

## Impact of Demographic Dividend on the Economy of Developed and Developing Countries

H.R. Anulawathie Menike,  
Department of Economics, University of Kelaniya

### Abstract

---

*There is a close relationship between demographic transition and demographic dividend. Because of a demographic dividend is created by the process of the demographic transition. The “Demographic Dividend” “Demographic window of opportunity” or “demographic bonus” would have a positive impact on economic growth. This study has paid attention whether the demographic dividend has affected to the economic growth in developed and developing countries. The study mainly based on secondary data and to examine the impact of demographic dividend on economic growth, descriptive analysis method were adopted. According to the study, there is a great influence of demographic dividend on economic growth of many countries in the world. Already the cases of “East Asian Tigers” prove that the demographic bonus can contribute to accelerate economic growth. The issue is whether other countries undergoing the transition can reap similar benefits. The success of economies have been attributed to a number of factors; such as, well educated labour force, favorable global economy, an innovative dynamic business sector, industrial policies that supported development of key sectors and high rate of savings etc. However, for countries to realize this bonus, their economies must be strong enough to absorb the growing labour force without increasing unemployment or depressing wages.*

*Key words: Demographic dividend, demographic transition, economic development, developed countries, developing countries*

---

### Introduction

The demographic transition process changes the age structure of a population from a young to an old age distribution, due to declines in fertility and mortality (Bloom, Canning and Malaney, 1999). Demographic window of opportunity brought out by the demographic transition. This bonus arises due to the more rapidly increasing of the working-age population relative to the total population. During this period of "demographic bonus" or "window of opportunity", the smaller young and old aged population reduces social sector expenditures due to less demand for health care services. As well as reduced demand for educational services due to declines in the growth of the school aged population. Therefore the demographic bonus is likely to contribute partly to the growth of the national economy if favorable policies are pursued (Navaneetham, 2002). The report of the symposium on population and economic development held in Italy characterizes the window of opportunity as,

1. More workers producing more total output, if they are productively employed.
2. Greater accumulation of wealth, if savings occur and are productively invested.
3. A large supply of human capital, if appropriate investments are made in its formation (Birdsall & Sinding, 1998).

The developed world has reached an advanced stage of the demographic transition. Because the demographic transition in the developed world began in the 19<sup>th</sup> century. Fertility rates are below replacement level in many countries in Europe and population is growing at a slow rate. But developing countries are slow in reaching demographic transition because of historical reasons. In the developed world, the industrial revolution in the 1800s, led to

overall development and prosperity, resulting in lower birth and death rates. The developing world missed these opportunities which have been recognized to colonization, and the attendant lack of growth. Widespread poverty, low levels of education and weak family planning programs have kept the average number of children born to each women to more than six in many parts of the developing world.

In the South Asian countries, both levels of fertility and mortality were very high for a long period and then fertility started to decline first in Sri Lanka. Since early 1960s it was followed by India and Bangladesh in mid 1970s. In Pakistan and Nepal, the decline in fertility was evident since the mid-80s. However, most countries in the world are now in the third stage of demographic transition, with low fertility and low mortality. Also, its related age structural transition, with an almost stable young age population, increasing working age population and older population. This demographic transition has greatly been affected to the economic development process in many countries through the demographic dividend. Thus, the main objective of this paper is whether the demographic dividend in developed and developing countries has affected to the economic growth and development.

## **Literature Review**

Bloom and Williamson (1997) have shown based on the cross-sectional analysis of 78 Asian and non-Asian countries that growth of the working age population (Demographic Bonus) has had a powerful positive impact on GDP per capita growth while growth of the total population has had a negative impact. It is well known that economic growth in the East Asian countries was significantly contributed by demographic gift, which is decline in young aged population and increase in working aged population. As a result it is universally accepted that the increase in working age population will lead to rapid economic growth of countries. (Asian Development Bank, 1997; Bloom and Williamson, 1998; Mason, 1998). According to Bloom and Canning (2005), "East Asia's macroeconomic performance is tracked very closely by its demographic transition and resulting changes in age structure". He says that one-third of its "economic miracle" can be accounted for as a demographic dividend. According to the Deaton and Paxon (1997) demographic dividend in a country, a strong positive impact on savings. Mason and Kinugasa (2004) revealed that, countries adopted strong family planning programs, fertility rates dropped rapidly, population growth slowed and economic development accelerated due to demographic dividend.

