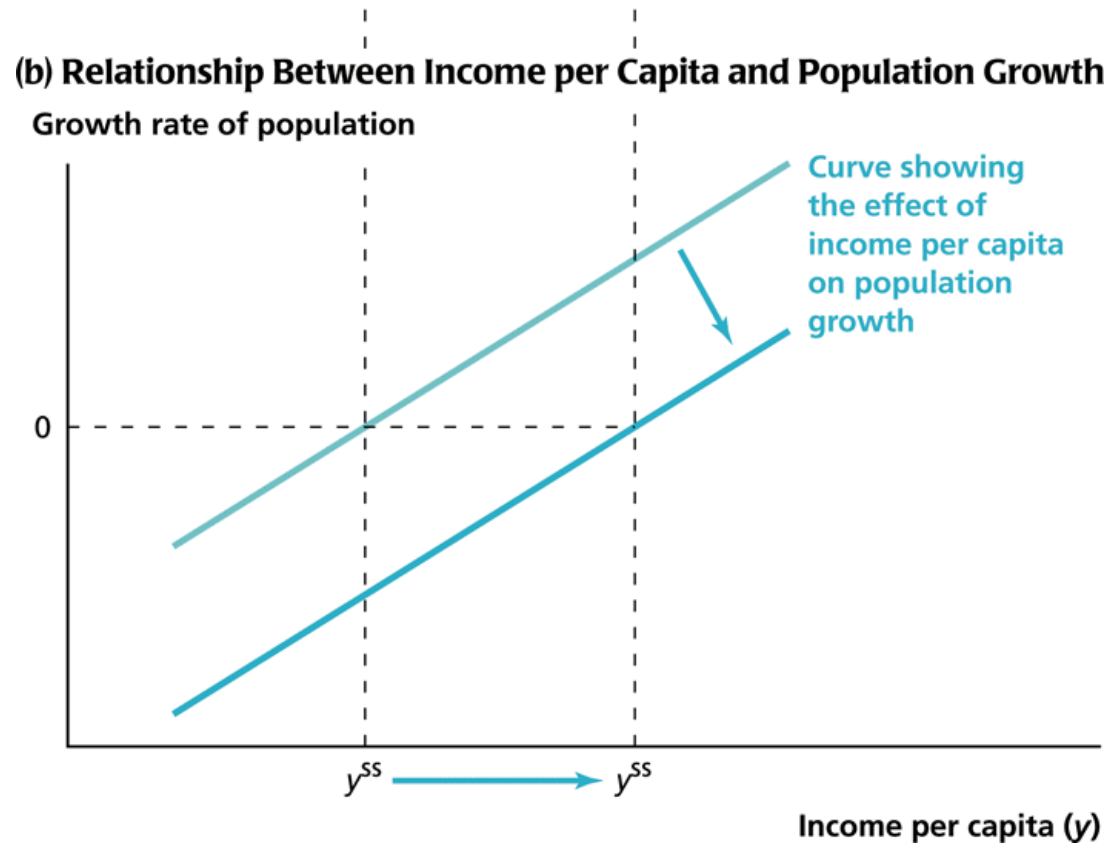


Figure 4.5a Effect of “Moral Restraint” in the Malthusian Model



