

## **Lecture 29: Demographic Transition Theory**

### **Slide 1**

Demographic transition theory (DTT) is an attempt to capture the process of change from a situation of high mortality and high mortality to a situation of low mortality and low fertility. The demographic transition theory states that ancient society was marked by high and fluctuating death rate. At that time survival of human society required that it reproduces at the highest level to counter the high force of mortality (caused by small pox, plague, malaria and other deadly infectious diseases, wars, natural disasters, shortage of food, violent conflicts and wars). If a year was free from natural catastrophes mortality was relatively lower and if there were outbreaks of diseases, wars, fire, famine or abnormal rainfall, then mortality was high. Demographers suggest that such a society may be placed in Stage I of demographic transition. In this stage the rate of growth of population fluctuates with a long run tendency to remain around zero. Module 5 has already thrown enough light on the nature of demographic transition in the world.

The theory says that as a society develops its death rate starts falling. The reasons are not adequately understood. Yet they include formation of nation state, improvement in working conditions, improvement in means of transport and communication, developments in the field of medical sciences and medicine, and improvement in income. Development of antibiotics and better surgical techniques has certainly played an important role in reduction of death rate though the role of socio-economic and political factors cannot be ignored. This reduction in death rate leads to population explosion. Thus all Stage II societies experience rapid population growth. Finally, equilibrium between birth and death rates is restored when couples start limiting number of children. Thus in Stage III when death rates are low and birth rates are also low zero population growth (ZPG) is restored.

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Figure 8.2 shows the nature of demographic transition (Montgomery, 2009).

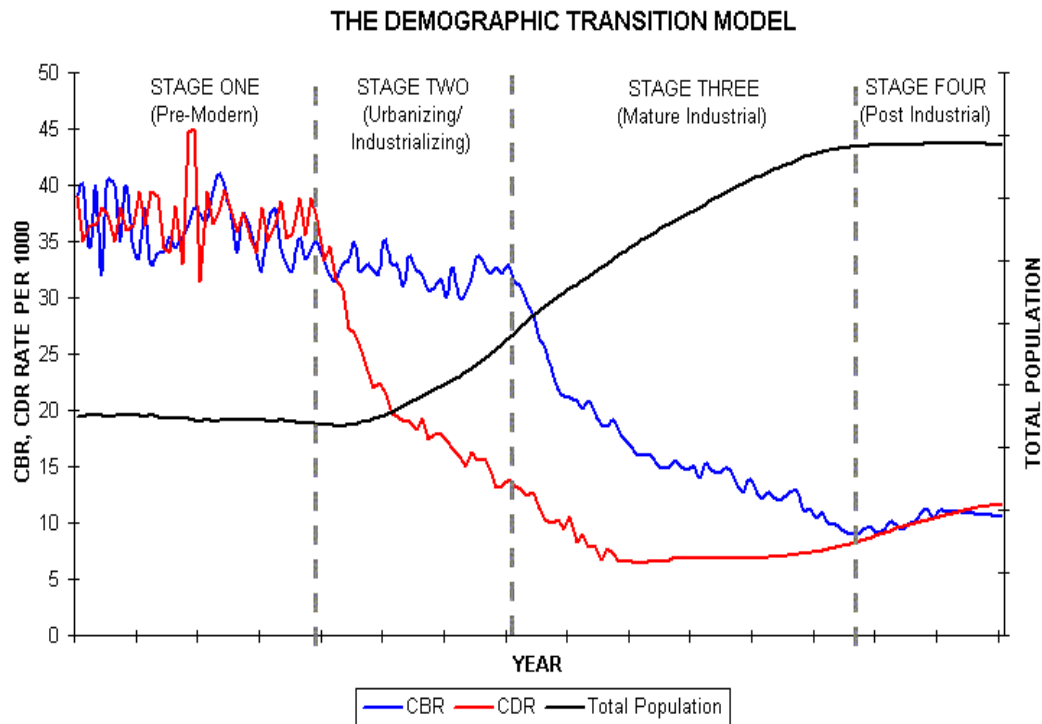


FIGURE 8.2: DEMOGRAPHIC TRANSITION

However, demographic transition has not followed the same course in all parts of the world (Figures 8.3-8.5). In the developed countries it took a very long time for mortality and fertility to decline and since the changes in both of them was slow they did not experience population explosion (i.e., a very high rate of growth of population). In less developed countries mortality remained high till the middle of the twentieth century and declined suddenly in the third quarter of the century. In absence of corresponding decline in fertility, which is taking much longer time, they experienced very rapid growth rate of population, often exceeding three percent, implying a doubling time of 23 years. It is easy for any state to work effectively towards reducing death rates and improving health facilities that everyone welcomes but it is difficult to change reproductive behaviour which requires sustained motivation on the part of individual couples. For fertility to decline the couples must perceive:

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- A smaller family is better than a larger family
- It is possible to decide how many children one should have
- There are several methods of birth control that people are practicing
- There is at least one birth control method which is easily available, affordable, safe, legitimate, and acceptable

### EVALUATION OF DEMOGRAPHIC TRANSITION THEORY

Among all the theories DTT is most known to population sociologists but is also the most criticized theory. It suffers from a number of limitations: (a) it only summarizes the empirical experience of some, industrially advanced, countries but does not present a coherent theoretical framework to establish relationship between development and demographic transition; (b) it cannot be used for making predictions; (c) it completely ignores the role of migration; (d) it does not tell how much time the demographic transition will take; and (e) it does not explain the causes of changes in death and birth rates.

In the recent literature on demographic trends social scientists are talking of second and third demographic transitions. The transition discussed above is called the first transition. Second demographic transition refers to rapid fall in fertility to the below replacement level in the industrially advanced countries, mostly after a brief period of baby boom after World War II. The third transition refers to increase in fertility in lowest low fertility countries whose mechanism is not yet understood. It is difficult to say whether societies will experience increased fertility after the second transition, and in what circumstances. This is a new issue. Today it confronts the developed countries. As and when the developing countries will achieve the replacement or below replacement level fertility this issue will become important for them also.

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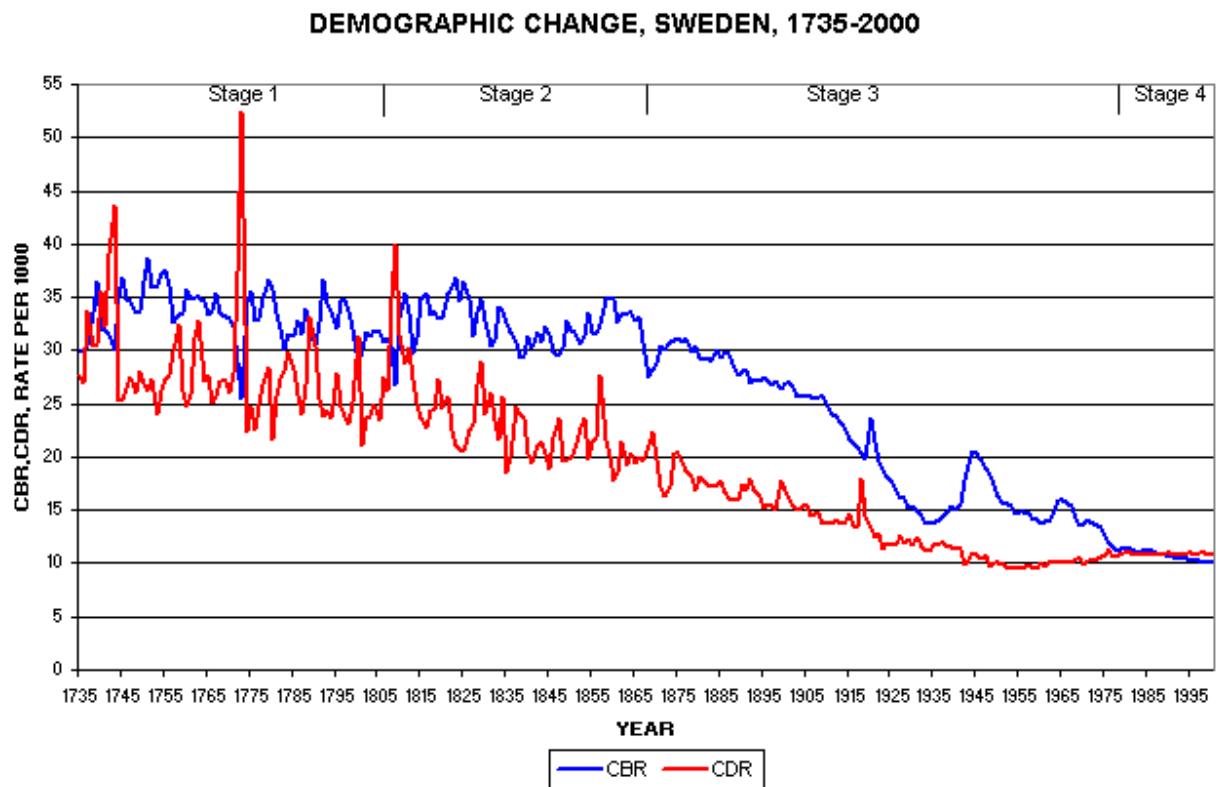


FIGURE 8.3: DEMOGRAPHIC TRANSITION IN A DEVELOPED COUNTRY

Source: Montgomery (2009).