## **Data and Research Methodology**

The study mainly based on secondary data. The data were collected from available literature, research papers, survey reports etc. related to the topic. To examine the impact of demographic dividend on economic growth, descriptive analysis method were adopted.

## **Brief Introduction to Demographic Transition and Demographic Dividend**

In 1929, Warren Thompson introduced "modern demographic transition theory" that was later developed by Frank W. Notestein in 1945 (Graham, 1993). It is a theoretical framework for understanding the demographic changes that occurred in Europe and North America during the preceding century. The idea of population and development come together in the Demographic Transition Model (DTM), which attempts to show the ways in which birth and death rates are connected with development stages. There are,

- (1)
- (2) Pre Modern (Pre-Industrial Stage)

This is the first stage of development, associated with high death rates and high birth rates. In this stage where there is a less income within an agricultural economy, the crude birth rate and the crude death rate are paralleled and are at a higher level. In the death rate, there could be seen a minor increase. To prevention of diseases, to control the family members were not done as the knowledge of science had not been advanced at that time. Therefore as the birth and death rates were at a higher level, there is a little population growth during this development period.

(3) Early Transition (Transitional Stage)

During this stage of development, the process of industrialization has begun, causing death rates beginning to drop, compared to the pre-industrial stage. Birth rate during this period is still high and as a result of that, the highest potential for population growth. In this early transition stage, the economy becomes a specialized marked economy and with the increase of scientific knowledge, improved living conditions and the output of modern productions, the death rate begins to decrease sharply. By this, as economic and socialistic changes have not taken place, sufficiently the birth rate generally remains unchanged. Therefore, a large population increase can be seen in this stage.

(3) Late Transition (Industrial Stage)

During this phase of development, modernization has occurred, continuing the lowering of death rates and the beginning of a decrease in birth rates. There is also much social change which occurs during this period, which contributes to the lowered birth and death rates. Specially, in late transition stage, there has been agricultural development, technological development, urbanization, modernization and industrialization. Economic development, the increase of income levels and on account of the changes of social attitudes; it was possible to bring down the birth rates. But the crude death rate decrease more rapidly than the birth rate. When the death rate was reduced, the birth rate too was reduced. As a result of that, the lowering of the speed of the growth of population has caused.

(4) Modern (Post-Industrial Stage)

In this phase of development, death rates are low and birth rates have continued to decrease. The modern stage, as it was not possible to decrease, the crude death rate and the crude birth rate arose to a steady level, the natural growth of population occurs in less than 1%. Most countries that have entered this stage of development are European nations. Although, such as USA, Soviet Russia, Japan and many industrialized countries have entered this stage, the developing countries have still been unable to reach that stage. As large numbers of the above mentioned developed countries have reached the final stage of demographic transition at the moment, they have very badly faced the problem of the aging population.

The stages of demographic transition differs from country to country (Kuroda, 1993). In certain countries the process of the demographic transition has completed or nearing completion. In such countries, the value of the demographic transition index  $\{(Population\ 60+ / Population\ <14) \times 100\}$  is 1 or close to 1. It is a special feature that all developed countries have reached these targets. In terms of the effects of the demographic transition on population age structures, can distinguish three separate stages (United Nations, 2007, Rajan and James, 2000).

**Stage 1:** Mortality declined, particularly in the younger ages resulting in sharp increase young population and young dependency ratio. In this stage, there are too many children

compared to adults and elderly. This stage involves considerable investment in children's health and education and it is expected to reduce savings at household level. Hence this period is not conducive for investment and economic growth.

**Stage 11:** Fertility decline resulting in a bulge in the working ages produces the lowest dependency ratios. As the dependency ratios for both young and old are at the lowest level, this stage is believed to be highly conducive for economic growth. Specially, in this stage is expected to have the following characteristics.

