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Theories of Population

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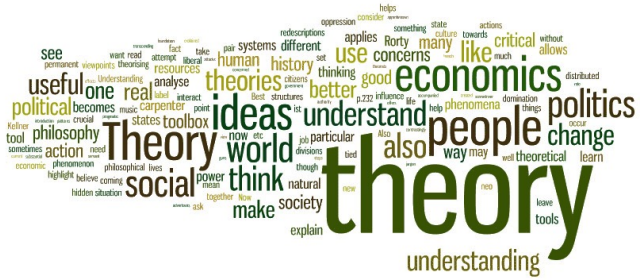

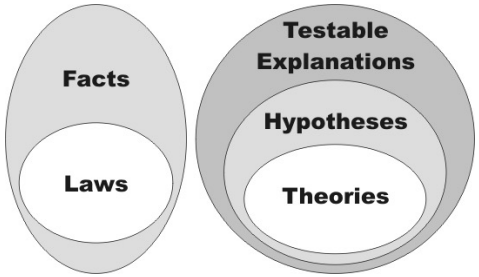

1. **Introduction**
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Introduction

- In this section, population change theories, the importance of these theories and evaluations that will help to understand future demographic changes will be made.
- Two important questions often come to the fore in discussions of population growth:

➢ **Will population growth stop in the coming years?**

➢ **So if it will stop; when?**

- Assuming for a moment that population growth has stopped around the world, it means that one of three things has happened:

1. **Birth rate has decreased**
2. **The death rate has increased**
3. **A very good combination of both has occurred.**

(Non-migration, zero population growth that appears when births and deaths are equal)

The gap between the world's current crude birth rate (18 per thousand) and crude death rate (7.5 per thousand) (10.5 per thousand or 1.05%) is too large to close in a short time.

For now, it is a very difficult issue to stop the rapid population growth and to predict that it will stop.

- **Various alternative assumptions can be made regarding future population growth.**

(1) With a rapid increase, the population will exceed the capacity of the world. Mortality rates will also increase due to the lack of food that will arise due to its overcapacity. However, due to increasing deaths, the population will fall below the carrying capacity.

(2) Rapid population growth, which causes various deteriorations in carrying capacity, will result in catastrophic results. Therefore, there will be a significant reduction in population size.

(3) Population fluctuations will continue under and above the carrying capacity. After a long period, the carrying capacity will be exceeded.

(4) Before the carrying capacity of the earth is reached, the rapid increase in population will be able to be regulated.

(5) The continuous increase in the carrying capacity of the earth often outstrips the increase in population.

These options for the future are, of course, a matter of speculation. However, various theories and models of population growth have been formulated to explain changes in birth and death rates.

- **Theories (or theories) help us understand the complexity of social life. It not only explains why people do something, but also gives us insight for research.**

- **Theories play a critical role in advancing knowledge and organizing the way we do research. The theory has many definitions:**

1. A theory is a general set of logically connected propositions that establish a connection between two or more variables.
2. A theory is a description of a particular social phenomenon that describes a set of causally related factors or conditions.
3. Theory is a way of providing an understanding of the true meaning of a social phenomenon by offering an illuminating interpretation and telling us "what it is all about."
4. Theory is the whole worldview or method of seeing, interpreting and understanding events in the world.
5. A theory is a philosophical commentary on fundamental questions or issues about how we develop knowledge about the social world.

- The purpose of the theories that connect the various results drawn from empirical studies is to obtain a conceptual structure with the help of integrated rules and laws.

- According to Abler, Adams, and Gould (1971:45), "theory is the basic structure of all sciences, and a science with no theoretical aspect is like a ship without a rudder, which drifts aimlessly and gets nowhere except with good luck".

- The theory helps to explain the available data and guides to make predictions. Geographers, demographers, and other population dynamics seekers have also attempted to theorize.

- Population geography, demography, and other social sciences are relatively weak in theory development compared to the physical sciences. However, attempts at theory building have gained momentum in the last few decades.

- Conceptualizing (theory development) is difficult because explaining something depends on causality, which requires defining and measuring a set of variables.
- The necessary variables may differ across societies/cultures and may intersect on gender, ethnic, national, religious and class terms.
- When these issues are entered, it becomes a political and philosophical language full of variables, spiritual assumptions and pre-beliefs. This leads us to a difficult and unclear distinction between ideology and science.
- Despite the constant emphasis on models and theories in population geography; geographers initially gave more importance to logical positivism.
- Social scientists today conduct research with ideas ranging from postmodernism and deconstruction to Neo-Marxism and feminist theory. Although the impact of new trends (critical population geography) fed by social theory on population geography is relatively limited, it is gaining more and more attention.

- Population theories can be classified as primary (main) and secondary (secondary) theories.
- Primary theories have been developed to explain demographic behavior.
- If the purpose of the generated theory is to identify specific factors related to fertility, mortality or migration, these are primary theories.
- Secondary theories aim to analyze a broader phenomenon with demographic implications.
- A theory is a secondary theory if its primary concern is social class, economic behavior, or some other non-demographic phenomenon, but its findings are of demographic significance.

Introduction: Classification of Population Theories

- Primary and secondary theories may fall within one of the naturalistic or environmental categories.
- Naturalistic theories emphasize the role of biological processes and often ignore the adaptive capacity of humans.
- Environmental theories, on the other hand, try to explain demographic behavior with the help of various processes that can change in time and space (Thomlinson, 1976).
- Environmental theory is of greater interest to researchers today, as the concept of the environment refers to both the physical and cultural environment.
- Although heredity fulfills an important function, the perspective that human events are controlled by culture has begun to gain superiority (Peters & Larkin, 2005).

- If one wants to better understand the causes and consequences of population processes and to have the ability to predict the future course of demographic events, it is necessary to go further than descriptions and rely on movement. It is necessary to grasp the insights of demographic and non-demographic variables and their interactions that can change according to space and time.
- Because demographic systems operate in cultural settings, it is difficult and complex to conduct research to make statements with worldwide validity.
- Models and theories increase our ability to relate demographic change to socio-economic variables that affect other population dynamics.

Early Population Theories

- It is not surprising that few philosophers have paid attention to the subject of human population in the past, given that they lived in a world with fewer humans than we do.

- Perhaps a more common belief about population before Malthus, it is the thought that population growth is good and decrease is bad (Peters & Larkin, 2005).

- Most of the early views on population and fertility originated as folklore. According to Eversley (1959: 281) the general opinion of the people of that period was, "Luxury life prevents having children…intellectual interests and kindness reduce reproductive power…and those with mental retardation breed like rabbits".

- Such ideas have been popular with the masses throughout human history, and are still held by a significant number of people.

- In a sense, population growth was not seen as a problem, related with the widespread belief in the Islamic world that "every child is born with sustenance".

