How Rapid Decline in Fertility Speeds Economic Development: Evidence from Asia

E VERY industrialized nation has gone through a demographic transition, from a predominantly rural, illiterate society with high birth and death rates to a predominantly urban, educated society with low birth and death rates. In Western nations this transition took more than a century. In Indonesia, South Korea, and Thailand, however, the transition is now occurring much more rapidly, as it did in Japan recently.

The economies of these countries have also grown rapidly. To some observers, it is rapid economic growth that causes fertility to decline during the demographic transition. “Development is the best contraceptive,” is an often-heard phrase. While in these Asian countries there is evidence that economic advances have contributed to the drop in fertility, it is also true that fertility has declined much more than could be expected from economic development alone.

A new study finds that family planning efforts appear to have been instrumental in bringing down birth rates in Indonesia, Korea, and Thailand. In turn, lower birth rates have had important effects on the age structure of these countries, their investment in schooling, the level of saving, and the growth of per capita income and gross national product. The study provides evidence that the rapid pace of economic growth is in part a consequence of successful family planning efforts.
Family Planning Speeds Development

INDONESIA, Japan, Korea, and Thailand have experienced remarkably rapid economic development in recent years. They have also had rapid declines in fertility and mortality. These demographic changes have occurred in part because of economic development, but fertility has declined more rapidly than can be explained by development alone. According to a recent study, the dramatic declines in fertility in each of these countries except Japan are largely the result of successful family planning efforts. In turn, lower fertility has provided an important stimulus to economic growth.

The research project compared recent demographic and economic trends in Indonesia, Japan, Korea, and Thailand to worldwide fertility and development experience, using an econometric model of population and development. The project was a combined effort of the East-West Center's Population Institute, the Nihon University Population Research Institute, and the United Nations Fund for Population Activities.

By comparing the experience of countries with rapidly declining fertility and rapidly growing economies to the standard profile, the researchers were able to understand the impact of development on fertility, and the contribution falling fertility makes to economic development. Their study should prove useful to policymakers who seek to understand the interactions between population trends and the economy and in measuring the value and economic consequences of population policies.

Though experts do not agree on why fertility has declined so rapidly in selected Asian countries, part of the answer is clearly that the pace of economic development has been so rapid. However, an important finding of the research is that economic development explains no more than 60 percent of the decline in fertility, and possibly as little as 25 percent. Therefore, at least 40 percent of the fertility decline, and perhaps as much as 75 percent, must be explained by other factors. These factors are primarily cultural traits and effective family planning programs, the researchers say.

How Fertility Decline Affects Economic Growth

DEMOGRAPHIC trends have important economic consequences. Lower fertility rates shift the proportions of children and adults in a society. With fewer children per adult, a smaller share of total resources is required to care for children, or each child can receive more resources. Declining fertility enables countries to enroll higher proportions of students in school, particularly at the secondary level, leading to a more educated labor force. Lower fertility rates enable women to gain in education and employment. Families are able to save more. The researchers found that declining fertility causes Gross National Product to advance more rapidly than it would otherwise.

Here are a few key differences the researchers found when they used an econometric model to compare data from Indonesia, Japan, Korea, and Thailand—countries with rapid fertility decline—to countries having average fertility decline, based on data from a cross-section of countries around the world:

Women's Labor Force Participation: On balance, rapidly declin-

![Women's Labor Force Participation Chart]

- **Rapid Decline**
  - Year 0
  - Year 50

- **Standard Profile**
  - Year 0
  - Year 50

% of Women's Age
ing fertility means that the proportion of women who work outside the home increases. According to the researchers’ econometric model, at the start of the development path, 41 percent of women aged 25 to 29 are in the paid labor force. After 50 years, in countries with rapid fertility decline, the proportion rises to 61 percent. But in countries with average fertility decline, it rises to only 47 percent. In countries where fertility has been declining rapidly, women of childbearing age are much more likely to participate in the labor force than in the case in countries that fit the standard fertility-development profile. (See chart.)

- **Education**: As development proceeds, countries educate a growing share of their young people. But a decreasing proportion of the population is of school age. To illustrate, according to the researchers’ model, at the start of the development path, 14.7 percent of the population is enrolled in school. After 20 years, countries with rapid fertility decline enroll 18.7 percent, one point more than the 17.7 percent in countries with average fertility decline. After 50 years, the percentage enrolled in rapid fertility decline countries drops to 17.9 percent, but rises to 21.2 percent elsewhere. Rapid fertility decline does not reduce education’s demand on public resources because expenditures per pupil rise. Gains in education stimulate economic development, and the higher cost of educating young people is commensurate with the higher level of development.

- **The Saving Rate**: Sharply declining population growth is a primary force behind an increase in a country’s saving rate. In the standard development profile, the rate of saving varies between 18 and 20 percent of Gross National Product, for the first 50 years of the development path. With rapid fertility decline, however, the saving rate rises sharply to around 30 percent of GNP. Along with greater labor productivity, the rising saving rate contributes to faster growth of GNP.

- **Per Capita Income**: Rapid fertility decline at first affects per capita income only slowly, resulting in a gain of just $2 per capita more than the average after the first ten years along the simulated development path. But after 40 years, per capita GNP is over twice as high in countries with rapid fertility decline as it is in the average country. After 50 years, it is nearly three times as high—$1.468 in countries with rapid fertility decline, versus $525 in the standard profile. (See chart.)

- **In Conclusion**: The econometric model used by the researchers simulates a development path. Data from Indonesia, Korea, Thailand, and Japan provide a profile of rapid fertility decline; a world average forms the standard profile. Applied to the statistical relationships between development and population provided in the model, the data provide evidence that rapid fertility decline results in higher standards of living.
Summary

In Indonesia, Korea, and Thailand, successful family planning programs, by reducing fertility, are leading to a higher standard of living. Rapid fertility decline leads to more investment in education, higher rates of saving and investment, and eventually to higher per capita income and faster growth of Gross National Product. These findings are from a new study that uses an econometric model to compare the economic development experience of countries with rapid declines in fertility to a standard profile based on worldwide averages.

The statistical relationships in the model that lead to this result are as follows: When fertility declines, the size and growth of the labor force remain unaffected for a generation. The saving rate rises as there are fewer children per worker. This change speeds the growth rate of Gross National Product. In turn, rising GNP generates still higher saving. After many years of this dynamic process, the economy levels off at a much higher level of per capita income but with a more moderate rate of economic growth.

"The comparison of development profiles provides strong evidence that reduction of fertility does raise the rate of economic growth, at least for a period of several decades, and contributes to permanently higher living standards," says the study.


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