

Encyclopedia of Human Geography

Demographic Transition

Contributors: Barney Warf

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Developed by several demographers during the 1920s, the demographic transition theory stands as an important alternative to Malthusian notions of population growth. Essentially, this is a model of a society's fertility (birth rate [BR]), mortality (death rate [DR]), and natural population growth rate (NGR) over time, using the simple relationship $NGR = BR - DR$. Because this approach is based explicitly on the historical experience of Western Europe and North America as they went through the Industrial Revolution, "time" in this conception is a proxy for industrialization. This approach can be demonstrated with a graph of birth, death, and natural growth rates over time that divides societies into four major stages (Figure 1).

Stage I: Preindustrial Economy

In the first stage, a traditional, rural, preindustrial society and economy, fertility rates are high and families are large and extended. In agrarian economies, children are a vital source of farm labor, helping to plant and sow crops, tending to farm animals, performing chores, carrying water and messages, and helping with younger siblings. Children also take care of their elderly parents. In societies with high infant mortality rates, having many children is a form of insurance that some proportion will survive until adulthood. Thus, the distribution of birth rates around the world reveals that the poorest societies have the highest rates in the world, particularly in Africa and most of the Middle East. In contrast, birth rates in North America, Europe, Russia, Japan, Australia, and New Zealand are relatively low.

However, in preindustrial societies, mortality rates also are typically quite high, meaning that average life expectancy is relatively low. The primary causes of death in poor rural contexts are the result of inadequate diets, unsanitary drinking water, and bacterial diseases. Thus, the world geography of death rates closely reflects the wealth or poverty of societies. Because both fertility and mortality rates are high, the *difference* between them—natural population growth—is relatively low, often fluctuating around zero. Although relatively few societies in the world live in these circumstances today, Stage I may describe certain tribes in parts of Central Africa, Brazil, and Papua New Guinea.

Stage II: Early Industrial Economy

The second stage of the demographic transition pertains to societies in the earliest phases of industrialization, such as 19th-century Britain and the United States, or selected countries in the developing world today, such as Mexico. Early industrial societies retain some facets of the preindustrial world, particularly high fertility rates. Because most people still live in rural areas, children remain an important source of farm labor. The major difference is the decline in mortality rates, leading to longer life expectancies. Mortality rates decline as societies industrialize, not primarily because of better medical care but rather because of improved food supplies due to the industrialization of agriculture that played a major role in improving immune systems, including lowering infant mortality rates. Because the death rate has dropped but the birth rate has not, the natural growth rate grows explosively, a situation evident in a great number of countries in the developing world today ([Figure 2](#)).

Stage III: Developed Industrial Economy

Societies in the throes of rapid industrialization, where a substantial share of people—if not the majority—live in cities, exhibit a markedly different pattern of birth, death, and growth rates from those earlier in the transition. Death rates remain relatively low, but in this stage **[p. 93 ↓]** fertility rates also exhibit a steady decline. Birth rates typically fall and families get smaller as societies become wealthier because urbanization and industrialization change the benefit-cost ratio of having children. In societies where large numbers of women enter the paid labor force—become commodified labor outside of the home rather than unpaid workers inside of it—mothers typically must drop out of the labor market, if only temporarily, to take care of their children. Economically, this process generates an opportunity cost to having children; the more children a couple has or the longer a mother refrains from working outside of the home, the greater the opportunity cost she and her family face. As women's incomes rise, either over time or comparatively within a society, the opportunity cost of having children rises accordingly, leading to lower fertility rates. As fertility rates decline, so too do natural growth rates.

In short, relatively prosperous societies tend to have smaller families, and there is frequently a corresponding shift from extended to nuclear families in the process.