(a) Relationship Between Income per Capita and Population Size

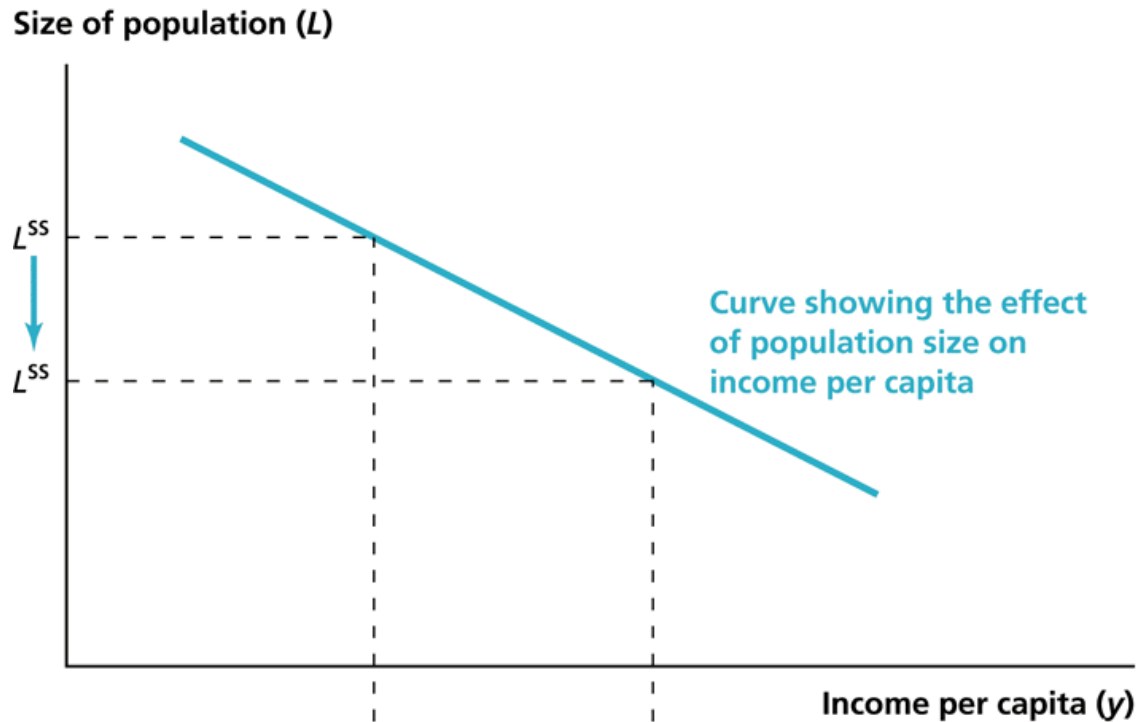
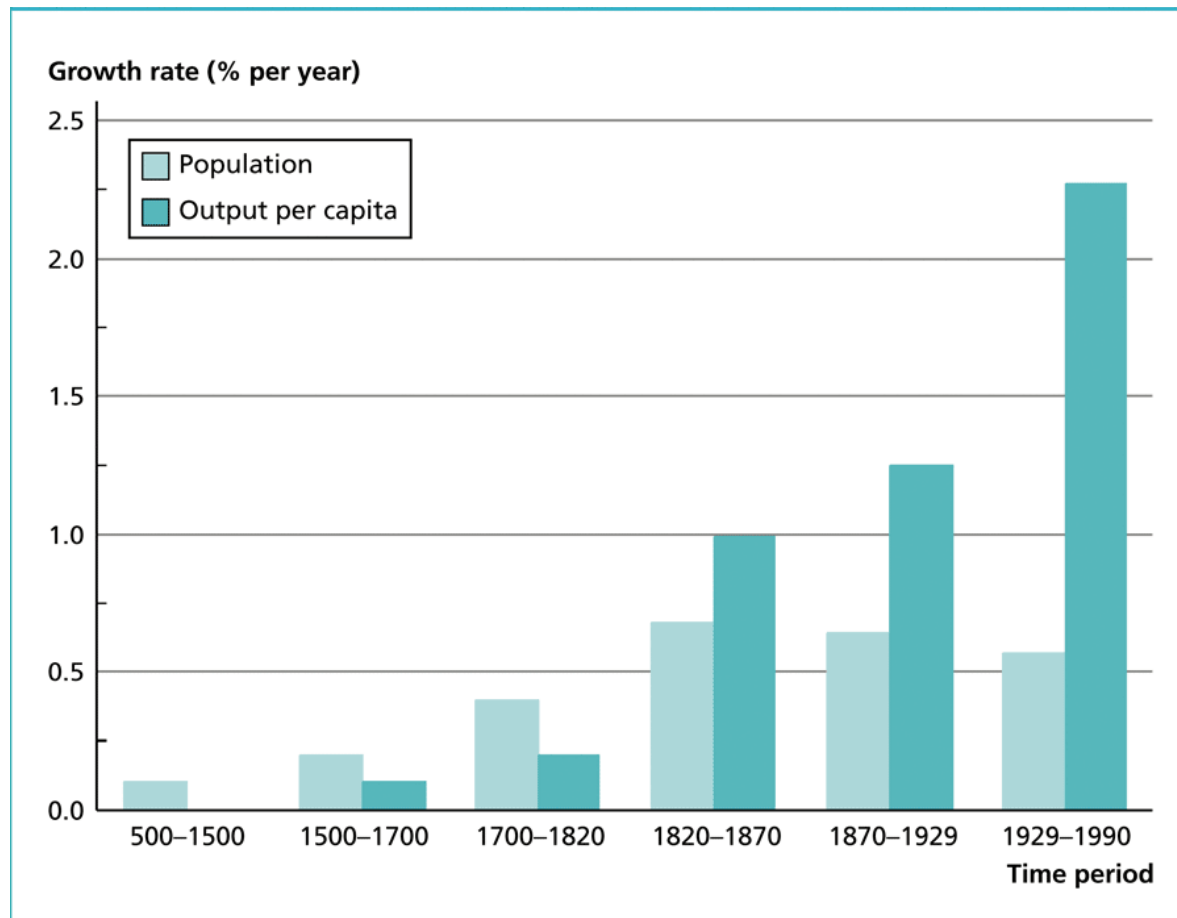