- Growth in labour force at the macro level.
- Decline of young and old dependency ratios at the macro level.
- Increase in the saving rate among households.
- Rapidly increase in government saving and investment.
- Rapidly increase in economic growth.

**Stage 111:** Old age dependency increases with ageing of the population. There is no evidence to suggest that there will be a declaration in economic growth during this stage.

Among these three stages, during the second stage of the transition, a population is optimally employed to benefit from economically productive investment. Because its levels of economic dependency are low and there are relatively more potential workers to support persons in the non-productive ages (children and the older population). Demographers' call this period of demographic window, demographic bonus or demographic window of opportunity brought out by the demographic transition. The demographic window of opportunity arises due to the more rapidly increasing of the working-age population relative to the total population.

### **Relationship between demographic dividend and economic development**

Briefly, we can discuss how the demographic dividend helps to economic development. The changes in population age structure, childbearing and life expectancy created special opportunities for rapid economic growth. Here, there are three opportunities have been identified by the demographers (Ross, 2004).

1. Expansion of the potential labour force. For an example, Declining fertility and mortality in Japan, South Korea, Singapore, Thailand and Indonesia resulted in changes in the age structure of their population. Particular importance to economic growth was changes in the size of the working age population relative to the two dependent populations, children and the elderly. Between 1960 and 1990, the labour force in these six Asian countries grew more rapidly than the total population by an average of 25 percent. The result of this "demographic bonus" was an increase in per capita income of about 0.8 percent per year.

2. Favorable conditions for savings and investments. The East Asian example is instructive, with its extremely high rates of physical and human capital accumulation seen as a major factor behind its economic success (Bloom and Canning, 1999). That means demographic bonus provides the opportunity for increased savings and investment for economic development (Ross, 2004). Between 1965 and 1990, capital per worker grew at an annual rate of more than 8 percent in South Korea and Taiwan, nearly 8 percent in Japan and more than 6 percent in Thailand. Compared with levels in the 1970s, annual saving and investment nearly doubled in the 1980s and nearly doubled again in the 1990s. There are several reasons for saving rates so high in East Asia. Recent research shows that changes in

population age structure, childbearing and life expectancy all have an effect. As East Asians have fewer children, they can afford to save more. With life expectancy increasing and the average retirement age declining, they also have a greater incentive to save in anticipation of longer periods of retirement (Mason and Westley, 2002).

3. Favorable conditions for investment in human resources. That means the effect of demographic changes on education. A high youth dependency ratio may reduce parents' ability to finance educational investments. There is some macroeconomic evidence showing a negative effect of family size on school enrolment rates and educational attainment (Bloom and Canning, 1999).

### **Demographic dividend in developed and developing countries**

Both the developed and developing countries are experiencing substantial changes in their age structures with possibly important implications for long run economic growth. Bloom and others say that, many "countries in the world already have used this age structure transition for their economic development" (Bloom, Canning, Fink and Finlay, 2007). Demographic bonus period is expected to be very conducive period for economic development. That means this provides the opportunity for increased savings and investment for economic growth, at a time when relatively fewer resources are required for investment in education (Ross, 2004). The economic benefits of the demographic bonus, of course, are depending on favorable internal and external economic settings, political and social stability.

Between 1960 and 1990 the five top performing economies in East Asia happened to be South Korea, Singapore, Hong Kong, Taiwan and Japan. Of course the success of these economies have been attributed to a number of factors; such as, a fiscally conservative export oriented economic policy, well-educated labour force, favorable global economy, an innovative dynamic business sector, industrial policies that supported development of key sectors, and high rate of savings etc. (Singh, 2004). Nevertheless, for countries to realize this bonus, their economies must be strong enough to absorb the growing workforce without increasing unemployment or depressing wages.

However, demographic dividend is a limited window of opportunity. That means it is time limited. After this opportunity countries should be faced to the ageing problem. Many developed nations already are facing the end of their demographic transition and now must plan for their ageing populations and a decline in their worker-to-dependents ratio. Additionally, some are experiencing shrinking population. Further, this demographic dividend is not inevitable. It should be earned. Without the right policy environment, countries will be too slow to adapt to their changing age structure.