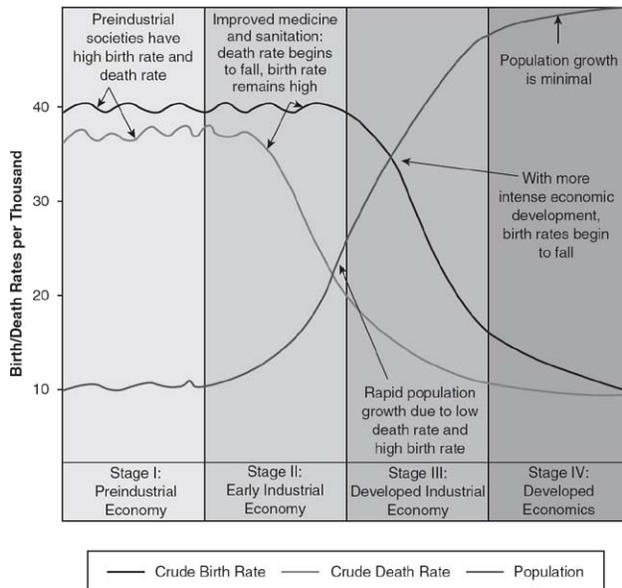


Figure 1 Demographic Transition

Stutz, F. and B. Warf. 2005. *The World Economy: Resources, Trade, and Development*. 4th edition. p. 82. Reprinted with permission from Prentice Hall.

Historically, fertility levels fell first in Western Europe, followed quickly by North America, more recently by Japan, and then by Eastern Europe and Russia. In those areas, reproductive levels are near, or even below (in some countries), the level of generational replacement. Elsewhere, however, birth rates remain at much higher levels, although in China and Southeast Asia the birth rates are dropping quickly. There has been a modest decline in South Asia, the Middle East, much of Latin America, and parts of sub-Saharan Africa.

Stage IV: Developed Economics

The fourth and final stage of the demographic transition depicts wealthy, highly urbanized worlds, a context indicative of Europe, Japan, and North America. Such societies typically witness low death rates, the causes of which may change from infectious diseases to lifestyle-related ones, particularly those associated with smoking and obesity as well as, to a lesser extent, car accidents, suicides, and homicides. Birth rates also continue to fall in such contexts as many couples elect to go childless or to have only one child. When birth rates drop to the level of death rates, a society reaches zero population growth. When birth rates drop below death rates, as they have in virtually all of Europe and Japan, a society experiences negative population growth. Such countries are characterized by large numbers of the elderly, a high median age, and a relatively small number of children, all of which have dramatic implications for public services.

Globally, uneven economic development generates uneven patterns of natural population growth (Figure 2). The most rapid rates of increase are found throughout the poorer parts of the developing world, including [p. 94 ↓] Africa, the Arab and Muslim worlds, India, and Indonesia. In contrast, low rates of growth are found in the economically developed nations, including North America, Japan, Europe, Australia, and New Zealand.

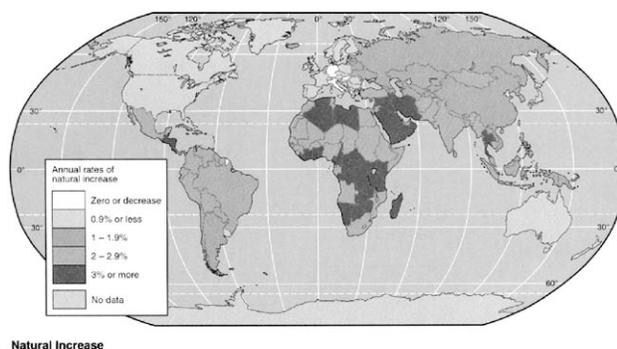


Figure 2 Map of Natural Growth Rates Around the World

Stutz, F. and B. Warf. 2005. *The World Economy: Resources, Trade, and Development*. 4th edition. p. 91. Reprinted with permission from Prentice Hall.

Criticisms of Demographic Transition Theory

Although the demographic transition has wide appeal because it links fertility and mortality to changing socioeconomic circumstances, it has also been criticized on several grounds. Some critics point out that it is a model derived from the experience of the West and then applied to non-Western societies as if the latter are bound to repeat the exact sequence of fertility and mortality stages that occurred in Europe, Japan, and North America. There is no inevitability ensuring that the developing world must follow in the footsteps of the West. Some have pointed out that the developing world is in many ways qualitatively different from the West, in no small part because of the long history of colonialism. Furthermore, demographic changes in the developing world have been much more rapid than in the West. Whereas it took decades, or even centuries, for mortality rates in Europe to decline to their modern levels, in some developing countries the mortality rates have plunged in only one or two generations. Because mortality rates do not vary geographically as much as fertility rates, most of the spatial differences in natural growth around the world are due to differences in fertility.

Barney Warf

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See also

Suggested Reading

Jones, G., ed. , Caldwell, J., ed. , D'Souza, R., ed. , & Douglas, R. (Eds.). (1998). *The continuing demographic transition* . Oxford, UK: Clarendon.

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