Global Study Suggests that Low Birth Rate will not Hurt Standard of Living in Most Countries, but may in Taiwan

A huge new global study, contributed to by Dr. An-Chi Tung, Associate Research Fellow at the Institute of Economics has confirmed that a moderately low birth rate—slightly less than the "replacement rate" of 2.1 children per woman—may actually boost a country's material standard of living. However, extraction of the data for Taiwan laid out in the study suggests that the birth rate is so low on the island that the economy's overall prosperity is likely to be harmed in the future. The research, conducted by the National Transfer Accounts Network which has research partners in 40 countries, was published in *Science* on October 10.

The team correlated birth rates with economic data and concluded that the optimal fertility rate varies according to social goal as well as by country. Governments generally favor higher birth rates to maintain the workforce tax base needed to fund pensions, health care and other government benefits for the elderly. The fertility rate most favorable to public finances was averaged to be 2.56 children per woman for the 40 economies covered in the study. But the fertility rate that maximizes per capita consumption was lower, at 2.05, when the analysis included the effects of age structure on families as well as governments, as it is typically families that bear the brunt of the cost of raising children. Under alternative assumptions about capital costs, the fertility rate most beneficial for standard of living can further drop to 1.2-1.54.

Both an overly low and an overly high fertility rate as compared with the optimal rate can hurt a country's economy. In 17 high income economies covered in the study, the average fertility rate in 2005-2010 was 1.65, which is low relative to the optimal rate (calculated as 2.94) that maximizes government finances, implying large government deficits in the future. The gap between actual and optimal fertility rates is smaller, if the social goal is to maximize per capita consumption instead. Other factors may also reduce the gap, such as likely pension and health care reform in rich industrial nations and developments in robotics that will be able to substitute for labor in elderly care. These results challenge previous assumptions about population growth. For example, the researchers found that the fertility rate in the U.S. and some Northern European countries is nearly ideal for overall standards of living, though not always adequate to relieve the strain on public finances.

"Although our study shows that the optimal fertility rate is lower than commonly believed, the actual birth rates in Taiwan, along with a few other countries in East Asia and Europe, are so low that they reduce living standards when public and private costs are included. Furthermore, the birth rate in Taiwan as reported by the Ministry of the Interior is lower than the UN statistics used in the study, hence the shortage of children may be even more serious than the study figures suggest. As Taiwan's fertility rate was only 1.065 in 2013, the lowest in the world, it is advisable for the government to encourage people to have more children, given that it takes many years for population policies to take effect," said Dr. Tung.

The research was led by Dr. Andrew Mason at the East-West Center in Hawaii and Dr. Ron Lee of the University of California, Berkeley in collaboration with the National Transfer Accounts Network. The National Transfer Accounts Network consists of research teams in more than 40 countries based in universities, research institutions, and government agencies. In addition to Dr. Tung, team collaborators in Taiwan included Dr. Ching-lung Tsay, Professor at Graduate Institute of Asia Studies, Tamkang University, Dr. Kevin Yu-Ching Hsieh, Postdoctoral Research Fellow at the Institute of Economics, Academia Sinica, and Dr. Nicole Mun Sim Lai, Officer, Population Division, Department of Economic and Social Affairs at the United Nations.

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