Figure 4.6 Breakdown of the Malthusian Model in Western Europe



Source: Galor and Weil (2000).

Figure 4.7 The Solow Model Incorporating Population Growth

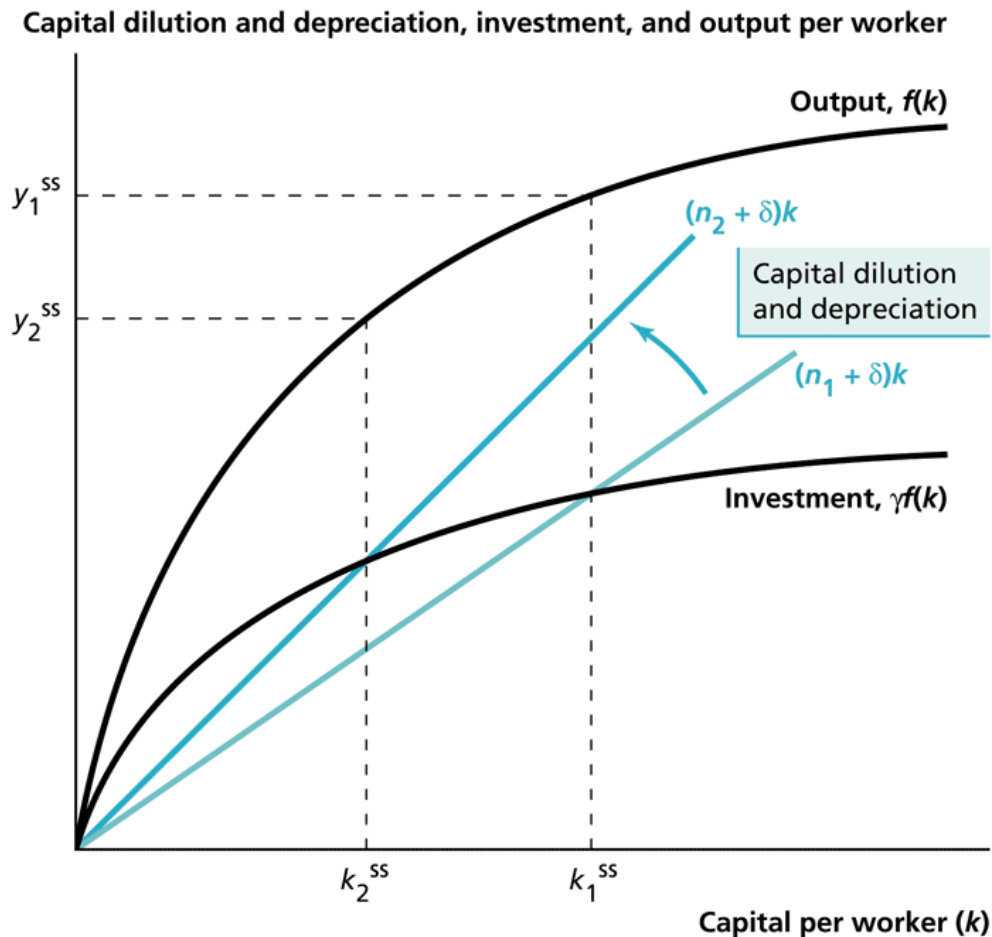
