Demographic Transition

From Matt Rosenberg, Your Guide to Geography.

The demographic transition model seeks to explain the transformation of countries from having high birth and death rates to low birth and death rates. In developed countries this transition began in the eighteenth century and continues today. Less developed countries began the transition later and are still in the midst of earlier stages of the model.

CBR & CDR

The model is based on the change in crude birth rate (CBR) and crude death rate (CDR) over time. Each is expressed per thousand population. The CBR is determined by taking the number of births in one year in a country, dividing it by the country's population, and multiplying the number by 1000. In 1998, the CBR in the United States is 14 per 1000 (14 births per 1000 people) while in Kenya it is 32 per 1000. The crude death rate is similarly determined. The number of deaths in one year are divided by the population and that figure is multiplied by 1000. This yields a CDR of 9 in the U.S. and 14 in Kenya.

Stage I

Prior to the Industrial Revolution, countries in Western Europe had a high CBR and CDR. Births were high because more children meant more workers on the farm and with the high death rate, families needed more children to ensure survival of the family. Death rates were high due to disease and a lack of hygiene. The high CBR and CDR were somewhat stable and meant slow growth of a population. Occasional epidemics would dramatically increase the CDR for a few years (represented by the "waves" in Stage I of the model.

Stage II

In the mid-18th century, the death rate in Western European countries dropped due to improvement in sanitation and medicine. Out of tradition and practice, the birth rate remained high. This dropping death rate but stable birth rate in the beginning of Stage II contributed to skyrocketing population growth rates. Over time, children became an added expense and were less able to contribute to the wealth of a family. For this reason, along with advances in birth control, the CBR was reduced through the 20th century in developed countries. Populations still grew rapidly but this growth began to slow down.

Many less developed countries are currently in Stage II of the model. For example, Kenya's high CBR of 32 per 1000 but low CDR of 14 per 1000 contribute to a high rate of growth (as in mid-Stage II).

Stage III

In the late 20th century, the CBR and CDR in developed countries both leveled off at a low rate. In some cases the CBR is slightly higher than the CDR (as in the U.S. 14 versus 9) while in other countries the CBR is less than the CDR (as in Germany, 9 versus 11). (You can obtain current CBR and CDR data for all countries through the Census Bureau's International Data Base). Immigration from less developed countries now accounts for much of the population growth in developed countries that are in Stage III of the transition. Countries like China, South Korea, Singapore, and Cuba are rapidly approaching Stage III.

The Model

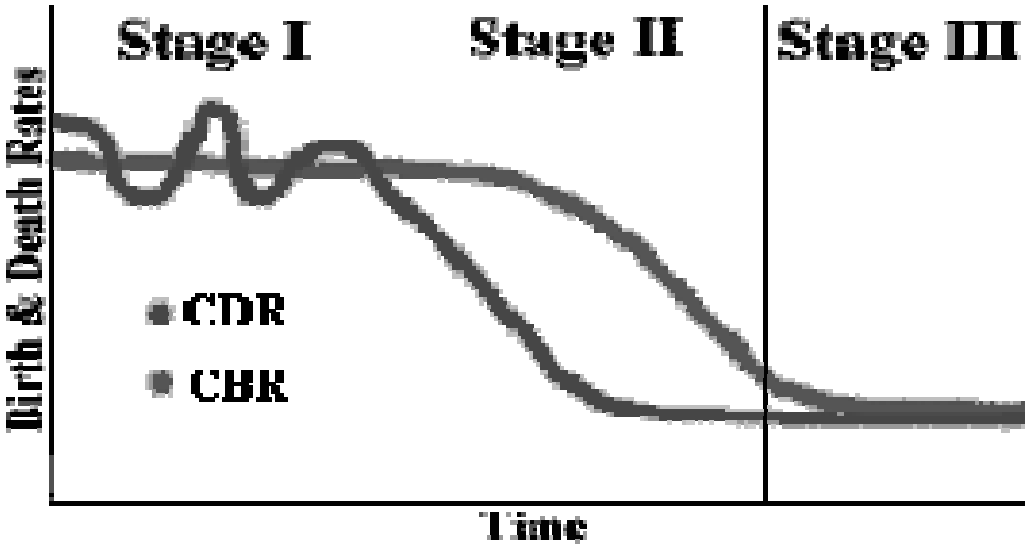
As with all models, the demographic transition model has its problems. The model does not provide "guidelines" as to how long it takes a country to get from Stage I to III. Western European countries took centuries through some rapidly developing countries like the Economic Tigers are transforming in mere decades. The model also does not predict that all countries will reach Stage III and have stable low birth and death rates. There are factors such as religion that keep some countries' birth rate from dropping.