Early Population Theories

- In the pre-modern era, the center of gravity of population is largely the relations between population and economic resources (or production). At that time, prosperity and material progress depended heavily on a manual labor force. The increase in the workforce was seen as a path to prosperity.

- With the effect of mercantilism, “more population in a country means that the production would be that much” was common.

- High mortality rates prevailed throughout most of human history, and overcoming the negative effects of death required having a large number of children (Peters and Larkin, 2005).

Early Population Theories

- The Spartans thought that a healthy and young population was needed to meet the human losses caused by the wars, so the population should increase, the weak should be killed, and marriages should be compulsory.

- There were also utopian dreams in pre-modern times.

- Plato and Aristotle's idea of a harmonious balance in terms of material and spirituality was that "the population should neither be allowed to increase nor decrease" (Hernandez, 1974: 146).

- This idea can be formulated as: Ideal population for ideal state.

Malthus

Thomas R. Malthus *(1766-1834)*

- **The most striking of the views put forward by the so-called Classical School on population belongs to Malthus.**
- **Thomas R. Malthus's research (An Essay on the Principle of Population as Influencing the Future Improvement of Society), in which he expresses his concerns about the limited availability of agricultural land and the availability of sufficient food for an exponentially growing population, forms the mainstay of the Malthusian approach.**

Malthus

- **Malthus, realizing that the increase in the population of England increased poverty in some regions, put forward a pessimistic theory.**

- In his theory of growth, in which he included population and resources, he assumed that the amount of arable land is constant, and claimed that food production would increase at decreasing rates in accordance with the law of diminishing returns.

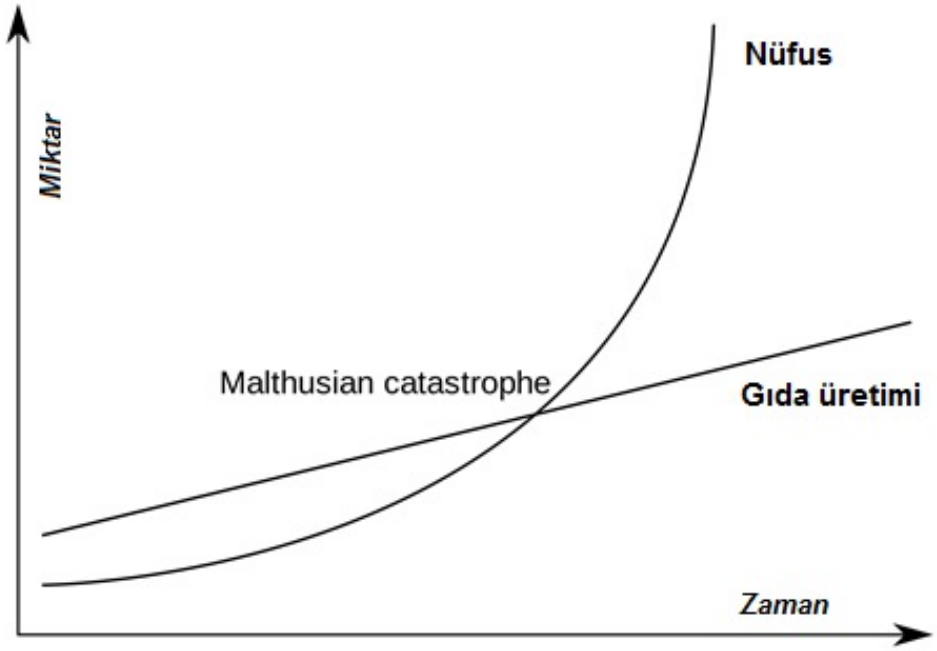
- **Malthus argued that new agricultural areas can be opened; however, this could not happen quickly and that these areas would be more unproductive than the existing lands (Aslan, 2010).**

- In this approach, it has been concluded that economic growth cannot be sustained in the long run by accepting that economic growth has ecological limits.

- **For this reason, those who advocate the Malthusian approach are called "doomsayers".**

Malthusian Approach

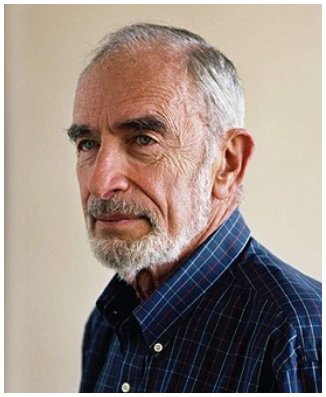
- According to Malthus, there is a mismatch between the production of foodstuffs and the rate of population growth.
- According to Malthus, if not controlled, the population tends to grow exponentially (1, 2, 4, 8, 16, …) and food production arithmetically (1, 2, 3, 4, 5, ...)



Malthusian Approach

- **Malthus argued that due to environmental constraints, the exponential growth of no living species could not continue indefinitely, and eventually the environmental carrying capacity would hinder this growth at some point.**
- For this reason, Malthus was among the first to draw attention to the natural resource limits of the world by evaluating the agricultural areas and food production capacity, which were scarce resources in his time, together with the rapidly increasing population.
- **This disequilibrium trend between food and population growth rates; the poor will not marry (or the rich get married) and the marriage will be delayed, or a balance will be achieved between these two ratios as a result of wars and famine in the long run.**
- Therefore, if population growth is not controlled, living standards will fall to the minimum level.

Neo-Malthusians

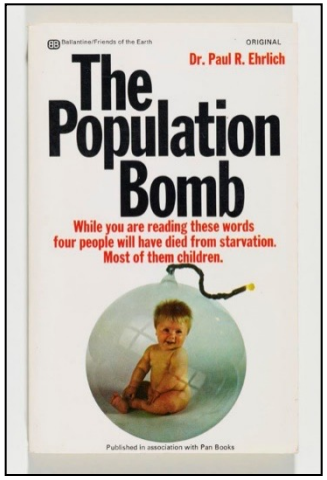


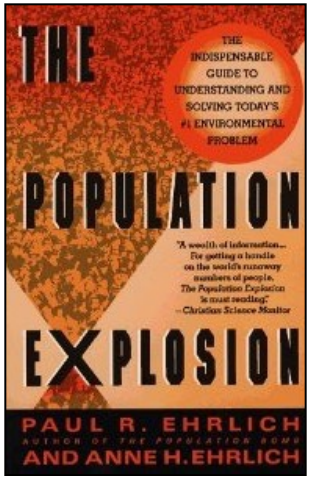
Paul R. Ehrlich *(1932- …)*

Garrett James Hardin *(1915-2003)*

- **Led by two prominent spokespersons, Paul Ehrlich and Garrett Hardin, in the late 1960s, New Malthusianism, which created a remarkable public interest that population growth was a problem, has since been a trend that has had followers around the world.**
- The New Malthusians not only argue that population growth will create problems in providing food, as in Malthus; associates this increase with environmental problems.
- **The New Malthusians see the negative consequences of rapid population growth in poverty as well as the deteriorating quality of the earth as a home for people.**