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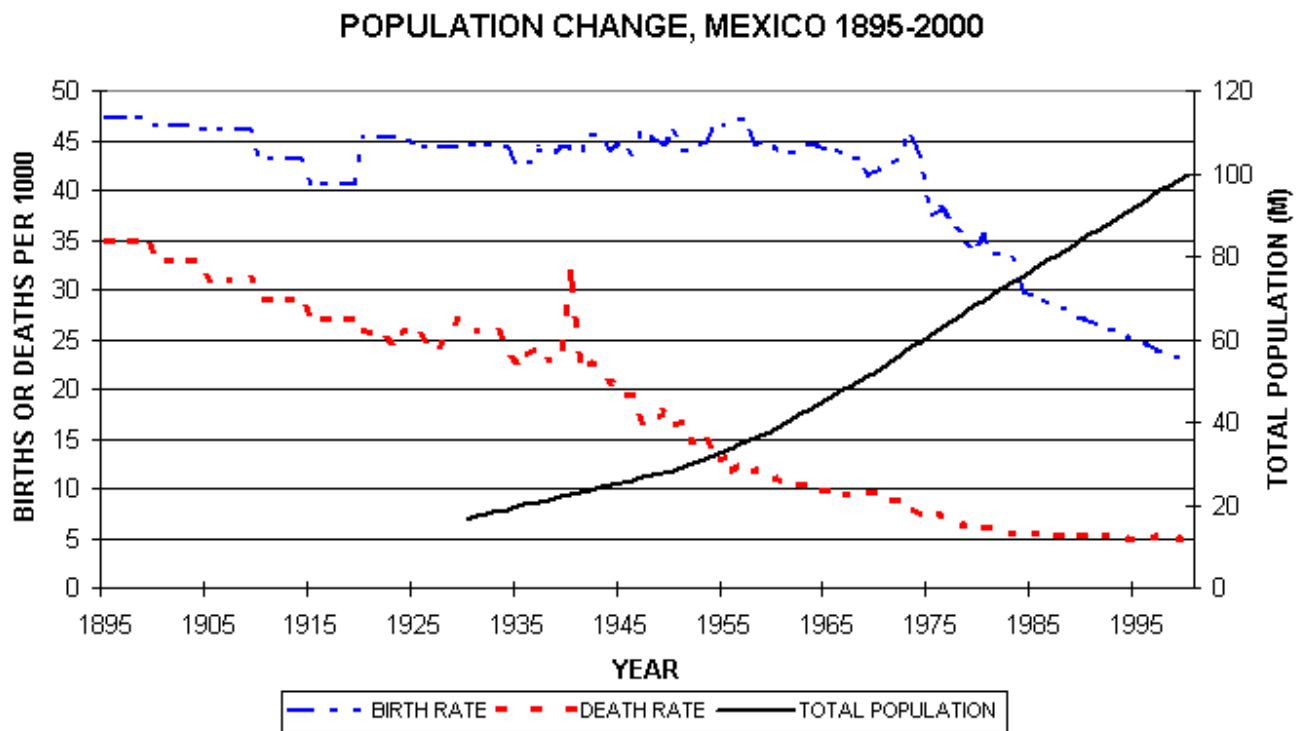


FIGURE 8.4: DEMOGRAPHIC TRANSITION IN A DEVELOPING COUNTRY

Source: Montgomery (2009).