The East and Southeast Asian countries, however, will face a different kind of challenge in the future. The demographic bonus will be available only for another 15-20 years. There will be faster growth in the old aged population after 15 years and stagnation or decline in the working age population in these countries. This population ageing is a major product of the demographic transition, which has occurred in most areas of the world. In the developed countries, where the demographic transition started earlier, the elderly population already forms a significant proportion of the total population. In the developing countries, ageing issues have only recently begun to emerge as a cause of concern. This is because ageing is a macro view of an entire population and the proportion and number of older persons in most of these countries is still quite low. However, in the coming decades,

population ageing will occur over a large part of Asia and the Pacific. Therefore, in order to minimize the socio economic issues which occurred in consequence of ageing population, suitable programs and plans should be implemented in advance.

When we concern about India, as a neighbor country of Sri Lanka, we can learn more lessons from them. When we compare with Sri Lanka, the demographic transition in India is behind than Sri Lanka. But India has reached a high economic growth than Sri Lanka. India as considered a developing country, although it is one of the most affluent developing countries in the world due to recent economic growth (Kothare, 1999). Government reforms over the past years brought about an unprecedented strong economic performance. In India as a whole, GDP grew at a rate of over 5 percent in 1992-93 and 6 percent in 1993-94 and 7 percent in 1997 (Kothare, 1999). Also Indian economy experienced a GDP growth of 9.0 percent during 2005-06 and 9.4 percent during 2006-07. Due to the rising population a large labour force is created. Through Indian fiscal policies, India is able to spend money on education to instruct the youth and adults, in order to help them play a productive role in India's economy. Due to the rise in the education among citizens, India was able to generate a high employment opportunities. The high rates of employment meant that India's economic sectors, mainly agriculture and industry, began increasing their productivity. Increase in productivity thus meant an increase in the output of goods and services. Currently, India has become one of the world's fastest growing economies, primarily due to the rise in population growth creating a positive effect on its long run economic growth. India is now ranked as one of the top producers in agriculture and is a top nation in terms of GDP in a developing country. In many cases, economists are correct in saying that population growth has a positive effect on economic growth of a nation (Kothare, 1999).

The labour force in Sri Lanka has increased during the period 1960-1990. The rate of growth of population in Sri Lanka has declined from 2.8 percent during 1946 to 1963, to 1.5 percent during 1981 to 1990, while the rate of growth of labour force has increased from 2.0 percent to 3.7 percent during the same period. This is the higher growth rate reported during the period 1946-1990. According to these figures, it is clear that while during the period 1946 to 1963, population was going faster than the labour force; subsequently during 1963 to 1990 the labour force was growing at a faster rate (Abeykoon, 1991; Central Bank of Sri Lanka, 1998). The expansion of the labour force is due to the high fertility rates experienced during the 1950s and 1960s. According to the population projections of Prof. De Silva, the demographic bonus period of Sri Lanka which began in 1991 will continue until 2017. Thus, we have already passed two decades, and less than three years remain. Therefore, it is a prime responsibility of the government and other stakeholders to make an effort at least now to utilize this rare opportunity to foster economic growth.

## **Conclusion**

Most countries in the world are more advanced in the demographic transition. Developed countries have already reached to the third stage of demographic transition. But the majority of developing countries are in the second stage and are still in time to benefit from the demographic bonus. During the second stage of the transition, a population is optimally employed to benefit from economically productive investment. Because its levels of economic dependency are low and there are relatively more potential workers to support persons in the non-productive ages (children and the older population). The study reveals that, there is a great influence of demographic dividend on economic growth of many countries in the world. Already developed countries like “East Asian Tigers” prove that the demographic bonus can contribute to accelerate economic growth. Though a demographic

bonus was there in many developing countries like Sri Lanka, it has been unable to reach the sufficient economic growth, because of not taking advantage from it. When we compare with Sri Lanka, the demographic transition in India is behind than Sri Lanka. But India has reached a high economic growth than Sri Lanka, due to the rising population a large labour force is created. Currently, India has become one of the world's fastest growing economies, primarily due to the rise in population growth creating a positive effect on its long run economic growth.