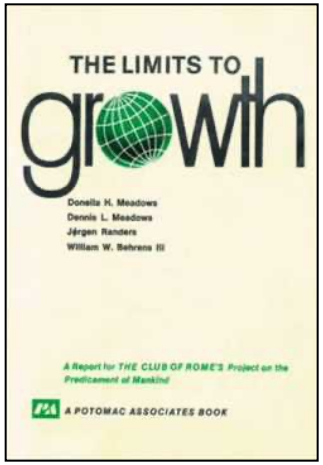
Neo-Malthusians

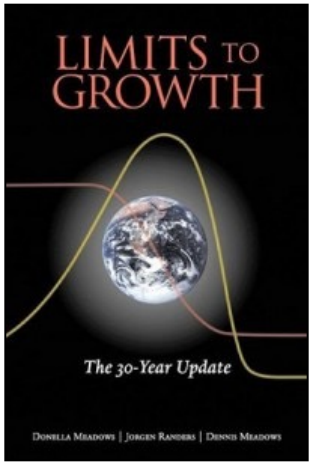




- The New Malthusians go far beyond Malthusian moral constraints by promoting family planning with all forms of contraception (and even abortion) as a means of controlling population growth.
- In his book, The Population Bomb, Ehrlich (1968) addressed the important issues of rapid population growth, such as uncertain and inadequate food supply and environmental degradation. Ehrlich and Ehrlich (1990) re-evaluated the population issue in the context of its relationship with environmental and other problems in their work, and as a result, drawing attention to global environmental security, they say that "humanity is attacking nature and we must always remember that we are running towards the end of nature".

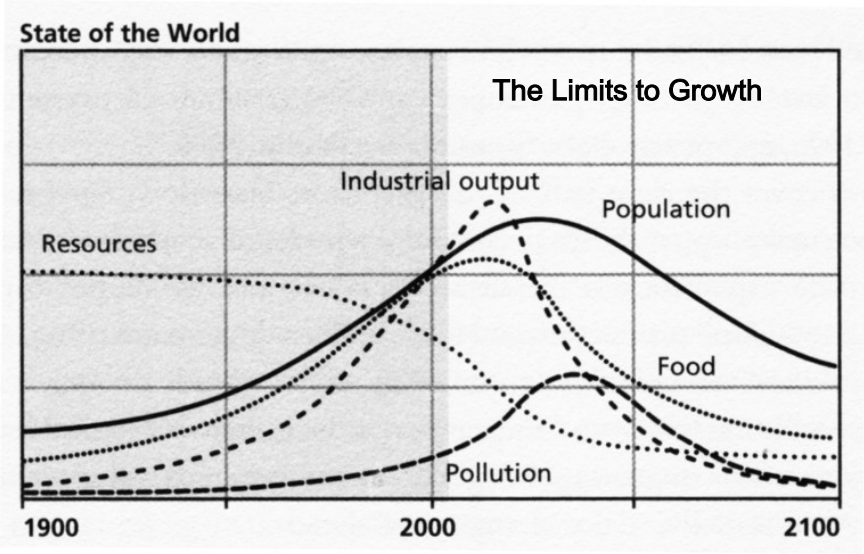
Neo-Malthusians: Limits of Growth





- One of the important contributions to the Malthusian approach was the work of a group of people gathered in 1968 and later known as the Club of Rome, which was addressed as the "Problems Threatening Humanity Project" and published under the title "The Limits to Growth" in 1974.
- In the study, in which Forrester's system dynamics technique was used, a world model was created to predict the future effects of continuous exponential growth under different assumptions (Aslan, 2010).
- If the continuous exponential growth of these elements, seen in the figure on the right, is not controlled in the model; Various conclusions have been reached that it will lead to disaster. That is why Forrester and Meadows et al. (1990) work overlaps with Malthusian theory.

Neo-Malthusians: Limits of Growth

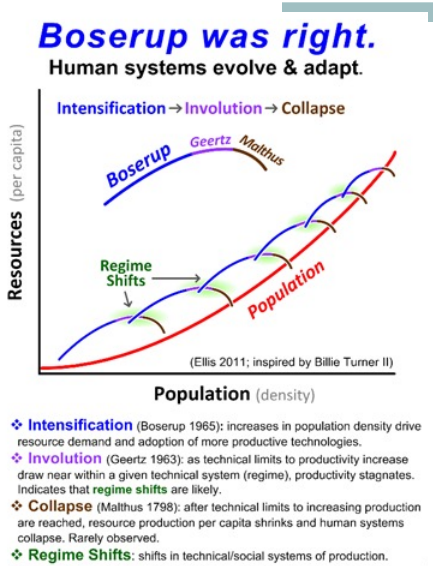


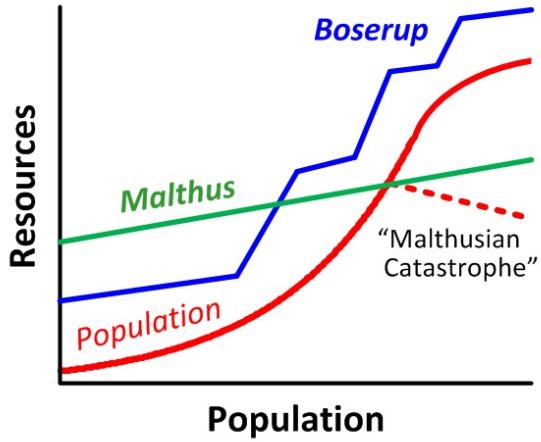
- According to the model, there are five basic elements that interact through feedbacks that determine and limit economic growth in the world:

1. Population
2. Agricultural food production
3. Consumption of non-renewable natural resources
4. Industrial output
5. Environmental degradation and pollution

Boserup

Ester Boserup *(1910-1999)*





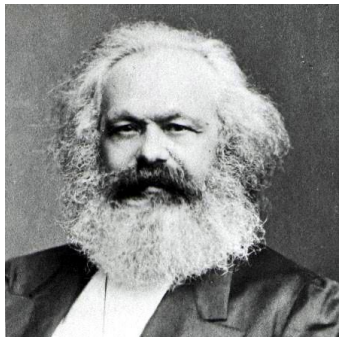
- Ester Boserup, a Danish economist, made another claim about the relationship between population growth and food supply, which in many ways contradicts Malthus's claim.
- Boserup(1965) treats population growth as an independent variable rather than basing it on agriculture and seeing it as a dependent variable, as Malthus claims.
- She argues that population growth is an important factor determining agricultural developments, in essence population growth and critical population densities motivate agricultural innovations and changes.