Though this version of the demographic transition is composed of three stages, you'll find similar models in texts as well as ones that include four or even five stages. The shape of the graph is consistent but the divisions in time are the only modification.

An understanding of this model, in any of its forms, will help you to better understand population policies and changes in developed and less developed countries around the world.

For More Information

Read a related feature about Age-Sex Pyramids.
Learn more in my World Population category of links.
Peters, Gary L. and Robert P. Larkin. *Population Geography*.



Demographic Transition

Pre-reading

1) The demographic transition model seeks to explain the transformation of countries from having high birth and death rates to low birth and death rates. In developed countries this transition began in the eighteenth century and continues today. Less developed countries began the transition later and are still in the midst of earlier stages of the model.

The article discusses the demographic transition model in "developed countries" and "less developed countries". The countries mentioned in the article are the following

Kenya
the United States
China
Cuba
Germany
South Korea
Singapore

Divide them into two groups: developed countries(DC) and less developed countries (LDC).

2) The text also mentions the so called "Economic Tigers". Which countries are called Economic Tigers and why?

……

……..

3) What do the abbreviations CBR and CDR stand for?

……

Reading

1) CBR & CDR

The model is based on the change in crude birth rate (CBR) and crude death rate (CDR) over time. Each is expressed per thousand population. The CBR is determined by taking the number of births in one year in a country, dividing it by the

country's population, and multiplying the number by 1000. In 1998, the CBR in the United States is 14 per 1000 (14 births per 1000 people) while in Kenya it is 32 per 1000. The crude death rate is similarly determined. The number of deaths in one year are divided by the population and that figure is multiplied by 1000.

Read this short paragraph describing the method of calculation of CBR and CDR.
Using this model, can you determine what a CDR in the US and in Kenya is?

the US ……..
Kenya……

2) Stage I

Prior to the …… Revolution, countries in Western Europe had a …….. CBR and CDR. Births were high because more children meant more workers on the farm and with the high …… rate, families needed more children to ensure survival of the family. Death rates were high …… disease and a lack of hygiene. The high CBR and CDR were somewhat stable and meant slow …… of a population. Occasional epidemics would dramatically …… the CDR for a few years (represented by the "waves" in Stage I of the model.

Fill in the missing words.

growth industrial increase death high due to

3) Stage II

In the mid-18th century, the death rate in Western European countries dropped due to improvement in sanitation and medicine. Out of tradition and practice, the birth rate remained high. This dropping death rate but stable birth rate in the beginning of Stage II contributed to skyrocketing population growth rates. Over time, children became an added expense and were less able to contribute to the wealth of a family. For this reason, along with advances in birth control, the CBR was reduced through the 20th century in developed countries. Populations still grew rapidly but this growth began to slow down.

Many less developed countries are currently in Stage II of the model. For example, Kenya's high CBR of 32 per 1000 but low CDR of 14 per 1000 contribute to a high rate of growth (as in mid-Stage II).

Explain the meaning of the words and phrases, or use a synonym.

Out of tradition and practice……

Skyrocketing population growth rates……

Added expense……

Advances in birth control……

4) Stage III

In the late 20th century, the CBR and CDR in developed countries both leveled off at a low rate. In some cases the CBR is slightly higher than the CDR (as in the U.S. 14 versus 9) while in other countries the CBR is less than the CDR (as in Germany, 9 versus 11). (You can obtain current CBR and CDR data for all countries through the Census Bureau's International Data Base). Immigration from less developed countries now accounts for much of the population growth in developed countries that are in Stage III of the transition. Countries like China, South Korea, Singapore, and Cuba are rapidly approaching Stage III.
Using your own words, try to describe the situation of DC and LDC in the late 20th century.