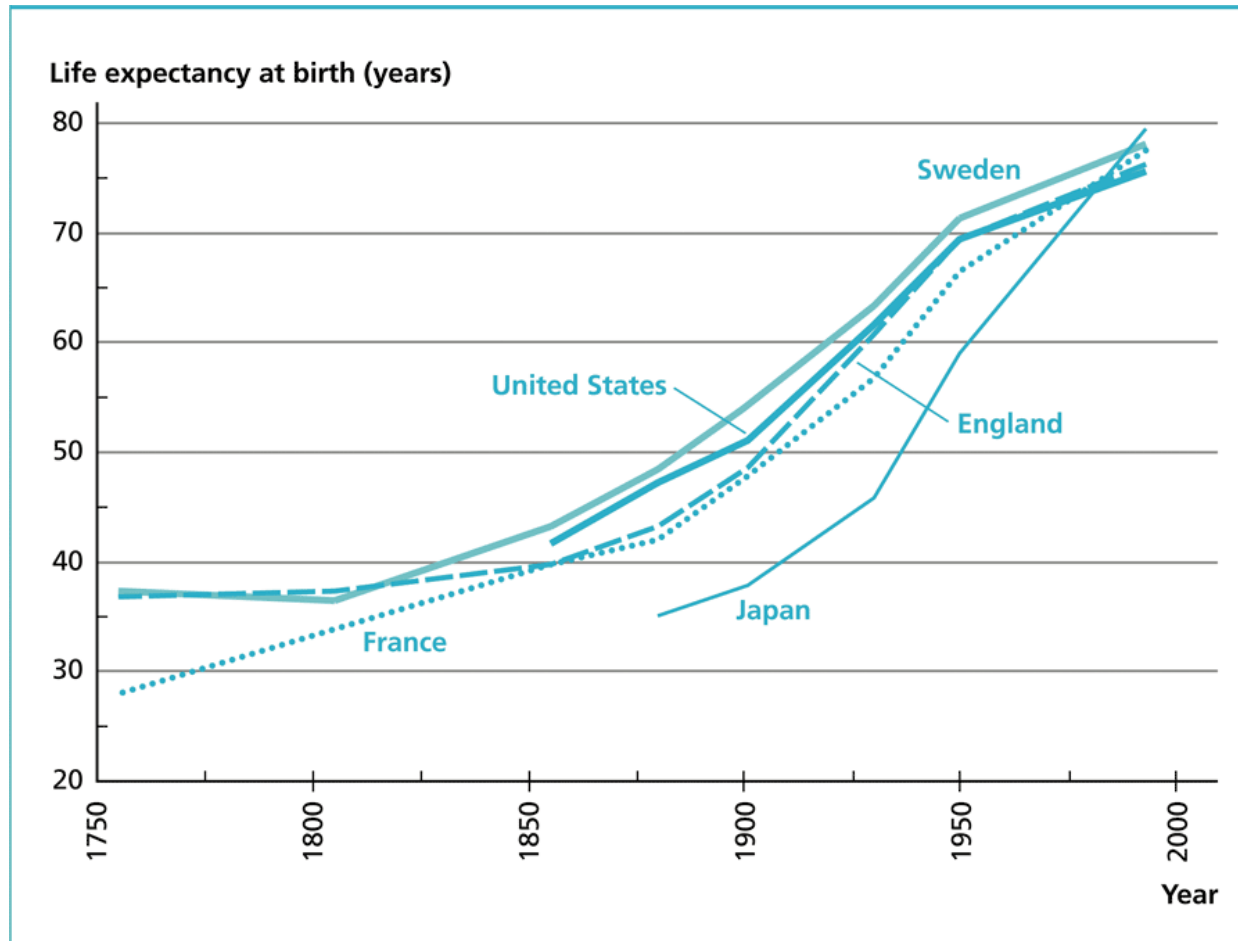
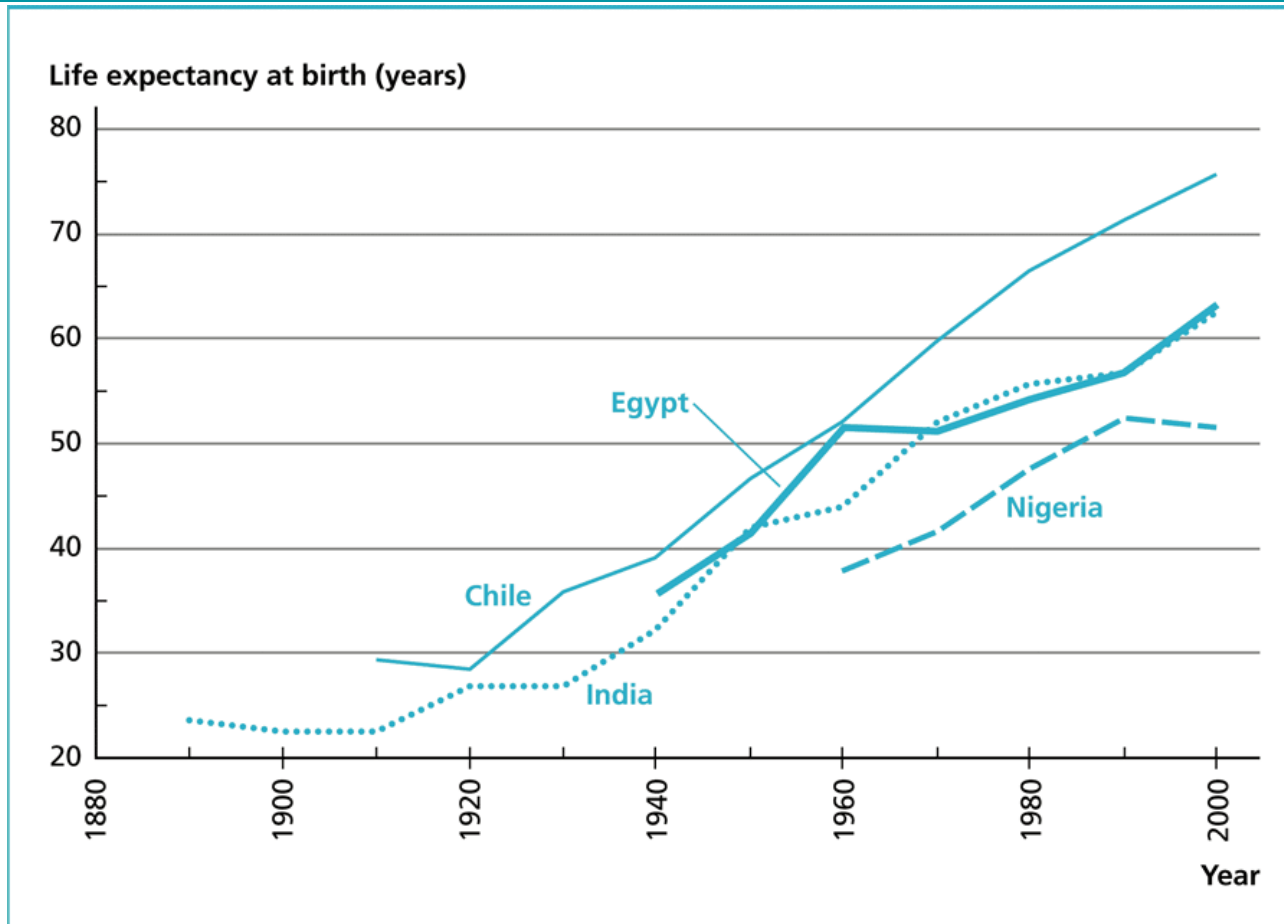


