

## DEMOGRAPHIC TRANSITION IN ASIA

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*The demographic transition theory is a grand theory on population dynamics derived from general observations of demographic histories of the Western societies. According to the classical demographic transition theory population dynamics is brought about by economic and social development in general. Regarding the debate on this theory several issues should be mentioned for shedding light on Asian fertility transition. A debate has arisen on the base of a great deal of empirical research and it has been stated that the decline of fertility started at really different levels of development. The arguments of the strong role of the family planning programs and the availability of services by the state accelerating the pace of reproductive change, like for example, in Bangladesh (Robinson 2001, Cleland et al 1994) and the role of social development levels –notably educational levels and health patterns as reflected in life expectancy have also been cited as contributing to the transition in developing areas (Caldwell, 1982). To show the diversities of the degree of the demographic transition completed, a rough index of the transition process has been computed in this article, using the formula proposed by Cho and Togashi(1984).*

### Demographic Transition Theory

The demographic transition theory is a grand theory on population dynamics derived from general observations of demographic histories of the Western societies. It was proposed by some scholars first in the 1920's and has been supported and broadened up until now. The theory comprises that all populations start from 1) the stationary situation characterized by both high birth and death rates, proceeding through 2) the stage of accelerated population growth caused by mortality decline with sustained high birth rates, and 3) the stage of decelerating population growth brought about by the decline in fertility following mortality decline, and reach 4) the stationary state characterized by both low birth and death rates.

According to the classical demographic transition theory population dynamics is brought about by economic and social development in general. The rise in the levels of living by economic development brings about the improvement of nutrition and the development of medicine and public health, which cause the long-run decline in death rates. Fertility decline lags behind mortality decline because it takes time for social institutions sustaining high fertility to adapt to changing conditions.

Many aspects of social and economic development have been regarded as important for the long-run decline in fertility; there are the rise in aspirations for better social and economic life caused by economic development, the loss of the value of children as farm labor, the fall of infant and child mortality, the loss of social functions of families, the weakening of

religions or traditional beliefs sustaining high fertility, the compulsory education and the prohibition of child labor, the rise in women's labor force participation rate and the improvement of their social status, the development of social security system (especially old age pension), the deviation from traditional norms and behavioral patterns due to urbanization and the rise in educational attainment, and the increase in opportunities or social and geographical mobility (Freedam, 1961/62; Bulatao, 1979).

As I mentioned before that the classical demographic transition theory has been challenged by recent achievements of historical demography in Western societies and by the observations of recent demographic trends in non-Western countries. Regarding the debate on this theory several issues should be mentioned for shedding light on Asian fertility transition.

### **Explaining Asian demographic transition**

Over the past four decades, rapid fertility transitions have been observed in developing countries in Asia, North Africa and Latin America. The causes of this trends have been explained by different theories, beginning with the classical statement of the demographic transition theory by F. Notestein (1945) relating fertility reduction with modernization, urbanization, industrialization, education, etc. A debate has arisen on the base of a great deal of empirical research and it has been stated that the decline of fertility started at really different levels of development. The arguments of the strong role of the family planning programs and the availability of services by the state accelerating the pace of reproductive change, like for example, in Bangladesh (Robinson 2001, Cleland et al 1994) and the role of social development levels –notably educational levels and health patterns as reflected in life expectancy have also been cited as contributing to the transition in developing areas (Caldwell, 1982). These indicators have a strong predictive effect, but in addition, and related to social development, are different familial systems and gender hierarchies that can explain differences in reproductive behaviour (Malhotra et al, Dyson and Moore 1983, Jejeebhoy 2001, Kazi and Sathar 2001, Visaria 1996, Kabeer 1985).

In Asia, while Singapore, Hong Kong, the Republic of Korea and Taiwan where fertility has declined dramatically in the 1960's and 1970's are, at the same time, the countries or regions that have experienced the most dramatic economic development in this period, fertility has persisted one of the highest levels in the world in Bangladesh, Nepal, and Afghanistan which are among the poorest countries in the world. Indicators, such as life expectancy at birth and indicators on education and communication are more likely to be associated with fertility rather than the major indicators of economic development and industrialization such as income and proportion of workers in agriculture. In Asian scene, fertility has declined dramatically in China in spite of its low-income level; this is partly explained by its relative advantage in health and nutrition levels and education.