- **Boserup has proposed intensification in agriculture, that is, a gradual shift towards land use patterns where it is possible to grow more intensively in a given area than ever before. She argued that by working harder and farming more intensively, people could cope with a growing population.**

- Boserup (1981) further developed her thesis in a later study, in which he emphasized that population growth under certain conditions stimulated technological change. She eventually acknowledged that high population growth rates put an overload on systems.

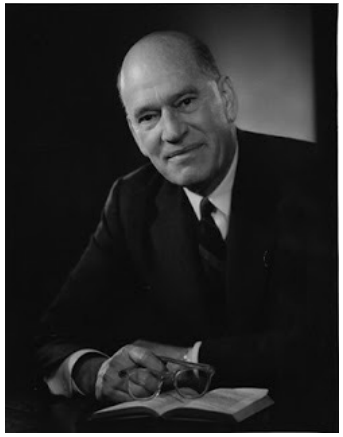
- **Agricultural intensification still continues in the underdeveloped world. However, as in various regions of Africa, while agricultural production increases in total, per capita production remains the same or decreases. Therefore, these and similar situations lead to criticism of Boserup's theses.**

Marx



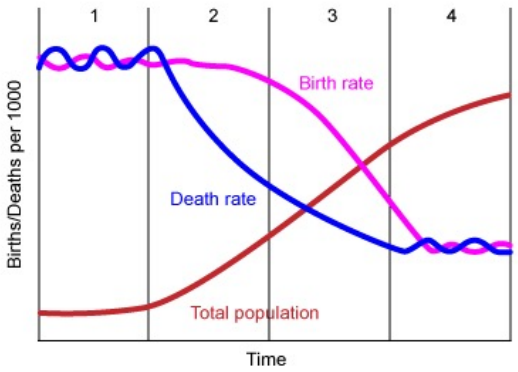
Karl Marx *(1818-1883)*

- **Another point of view that contradicts the basic Malthusian ideas about population belongs to Karl Marx.**
- Marx believes that food and resource production, subsistence activities can outpace population growth, but poor people are denied access to food and resources in the capitalist system.
- **Marx argued that if poor people had control over their means of subsistence (equal distribution of equipment, knowledge, wealth), they would increase the production of goods and services far above population growth, and that this solution was hindered by the operation of the means of production by the rich and private owners.**
- In essence, Marx argues, population growth is not a problem, the real problem is the poor distribution of resources.



Frank W. Notestein *(1902-1983)*

- The demographic transition can be developed to aim at ordering demographic regimes around the world. Globalization is necessary for demographic adjustments.
- The demographic transition is a generalized one of the targeted outcomes of mortality, fertility, and growth rates as societies move from one demographic regime to another.
- The term was first coined by the twentieth American demographer Frank W. Notestein. But it has since been elaborated and expanded by many.



- **The original demographic transition theory(model) is based on historical observations of demographic change in Western European countries.**
- The data of the transition model showed the changes in survival rates held in England since 1700, and this allowed the descriptive transition model to be idealized.
- **The gap between birth and death rates in Europe was closed not by the increase in the death rate, as Malthus had predicted, but by the decrease in the birth rate. A more or less new demographic stagnation was reached, first in northwestern Europe and then elsewhere.**
- This is known as the demographic transition from a stable demographic with high birth and death rates to another stable with low birth and death rates.

Stages of the Demographic Transition

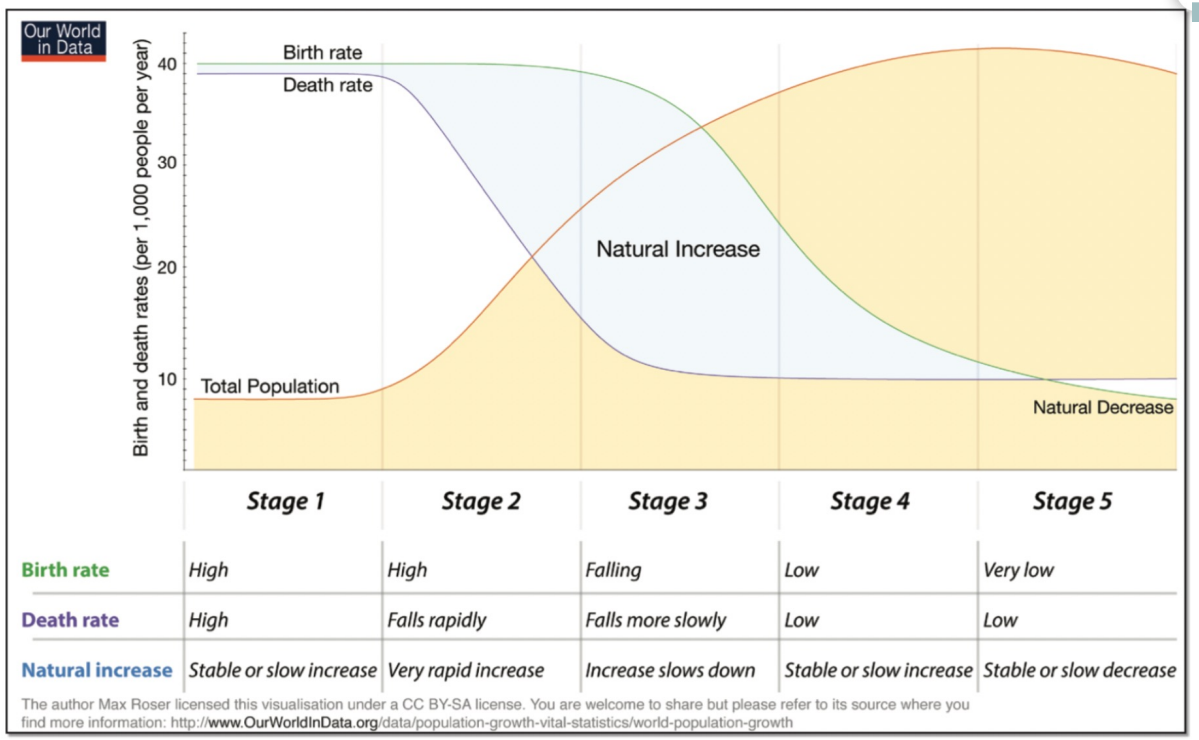


Figure 2.16 | Demographic Transition Model
Author | Max Roser
Source | Wikimedia Commons

- The demographic transition model suggests the existence of a deterministic causal relationship between modernization and the decline in fertility and mortality.
- Conceptually, this can be viewed as an idealized series of phases through the passage of a given population, and is a stable demographic pattern with low birth and death rates achieved as a result.