DC……..

LDC……

HW: Have a look the Census Bureau's International Data Base and find out about the current CBR and CDR for the Czech Republic (or Slovak Republic).

5) The Model

As with all models, the demographic transition model has its problems. The model does not provide "guidelines" as to how long it takes a country to get from Stage I to III. Western European countries took centuries through some rapidly developing countries like the Economic Tigers are transforming in mere decades. The model also does not predict that all countries will reach Stage III and have stable low birth and death rates. There are factors such as religion that keep some countries' birth rate from dropping.

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Read the last part of the text and answer Qs.

1) What are the disadvantages or problems connected with this model?

a)……

b)……

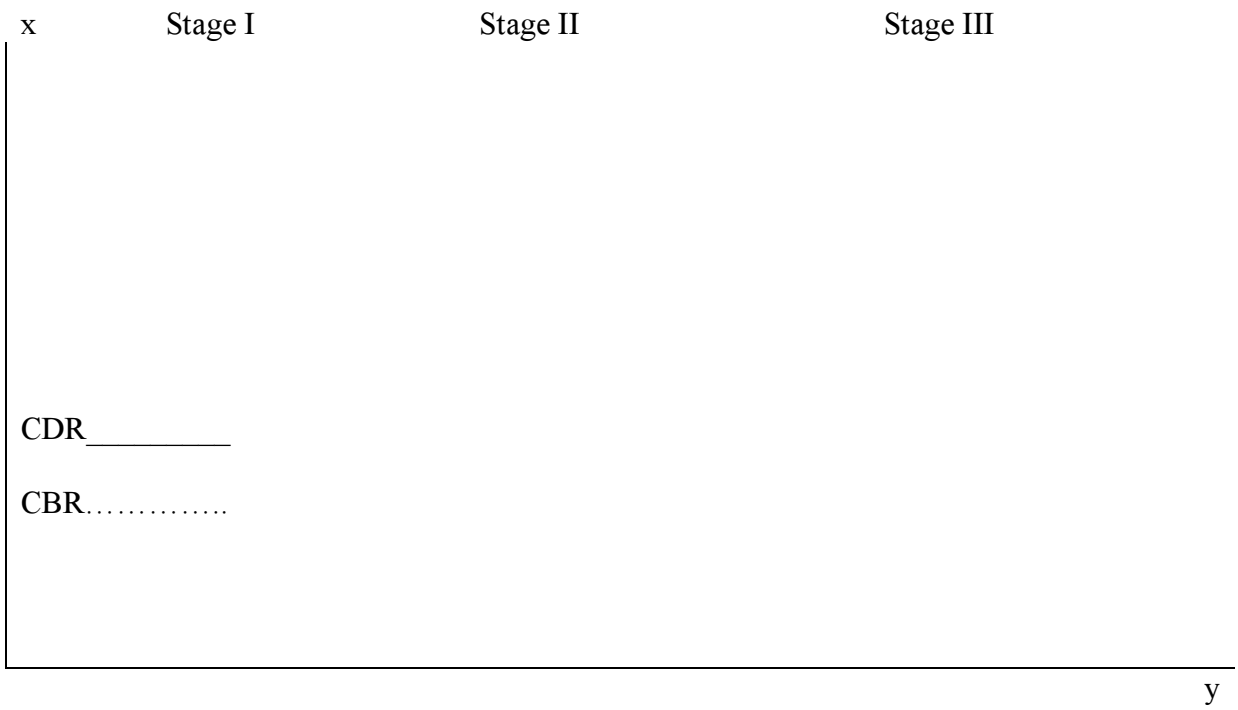
c)……

2) How can religion influence the countries' birth rate?

……

Adapted from: Matt Rosenberg, Your Guide to Geography.

6) Using the information from the text, try to complete the graph.



x = birth and death rates

y = time