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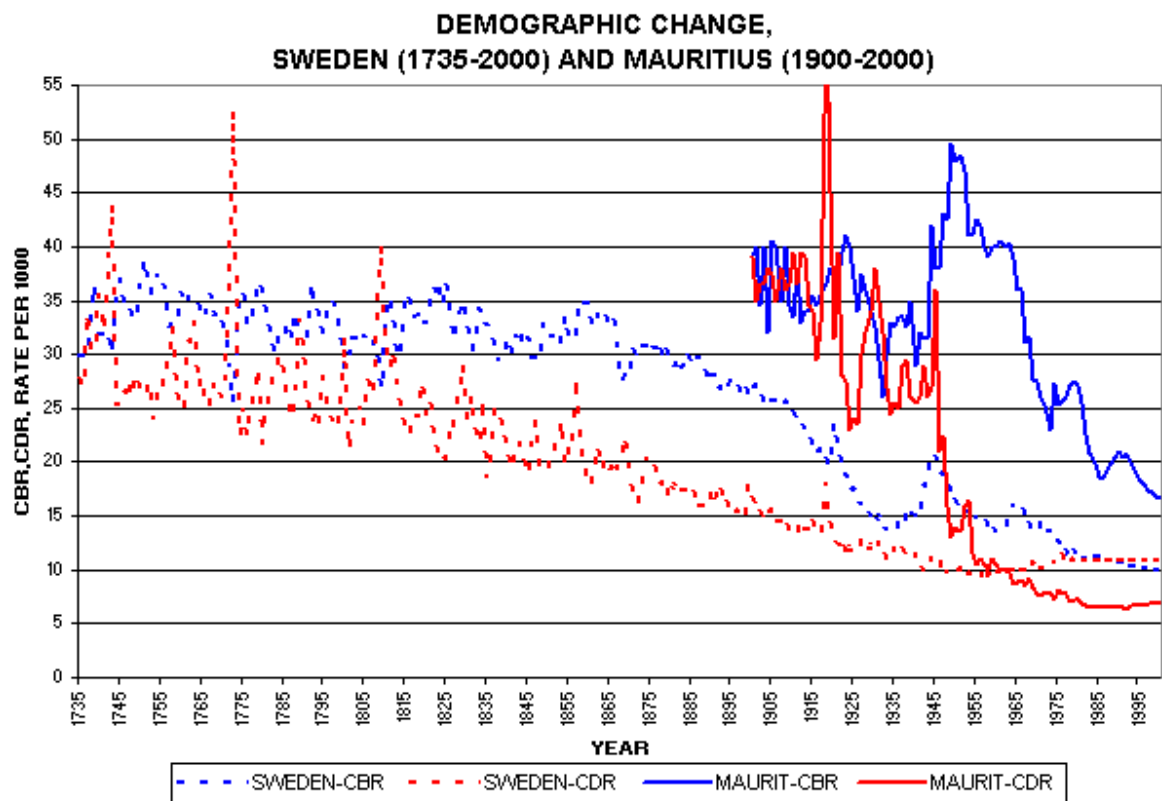


FIGURE 8.5: COMPARING DEMOGRAPHIC TRANSITION IN DEVELOPED AND DEVELOPING COUNTRIES

Source: Montgomery (2009).

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### THRESHOLD HYPOTHESIS

Threshold hypothesis is an offshoot of demographic transition theory (DTT). According to DTT changes in mortality and fertility are caused by development and modernization. Yet, one may argue that in ancient society minor improvements may not lead to any change in mortality and fertility. Improvement in people's condition must be substantial and perceptible. Thus threshold hypothesis attempts to operationalise how much improvement in socio-economic indicators is required for fertility to start declining or to decline to a given level.

According to Berelson there are certain threshold values of socio-economic indicators which should be achieved to lower birth rates. They are given in the table below:

Indicator	Threshold value for Crude Birth Rate	
	30 per thousand population	20 per thousand population
Adult literacy (percent)	70	93
School enrolment, age 5-10 years (percent)	55	69
Life expectancy (years)	60	69
Infant mortality rate (per thousand)	65	32
Non-agricultural labor force (percent)	55	80
Per capita GNP (US \$)	450	1080
Females, never married, age 15-19 years (percent)	80	100

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Demographic studies in different settings have shown that there are no fixed indicators for the decline of mortality and fertility. Vital rates have fallen in different circumstances. While broadly speaking, one may say that some minimum level of change in standard of living is required before people start thinking of planning family size, but it is not possible to fix any particular value of the indicators which sufficiently predicts the onset of fertility decline. Moreover, there is also no agreement regarding which variables must be given top priority in applying threshold hypothesis. The question is not easy to answer: Is it education, income, urbanization, age of marriage, women's empowerment or what that determines beginning of demographic transition or a combination of all of them?

## CONCLUSION

Like Marx, it can be said more confidently today that there is no law of population that applies to all societies. Trends in vital rates and their causes are all shaped greatly by the socio-economic, political and cultural milieus as well as human intervention. Thus the search for a universal law is in vain. At the same time we cannot forget the warning given by Malthus that unrestrained population could lead to underdevelopment, especially in the context of developing countries which require a more balanced and an optimum approach to fertility and mortality. We must pay particular attention to migration, the process which was ignored by demographic transition theory as well as many other theories.



## Questions and Exercises

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1. Can Malthusian or Marxist theories be applied to deal with population and development issues in any country today?
2. What is your assessment of Hardin's argument that the poor countries are suffering from long age of population and not from shortage of resources?
3. Write a short note on four types of surplus labour.
4. What are the major differences in Malthusian and Marxist theories of population?
5. State the demographic transition theory.
6. Describe threshold hypothesis.
7. What are the major differences in demographic transition between developed and developing countries?
8. What are the economic assumptions behind optimum population theory?
9. Does the environment depend on population size only? What are all the factors determining environment impact?
10. Discuss Gandhian theory of population and its relevance in the present times.

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