Stages of the Demographic Transition

STAGE 1: High Stability Phase

Dominant agriculture and traditional lifestyles
Strong underdevelopment
High birth rates
High death rates
Slow growing population

STAGE 2: Early Developmental Stage

Industrialization-modernization
Economic development
A different line of population development
High birth rate
Mortality rate tends to decline rapidly
Increase in food supply, with improvements in health, birth rate remains high but death rate drops sharply

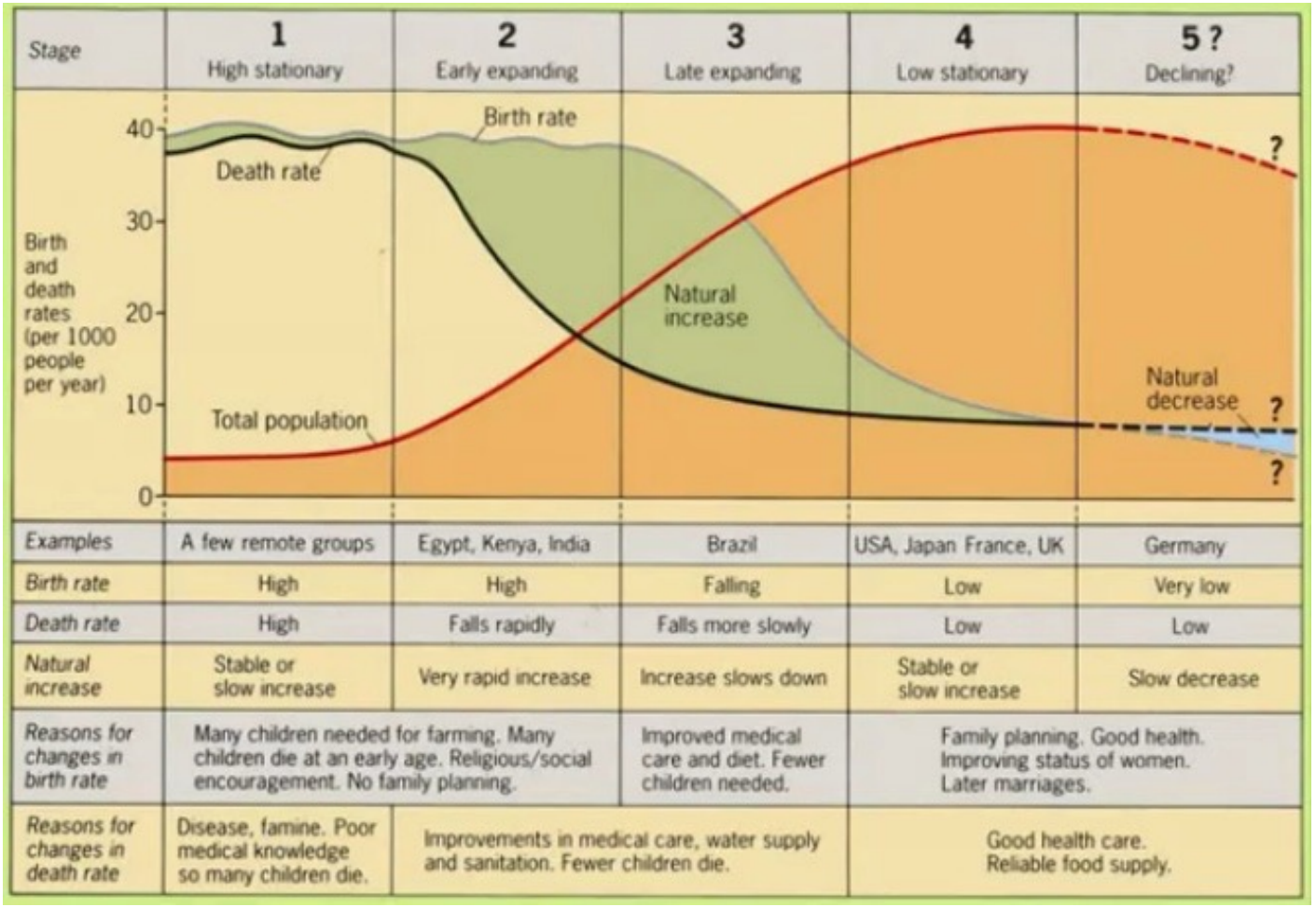
STAGE 3: Late Developmental Stage

- Distancing from tradition as a result of industrialization, modernization and urbanization
- Increasing education level
- Decreased desire to have children in cities
- Increasing first marriage-age
- More women's involvement in urban jobs, a sudden drop in fertility, and a slowdown in the natural rate of population growth

STAGE 4: Low Stability Phase

- Urban population with high proportion
- Education that reaches everyone
- Increase in the number of women working in non-agricultural jobs
- Postponing motherhood or not wanting children
- Birth rate falling almost to death rate
- Little increase or decrease in population
- In developed economies, the population is aging and moving away from the level of renewal.

Stages of the Demographic Transition



Stage	1 High stationary	2 Early expanding	3 Late expanding	4 Low stationary	5? Declining?
Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	High	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	
Reasons for changes in death rate	Disease, famine. Poor medical knowledge so many children die.	Improvements in medical care, water supply and sanitation. Fewer children die.		Good health care. Reliable food supply.	

Demographic Transition: Validity of the Model

- The demographic transition model has held an important position for many years. More recently, its validity, especially its applicability to developing countries, has been questioned.
- Conditions in today's developing countries are quite different from those in developed countries, especially in Europe in the mid-18th century. Therefore, there are doubts that they will repeat the demographic transition experience of developed countries.
- Changing socio-cultural, economic and political context differences in time and space; It probably distinguishes the demographic transition of the developing world from the classical transition of the developed world and differentiates its consequences.
- The differences between Europe's experience and the potential transition experience of today's developing world, and their potential impact on demographic change in developing countries, are discussed below.