## References

- Abeykoon A.T.P.L (1991), "*Population Growth and Distribution Trends*", A Paper Presented at the Workshop to Review the Current Problems for Nutritional Improvement in Sri Lanka, Burial, Sri Lanka.
- Birdsal N & S Sinding (1998), "Report on Symposium on Population and Economic Development", November 2-6, Bellagio, Italy.
- Bloom D.E & Williamson J.G (1997), "Demographic Transition and Economic Miracles in Emerging Asia", Working Paper 6268, Cambridge, NBER.
- Bloom D.E & Williamson J.G (1998), "Demographic Transition and Economic Miracles in Emerging Asia", The World Bank Economic Review, Vol. 12, No. 3, pp. 419-455.
- Bloom D.E and Canning D (2005), "Global Demographic Change: Dimensions and Economic Significance", Harvard Initiative for Global Health Working Paper Series, Working Paper No. 1, pp. 1-47.
- Bloom D.E, Canning D, Fink G and Finlay J (2007), "Does Age Structure Forecast Economic Growth", Harvard School of Public Health, Boston.
- Bloom D.E, Canning D and Malaney P.N (1999), "Demographic Change and Economic Growth in Asia", CID Working Paper No. 15, Centre for International Development at Harvard University, pp. 1-62.
- Central Bank of Sri Lanka (1998), Economic Progress of Independence of Sri Lanka, Central Bank of Sri Lanka, Colombo.
- De Silva W.I (2004), "Ahead of Target: Achievement of Replacement Level Fertility in Sri Lanka before the Year 2000", Asia-Pacific Population Journal, 9(4), ESCAP, pp. 3-34.
- Deaton A and Christina H Paxson (1997), "The Effects of Economic and Population Growth on National Saving and Inequality", Demography, 34(1), pp. 97-114.
- Graham R.J (1993), "Population Growth and Development", North Central Sociological Association Annual Meeting, Toledo, Ohio, University of Cincinnati, pp. 1-15.
- Kothare R (1999), "Does India's Population growth has a Positive Effect on Economic Growth", Social Science 410, pp. 2-14. <http://pages.cs.wisc.edu/diuv/data/paper/Kothare99.pdf>.
- Kuroda, Tosio (1993), "*Population Ageing in Asia and its Economic and Social Implications*", Asian Population Studies Series, No. 124, Bangkok, pp.155-159.
- Mason A (1988), "Savings, Economic Growth and Demographic Change", Population and Development Review, Vol.14, No.1, pp. 113-144.
- Mason A (2001), "*Population Change and Economic Development: What We Learned from the East Asia Experience?*" Working Paper No. 01-3, Paper Presented at the Meetings of the Western Economic Association International, San Francisco.
- Mason A and Kinugasa t (2004), "East Asian Economic Development: Two Demographic Dividend", Paper Presented for Conference on Miracles and Mirages in East Asian Economic Development, Honolulu, HI, pp.1-23.
- Navaneetham, K (2002), "*Age Structure Transition and Economic Growth: Evidence from South and Southeast Asia*", Asian Meta Centre Research Paper Series, No.7, Asian Meta Centre for Population and Sustainable Development Analysis, Asia Research Institute, National University of Singapore, pp.1-27.
- Rajan S.I and James K.S (2000), "*Demographic Transition and Economic Development in Kerala: The Role of Emigration*", Project Report Submitted to SANEI as Part of the MIR Study, Available at: [www.saneinetwork.net/research/mir/3.pdf](http://www.saneinetwork.net/research/mir/3.pdf)
- Ross John (2004), "Understanding the Demographic Dividend", [http://www.policyproject.com/pubs/general\\_report/Dimo-Div.pdf](http://www.policyproject.com/pubs/general_report/Dimo-Div.pdf).
- Singh K (2004), "*Is Development Necessary for Population Stabilization?*" CPR Occasional Paper Series 2002-03, Occasional Paper No.3, Center for Policy Research, New Delhi, pp. 3-21.
- Srivastava N (2000), "Miracle Economy", <http://www.businessworldindia.com/archive/200110/ecol/htm>. United Nations (2007), World Population Prospects, The 2006 Revision, New York.
- <http://en.wikipedia.org/wiki/kerala>