Figure 4.8 Life Expectancy in Developed Countries



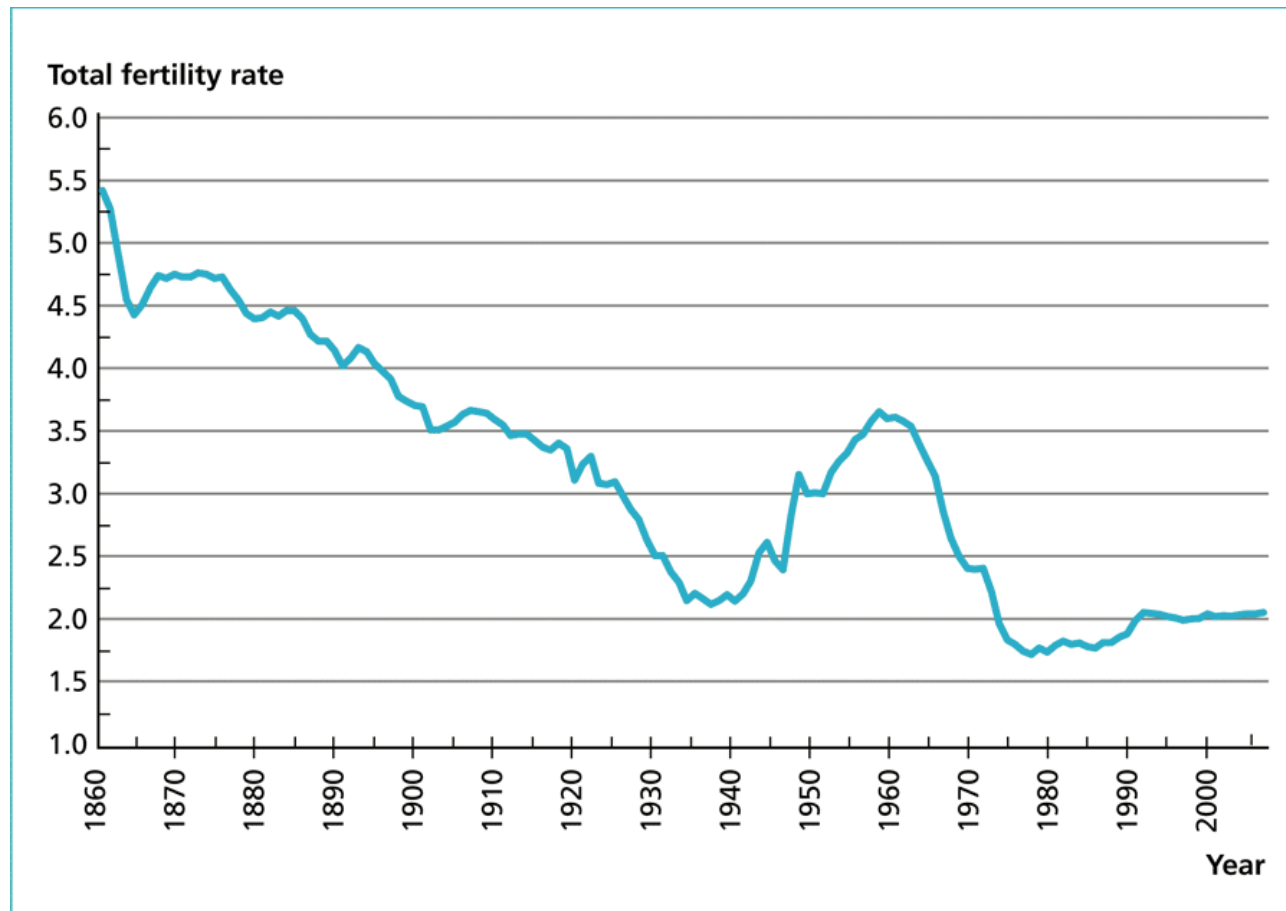
Source: Livi-Bacci (1997).

Figure 4.9 Life Expectancy in Developing Countries



Source: Kalemli-Ozcan (2002).