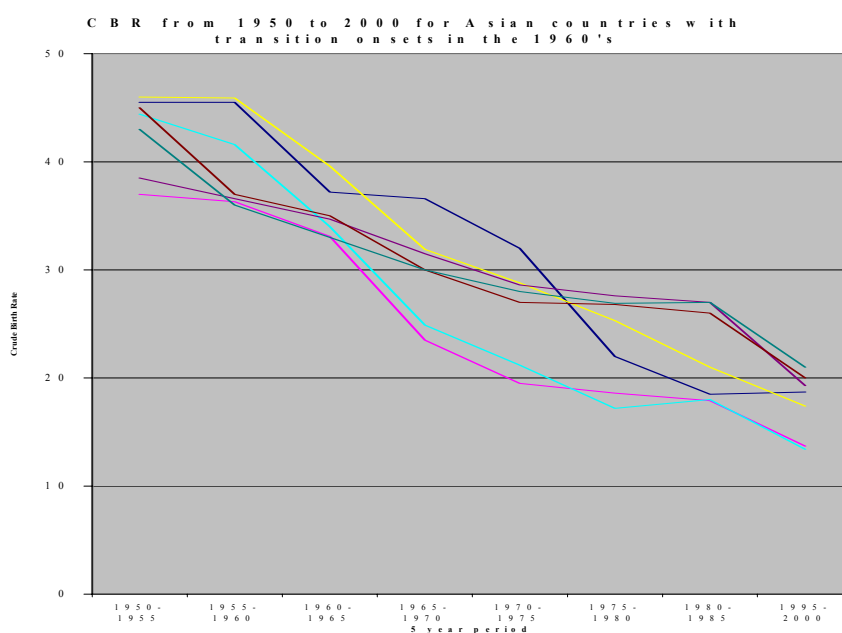
One the other hand, development levels do not completely correspond to fertility levels. In Asia, whereas there has been little drop of fertility in relatively rich countries in the Western Asia, such as Kuwait, Saudi Arabia and Jordan, fertility has declined considerably in South-Eastern Asian countries the income level of which is lower than the former group. Also, Sri Lanka and

India have experienced fertility decline but Pakistan has not, though these countries belong to the same category of development level.

Another important factor for explaining fertility difference in Asian countries is government intervention. In developed countries fertility transition from high to low birth rates was achieved without government intervention. In Asia, which experienced a rapid population growth in the 1950's and 1960's, governments began to adopt family planning programs to curb population explosion of other regions of the world.

### Fertility patterns in Asian countries with transitions starting in the 1960s

In the 1950's when most of the Asian developing countries kept very high levels of fertility and began to decline in the 1960's in some countries and regions. The record of countries that started their transitions in the 1960's provides a starting point of transition because these transitions have been underway for at least three decades. The fertility trends in this set of countries are showed in Figure. Three key features of these transitions are evident: 1) fertility is high until the transition begins; 2) once transition gets underway fertility changes fairly rapidly and tends to continues; 3) the pace of declines decelerates as countries reach the later stages of the transition.



In 1960-65 the large majority of developing countries had not yet entered the transition. The average CBR in these pre-transitional countries in the early 1960s was 45. Fertility surveys in pre-transitional countries have confirmed that only a very small proportion of couples practice contraception. Traditional norms and values tend to support large families and the deliberate limitation of family size through contraception is discouraged. This resistance to change leads to a growing gap between actual and desired family size decline with development, thus building a potential for future fertility decline.

Once transition starts it tends to continue. The pace of decline is typically faster immediately after onset than in any other phase of the transition. As development proceeds, the desire for reproductive change becomes sufficiently large and widespread that a few innovators adopt

contraception – typically first among highly educated and urban couples. Once reproductive change begins it spreads rapidly as diffusion and social interaction processes reinforce rather than inhibit reproductive change. Diffusion and social interaction can alter couples evaluation of the costs and benefits of childbearing, thus reducing fertility references. The pace of early fertility decline will be somewhat lower in the future.