1) Population Growth

- **Population growth in developing countries is occurring at unprecedented rates.**
- Africa is the fastest growing region in the world with a natural increase rate of 2.6% in 2018 (PRB, 2018). However, very few European countries have completed their demographic transitions with a population growth rate of over 1.5% per year.
- **Population growth in developing countries is accompanied by many problems.**
- One of the major problems accompanying rapid population growth is the increase in population-related demand for food, services and social investment (especially education). Although European countries are not affected much by these difficulties; most of the developing countries today have to face severe problems and the difficulties of living standards increased by population growth (Peters and Larkin, 2005: 89).
- **In addition, although European countries have slowed population growth during the demographic transition; It seems difficult to stop the rapid increase in developing countries. Young age structure and high fertility add momentum to further growth and a tough demographic stagnation.**

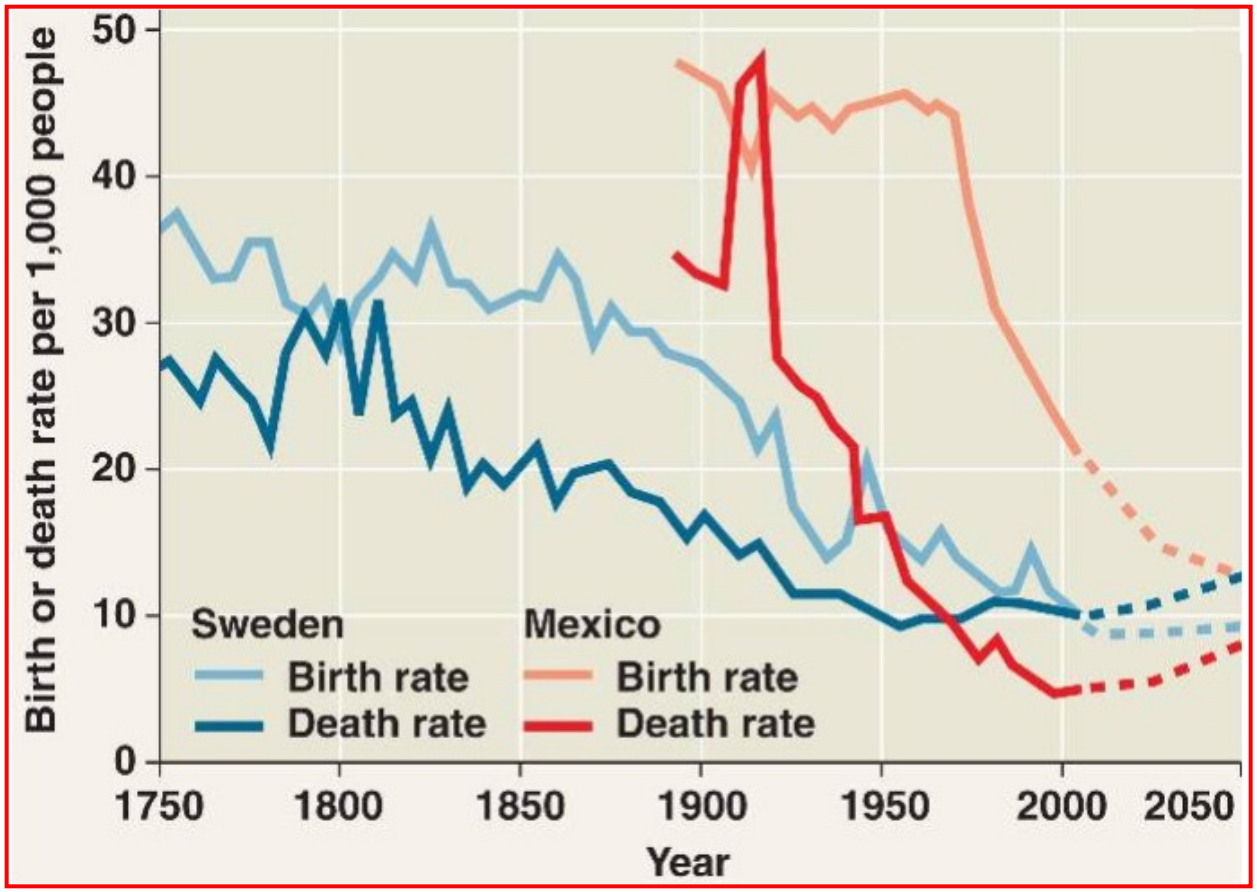
2) Decline of Mortality

- **One of the important reasons for rapid population growth in developing countries; It is the rapid decline in mortality brought about by the implementation of modern medical science and public health programs.**
- European countries have experienced a gradual decline in mortality in relation to the economic and social forces of economic development and industrialization.
- **Developing countries today have a much faster decline in mortality and, as a result, mortality rates well below the mortality levels prevailing in Europe during the initial phase of industrialization.**
- Furthermore, mortality declines have slowed somewhat, particularly in Africa, possibly as a result of the widespread effects of AIDS and increasing social instability (as seen in Rwanda).

3) Fertility Levels

- **In most developing countries, fertility levels are higher than before European countries began their demographic transition.**
- While many African countries had a crude birth rate of over ‰40 (‰48 in Niger) even in 2018, the crude birth rate in Britain at the beginning of the 19th century was estimated to be around ‰35.
- **The main reason for the fertility level difference is the marriage patterns.**
- Unmarriage and late marriage were a distinctive feature in 19th century Europe. The practice in most developing countries today is that marriages are early and almost common.
- **However, in developing countries such as China, it may be possible to reduce fertility by changing marriage patterns and applying more effective birth control methods.**

Demographic Transition Comparison: Sweden and Mexico



Kaynak: http://bio1152.nicerweb.com/Locked/media/ch53/demographic.html

- **It has spread to most of the developing world as a result of the demonstrative impact of Europe's demographic transition and the dominance of small families in Europe and the US, improved trade and better communication systems.**

- Governments and various international organizations such as the UN have also assisted in rapid fertility declines. In addition, many developing countries today have social scientists and planners involved in the formulation and implementation of national policies for economic development and social change. During the period of demographic transition and industrialization in Europe, these planning and expert support opportunities were also lacking.

- **While fertility remains high in many developing countries; some fall. In most wealthy societies, however, fertility has fallen below the replacement level. The continuation of this trend will make the population in these countries regress rather than stagnate (countries such as Estonia and Germany are already in this situation).**

4) Migration

- **International migration had reduced the population pressure of Europe in the demographic transition.**

- International migration, which acted as a safety valve in parts of Europe in the 19th century and alleviated the impact of rapid population growth, played an important role in stabilizing the population. However, due to the economic and political realities, it is not possible to alleviate the population pressure that has emerged in the developing world today through the international migration of large masses.

- **Urbanization does not create enough employment opportunities in the developing world.**

- During Europe's demographic transition, the growing rural population had the opportunity to migrate to the cities, to acquire new skills and occupations, and to find job opportunities. Today, insufficient industrialization in developing countries is far from creating jobs to absorb the rapidly accumulating labor force in cities. This encourages fertility to remain high.