Figure 4.10 Total Fertility Rate in the United States, 1860–2005



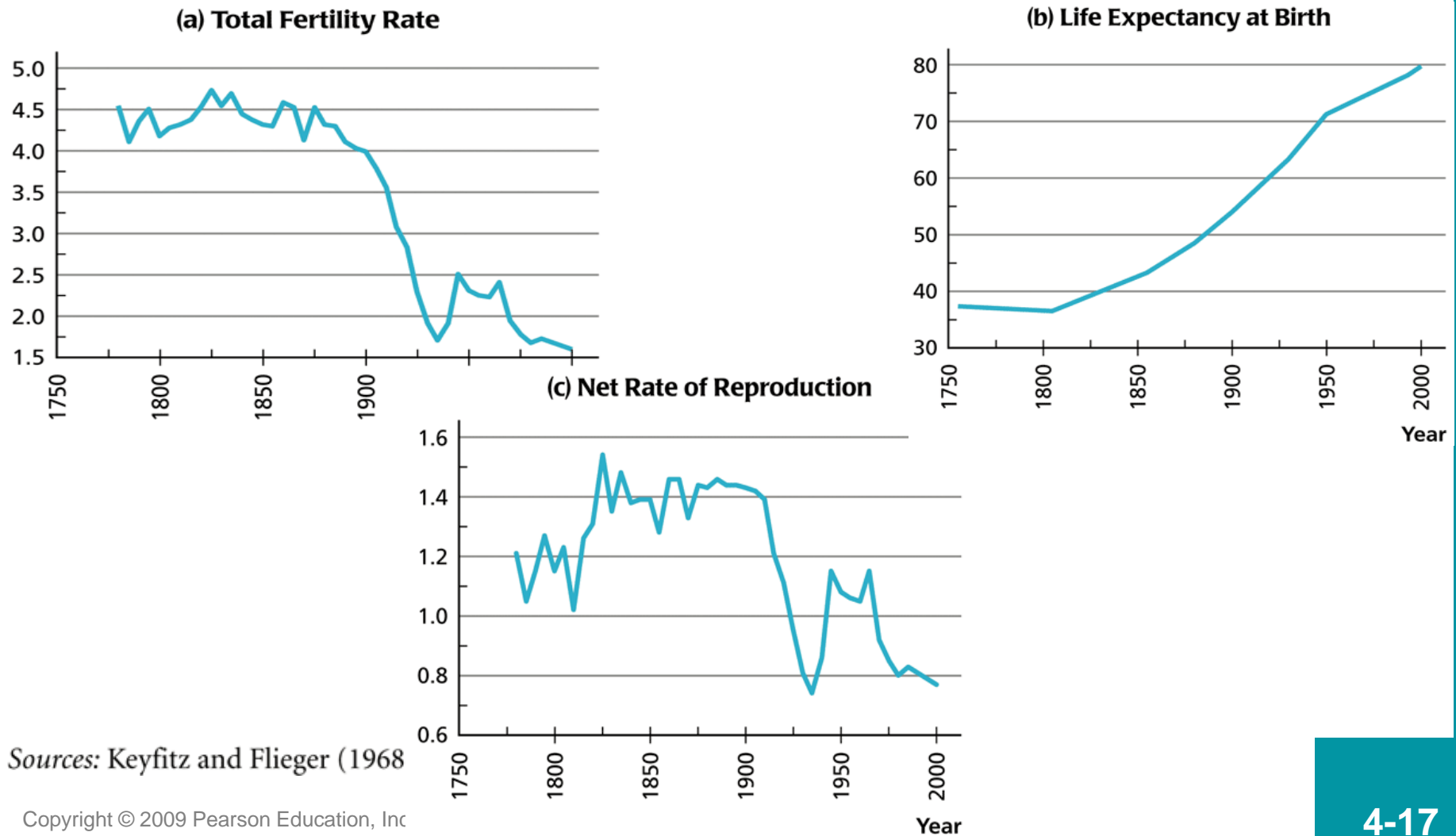
Source: Coale and Zelnik (1963), Wade (1989).

Question



- How is that **POPULATION** growth rates never approached the levels seen in developing world today?

Figure 4.11a Fertility, Mortality, and the Net Rate of Reproduction in Sweden



Sources: Keyfitz and Flieger (1968)

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Table 4.1 Demographic Data for India



Period	Total Fertility Rate	Life Expectancy at Birth	Net Rate of Reproduction
1955–1960	5.92	42.6	1.75
1965–1970	5.69	48.0	1.87
1975–1980	4.83	52.9	1.73
1985–1990	4.15	57.4	1.61
1995–2000	3.45	62.1	1.43

Source: United Nations Population Division (2002).