### Diversities in the Demographic Transition in Asia

To show the diversities of the degree of the demographic transition completed, a rough index of the transition process has been computed, using the formula proposed by Cho and Togashi(1984). Although this index is by no means a perfect indicator of the degree of demographic transition, it still provides useful and concise information.

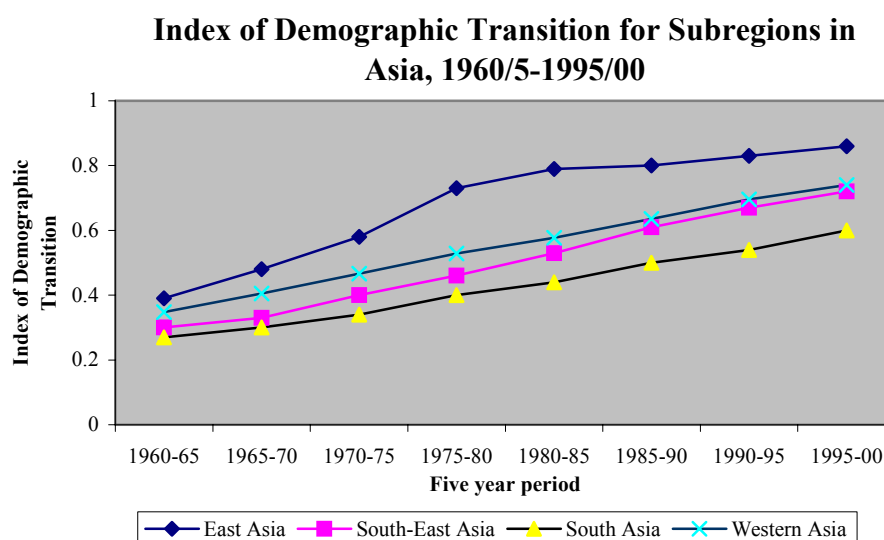
The index of the percentage of the demographic transition completed was constructed using the following formula:

$$\text{Index} = 0.40[(7.5-\text{TFR})/5.3] + 0.40[1-(75-\text{e0})/43]+0.20[\text{u}]$$

Where;

- TFR = total fertility rate per women,
- eo = life expectancy at birth, and
- u = proportion of population urban.

Figure displays changes in this index for the subregions in Asia from 1960-65 to 1995-00. Although each subregion recorded a continues rise in the degree of demographic transition completed during the last 30 years, there are substantial disparities in the tempo of the transition among them. Among the subregions in Asia, the value of this index was the highest in East Asia.



As shown in the Table, on a country-specific basis, Japan, Hong Kong and Singapore completed their demographic transition by 1985-00 with the highest values of the index among the Asian countries. Moreover, another

industrialized country, South Korea, is very close to the completion of its demographic transition. The degree of transition in all the South-Central Asian countries except for Sri-Lanka is still relatively low, and the tempo of the transition is also relatively low. Armenia, Azerbaijan, Israel and Kuwait in Western Asia are very close to the completion of its demographic transition.