5) Education and Economic Development

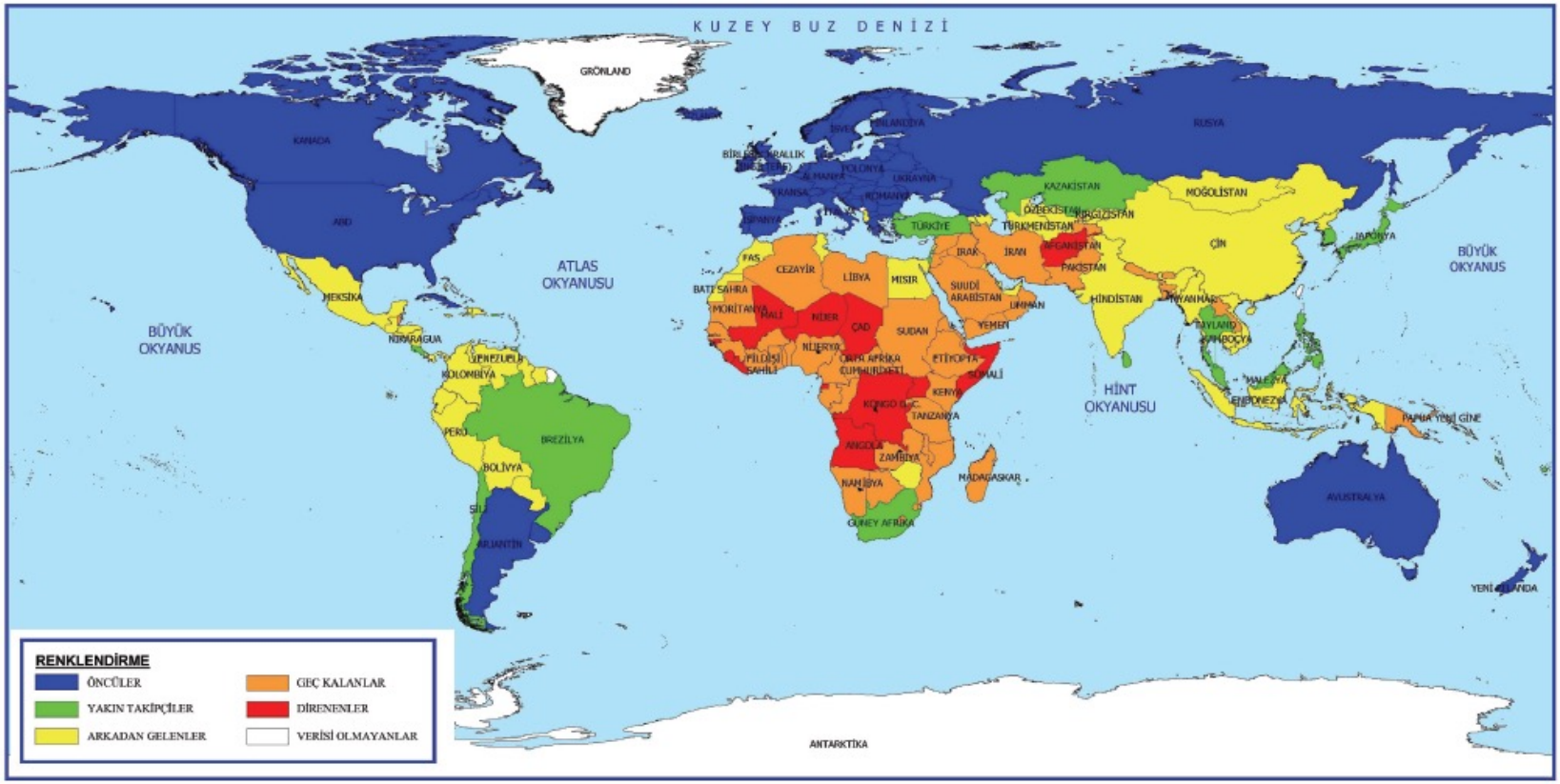
- **Modernization is lowering fertility and accelerating the transition.**

- For many developing countries, economic development and modernization developed faster than in 19th century Europe. There is a direct correlation between modernization and fertility decline, pointing to the possibility of a faster fertility decline in developing countries and a faster completion of the demographic transition.

- **The increase in the level of education is a factor that reduces fertility.**
- **Education is a factor on fertility; low fertility often coexists with higher levels of education, and this is especially true for women who are disadvantaged in terms of educational opportunities, especially in developing countries.**

- Rapid population growth in developing countries means a rapidly increasing demand for education opportunities, with a large share of people in younger population groups. Developing countries cannot meet this demand, and the result could have a negative impact on fertility reduction, possibly with further delays in universal education goals.

Demographic Transition and Global Trends



Source: Yüceşahin, 2011

Some Comments on the Demographic Transition

- Van de Walle and Knodel (1980:20-21) summarized the European fertility decline as follows:

1. **The past is characterized by natural fertility. In the past, most population groups did not have (and perhaps were not known) conscious family planning practices, although a significant proportion of births were undesirable.**
2. The transition from high fertility to low fertility represents a rapid and, once initiated, an irreversible change from natural fertility to limiting family size.
3. **The onset of long-term fertility decline was significantly cumulative at a given time; occurred under socio-economic and demographic diversity.**
4. Differences in the onset and pace of fertility decline were determined more by cultural setting than by socio-economic conditions.

Some Comments on the Demographic Transition

- **Before leaving the issue of demographic change behind, two more theories need to be discussed.**
- These theories not only contribute to our understanding of the demographic changes of the past, but also point to the need to consider some additional factors in predicting the changes of the future.

- **Throughout the 1980s, scientific attention was given to a more refining and reinterpretation of the European experience of demographic transition.**
- This shift of focus was from the role of individual choice in influencing local fertility behavior in fertility decline to the role played by relatives, friends, and neighbors (Coale and Watkins, 1986).

Some Comments on the Demographic Transition

- Watkins (1990) has called for greater attention to the role played by members of the community (plus fictitious communities) that affect individuals on a daily basis in fertility decline.
- Watkins (1990) focused on marital diversity and marital fertility during two different periods (1870 and 1960) between and within Western European countries.
- Watkins determined that past fertility changes were related to spoken language and that national social cohesion reduced demographic diversity within society.
- Watkins (1990) mentioned three variables that are important in reducing demographic diversity within a nation-state:

1. **Integration of national markets**
2. **Spread and expansion of government functions**
3. **Nation building**

Some Comments on the Demographic Transition

- Fertility rates in Western Europe are among the lowest in the world today. These rates are close to or even below the renewal level in most European societies.

- Interestingly, fertility levels in countries such as Italy and Spain have fallen so low that some demographers have begun to speak of a "second demographic transition" due to continued negative population growth rates (Lesthaeghe and van de Kaa, 1986; van de Kaa, 2002).