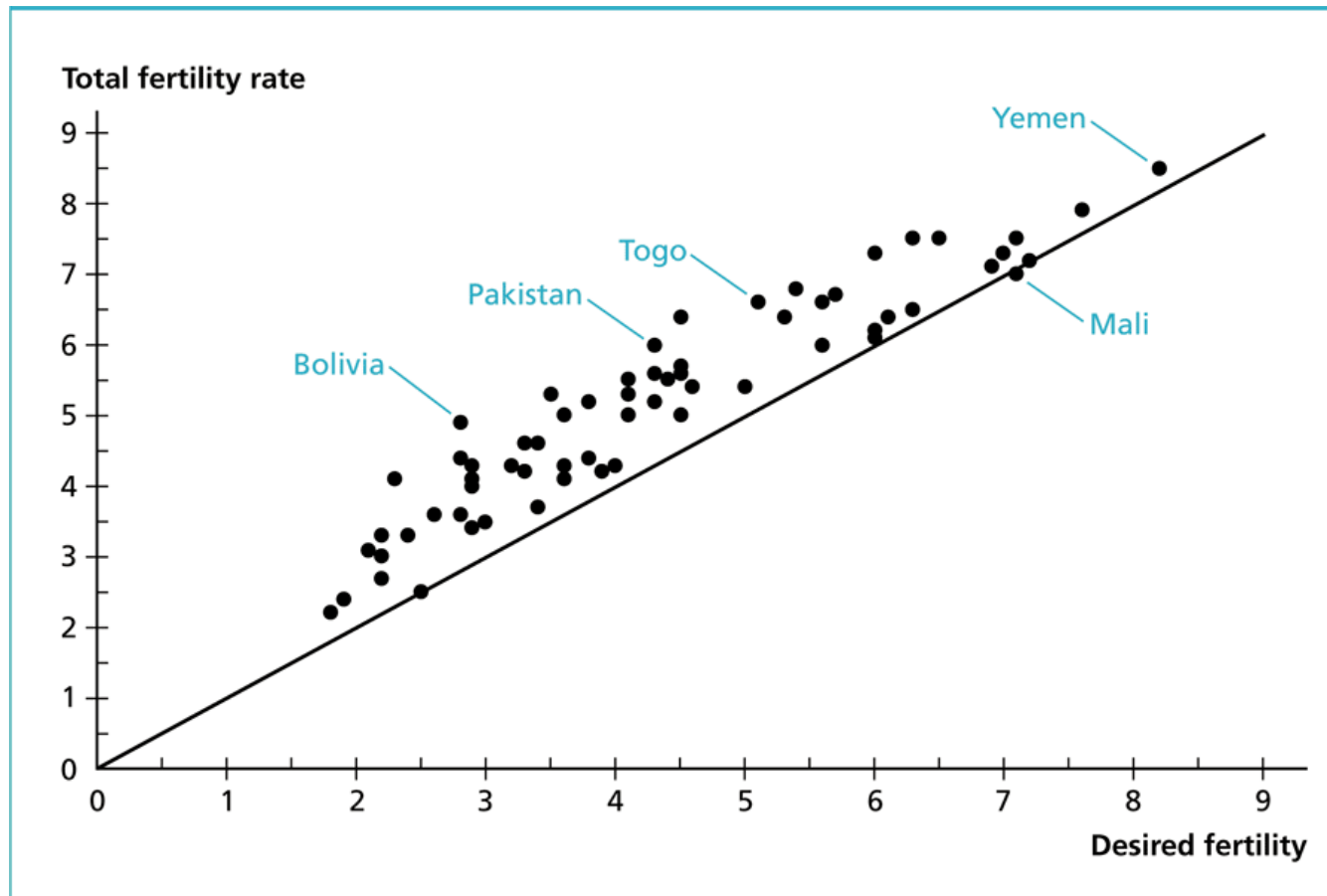
Table 4.2 Demographic Data for Nigeria



Period	Total Fertility Rate	Life Expectancy at Birth	Net Rate of Reproduction
1955–1960	6.90	38.2	1.97
1965–1970	6.90	42.0	2.12
1975–1980	6.90	46.1	2.28
1985–1990	6.70	50.2	2.38
1995–2000	5.92	52.5	2.20

Source: United Nations Population Division (2002).

Figure 4.12 Desired Fertility versus Total Fertility Rate in Developing Countries



Source: Pritchett (1994).

What drives desired fertility?



- Mortality reduction
- Income and substitution effects: also price of children rises with income. Decline in wage gap.
- Economic benefits fall while cost rises: by age 12 they could pay their own way. Also, provide for old age.
- Quality/quantity: falling mortality, higher returns from education.