*Table 1. Index of Demographic Transition for Selected Countries in Asia*

|                           | 1960-65     | 1965-70     | 1970-75     | 1975-80     | 1980-85     | 1985-90     | 1990-95     | 1995-00     |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Asia</b>               |             |             |             |             |             |             |             |             |
| <b>Eastern Asia</b>       | <b>0.39</b> | <b>0.47</b> | <b>0.58</b> | <b>0.73</b> | <b>0.78</b> | <b>0.80</b> | <b>0.84</b> | <b>0.87</b> |
| China                     | 0.32        | 0.41        | 0.54        | 0.70        | 0.76        | 0.78        | 0.82        | 0.86        |
| Japan                     | 0.88        | 0.91        | 0.94        | 0.99        | 1.00        | 1.02        | 1.05        | 1.07        |
| Hong Kong                 | 0.68        | 0.80        | 0.90        | 0.96        | 1.02        | 1.03        | 1.09        | 1.12        |
| Dem.Rep. Of Korea         | 0.56        | 0.56        | 0.67        | 0.79        | 0.81        | 0.85        | 0.85        | 0.82        |
| Republic of Korea         | 0.43        | 0.53        | 0.61        | 0.76        | 0.83        | 0.89        | 0.97        | 1.00        |
| Mongolia                  | 0.34        | 0.28        | 0.31        | 0.38        | 0.47        | 0.57        | 0.70        | 0.76        |
| <b>South-Eastern Asia</b> | <b>0.29</b> | <b>0.33</b> | <b>0.39</b> | <b>0.46</b> | <b>0.53</b> | <b>0.61</b> | <b>0.67</b> | <b>0.74</b> |
| Burma                     | 0.27        | 0.29        | 0.34        | 0.39        | 0.44        | 0.50        | 0.54        | 0.60        |
| Cambodia                  | 0.22        | 0.24        | 0.25        | 0.22        | 0.28        | 0.36        | 0.40        | 0.43        |
| Indonesia                 | 0.28        | 0.30        | 0.36        | 0.42        | 0.50        | 0.59        | 0.69        | 0.75        |
| Lao. People's Dem. Rep    | 0.20        | 0.20        | 0.20        | 0.19        | 0.21        | 0.27        | 0.33        | 0.39        |
| Malaysia                  | 0.33        | 0.42        | 0.52        | 0.62        | 0.67        | 0.73        | 0.74        | 0.80        |
| Philippines               | 0.34        | 0.40        | 0.47        | 0.52        | 0.56        | 0.61        | 0.66        | 0.74        |
| Singapore                 | 0.71        | 0.84        | 0.92        | 0.99        | 1.01        | 1.02        | 1.05        | 1.07        |
| Thailand                  | 0.31        | 0.36        | 0.47        | 0.55        | 0.62        | 0.72        | 0.78        | 0.79        |
| Viet Nam                  | 0.17        | 0.20        | 0.27        | 0.38        | 0.51        | 0.59        | 0.66        | 0.75        |
| <b>South-Central Asia</b> | <b>0.27</b> | <b>0.30</b> | <b>0.34</b> | <b>0.40</b> | <b>0.43</b> | <b>0.49</b> | <b>0.57</b> | <b>0.62</b> |
| Bangladesh                | 0.18        | 0.19        | 0.20        | 0.24        | 0.30        | 0.37        | 0.53        | 0.58        |
| Bhutan                    | 0.19        | 0.21        | 0.23        | 0.25        | 0.27        | 0.33        | 0.38        | 0.43        |
| India                     | 0.29        | 0.32        | 0.37        | 0.44        | 0.47        | 0.53        | 0.59        | 0.64        |
| Iran                      | 0.19        | 0.32        | 0.38        | 0.41        | 0.44        | 0.50        | 0.57        | 0.63        |
| Nepal                     | 0.18        | 0.21        | 0.24        | 0.28        | 0.32        | 0.37        | 0.42        | 0.46        |
| Pakistan                  | 0.20        | 0.22        | 0.25        | 0.27        | 0.30        | 0.36        | 0.42        | 0.47        |
| Sri Lanka                 | 0.51        | 0.55        | 0.61        | 0.64        | 0.71        | 0.76        | 0.78        | 0.82        |
| <b>Western Asia</b>       | <b>0.35</b> | <b>0.41</b> | <b>0.47</b> | <b>0.53</b> | <b>0.58</b> | <b>0.64</b> | <b>0.70</b> | <b>0.74</b> |
| Armenia                   | 0.68        | 0.78        | 0.83        | 0.88        | 0.89        | 0.87        | 0.91        | 0.96        |
| Azerbaijan                | 0.55        | 0.62        | 0.69        | 0.74        | 0.78        | 0.81        | 0.82        | 0.86        |
| Iraq                      | 0.28        | 0.32        | 0.37        | 0.46        | 0.50        | 0.55        | 0.52        | 0.56        |
| Israel                    | 0.78        | 0.80        | 0.82        | 0.86        | 0.90        | 0.92        | 0.94        | 0.96        |
| Kuwait                    | 0.42        | 0.46        | 0.53        | 0.64        | 0.75        | 0.85        | 0.91        | 0.95        |
| Saudi Arab                | 0.21        | 0.26        | 0.32        | 0.38        | 0.44        | 0.51        | 0.63        | 0.71        |
| Turkey                    | 0.35        | 0.42        | 0.50        | 0.56        | 0.62        | 0.69        | 0.78        | 0.83        |
| United Arab               | 0.34        | 0.40        | 0.48        | 0.59        | 0.65        | 0.74        | 0.82        | 0.88        |