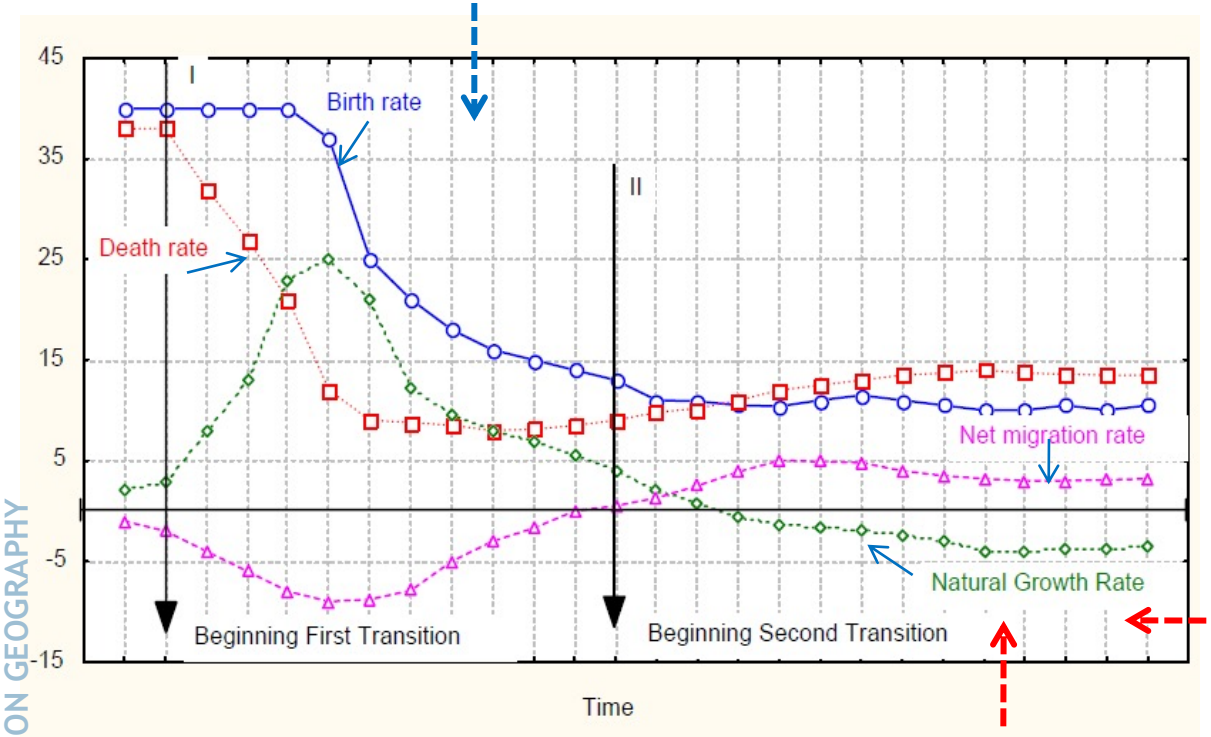
- Whether such trends will materialize or not will become clear over time.

- However, young European women (with some exceptions such as the Irish) do not tend to have more than one or two children.

- Young Japanese women also prefer very low reproductive rates (Peters and Larkin, 2005).

First and Second Demographic Transition Models

First transition (Notestein, 1945): Decline in vital rates



Out of Standards in Household Formation

Extending education and democratizing access to higher education

The emergence of a more liberal environment with the increase in tolerance for alternative lifestyles

Spread of prosperity

Transmission of family instability between generations

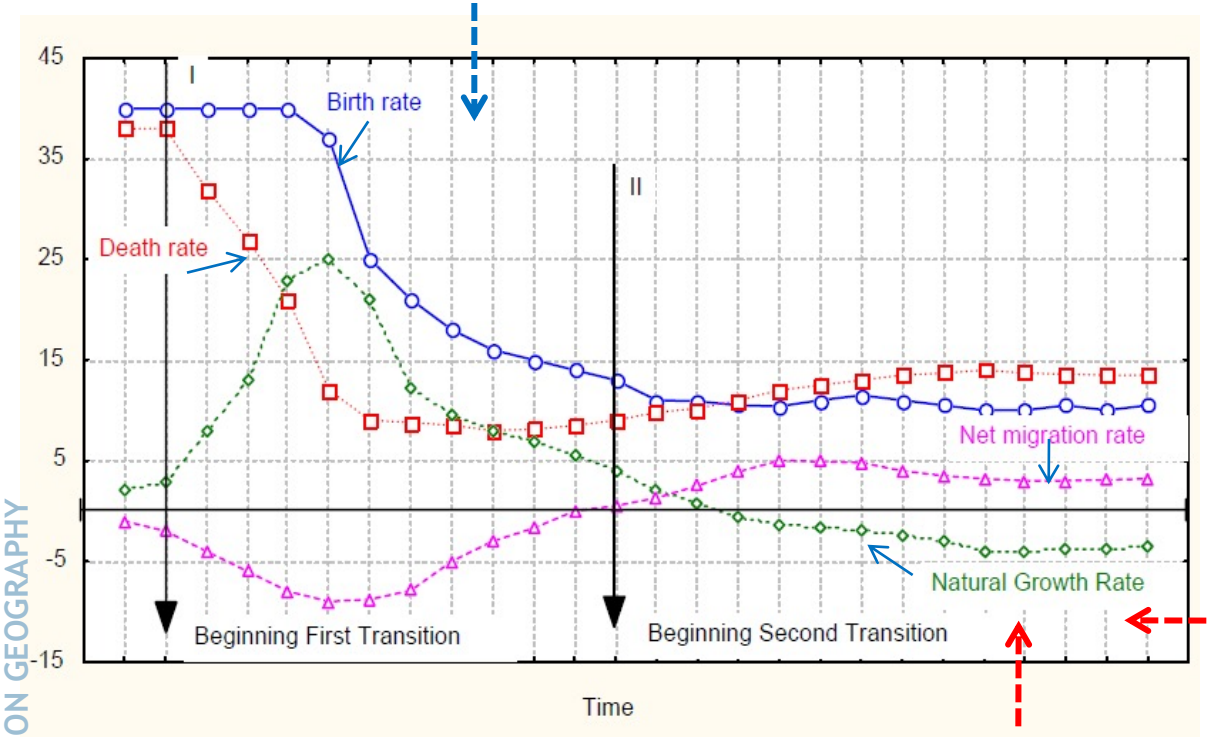
Flexibility of the growing labor market

Second transition (Lesthaeghe ve Van de Kaa, 1986): Family and living arrangements

Source: Van de Kaa, 2002: 2

First and Second Demographic Transition Models

First transition (Notestein, 1945): Decline in vital rates



Events Concerning Fertility

- Increase in first marriage-age
- Postponing births in marriage
- Prevention of premarital pregnancies
- Cohabitation becomes popular, tolerated
- Postponing marriage until you get pregnant
- Increase in separation and divorce
- Legislation reducing unwanted births
- Married or not, couples do not want children

Second transition (Lesthaeghe ve Van de Kaa, 1986): Family and living arrangements

Source: Van de Kaa, 2002: 2

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