*Source: United Nations (1960 c)*

## Conclusion

The fertility transition is virtually complete in Eastern Asia, well under way in most of South-eastern and South-central, and Western Asia. Fertility dropped below the replacement level in all populations of Eastern Asia with the exception of Mongolia, where the total fertility rate is 2.4 children per

women. Below replacement fertility has been reached in Singapore and Thailand in South-eastern Asia and Sri-Lanka in South-central Asia. In western Asia, Armenia, Azerbaijan has exhibited below-replacement fertility.

In Asia, while Singapore, Hong Kong and the Republic of Korea where fertility has declined dramatically in the 1960's and 1970's are, at the same time, the countries or regions that have experienced the most dramatic economic development in this period, fertility has persisted one of the highest levels in the world in Nepal, Bhutan, Burma and Lao, People's Dem Rep which are among the poorest countries. Thus we could say that, there is a fairly strong relationship between socio-economic development and fertility decline.

In the rest South-eastern and South-central Asia, a combination of socio-economic development and effective family planning programs produced unexpectedly rapid fertility declines.

Even in West Asia, which has the highest fertility levels in Asia, the fertility transition is under way, without the impetus of significant family planning programs. Kuwait and Turkey have experienced the greatest fertility declines in the region. Turkey stands out with a recent decline in TFR to 2.5 but fertility remains high in Saudi Arabia.

### Reference

1. Atoh, Makoto. 1989. Population Prospects in Developing Countries: Structure and Dynamics: The determinants and Prospects of Fertility in Asian Countries. Reprint series, No 2 September 1989
2. United Nations. 1999. Below Replacement Fertility, Special Issues Nos 40/41
3. United Nations. 2000. World Population Prospects, The 2000 Revision, Volume 1, Comprehensive Tables. Sales No. ESA./SER.A/195
4. United Nations. 1992. Pattern of Fertility in Low Fertility Settings, Sales No. ST./ESA/SER.A/131
5. Bongaarts, John 2002. The End of the Fertility Transition in the Developing World. Expert Group Meeting on Completing the Fertility Transition, Population Division, United Nations, New York
6. Jean-Pierre Guengant. 2002. The Proximate Determinants During the Fertility Transition, Expert Group Meeting on Completing the Fertility Transition, Population Division, United Nations, New York
7. United Nations 2002. Fertility Levels and Trends in Countries with Intermediate Levels of Fertility. Population Division, New York
8. United Nations 2001. "Demographic Dynamics in the ESCAP Region: Implications for Sustainable Development and Poverty", Asia-Pacific Population Journal 16(1):45-65
9. Freedman Ronald 1995. Asia-Pacific Population Research Reports: Asia's recent fertility decline and prospects for future demographic change. No 1. East West Center, USA
10. UNFPA and The Asian Population and Development Association(APDA), 1998. Population Policies in Asia, APDA Resource Series 6, Tokyo, Japan
11. World Fertility Survey, 1984. Major Findings and Implications, London, United Kingdom

12. Ogawa Tsuya, 1994. Demographic Change and Human Resource Development in the Asia-Pacific Region: Trends of the 1960s and 1980s and future prospects, page 3-45, Nupri reprint series No. 48, Nihon University Population Research Institute, Japan
13. Bhakta Gubhaju, 2002, Below Replacement Fertility in Asia: Determinants and Consequences, ESCAP, Thailand
14. United Nations Population Division, World Population Prospects: the 2002 Revision Population Database <http://www.esa.un.org/unpp>