

**AGE STRUCTURE TRANSITION AND DEMOGRAPHIC BONUS IN SRI LANKA****Dr. H. R. Anulawathie Menike**

Senior Lecturer, Department of Economics, University of Kelaniya, Sri Lanka

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**ABSTRACT**

Each country would undergo a period comprising of a “window of opportunity” or a “demographic bonus” during the age structure transition. The window of opportunity or demographic bonus would have a positive impact on economic growth. At present, Sri Lanka is enjoying a demographic dividend of a strong and young work force. In the last few decades, Sri Lanka has experienced major demographic changes. From a young age structure, the population is gradually shifting to an older distribution. The transformation in the population age structure can have important impacts on economic growth. This paper makes an attempt to study the age structure transition and demographic bonus in Sri Lanka. The study reveals that Sri Lanka was unable to achieve a significant level of development since it has failed to take the maximum contribution of increased labour force. The dividend will not be long time since the elderly dependency is increasing rapidly. Therefore, this is an opportunity that needs to be used immediately.

**Key Words:** *Demographic transition, Demographic bonus, Age structure, Labour force, Sri Lanka*

**Introduction**

Sri Lanka is well advanced in its demographic and epidemiological transition. It was one of the first developing countries to achieve below-replacement level fertility and its population is rapidly aged during the course of this country. Demographic transition in Sri Lanka started quite early in comparison to other low-income countries (Karunaratne, 2000, p.211). Implementation of free health facilities reduced the death rate by one-third in mid 1940s. Furthermore, legalization of family planning programs in the early 1970s led to a significant decline in the birth rate. In addition, expansion of educational facilities and other social development achievements also influenced the rapid demographic transition. During the process of age structural transition, there will be a period of ‘window of opportunity’ during which child dependency ratio declines due to decline in fertility as well as increase in the working age population as children born during the high fertility regime move into working ages. If this

window of opportunity is duly utilized, there is a greater potential for demographic dividend through increased savings and investment for economic growth.

Both the developed and developing countries are experiencing substantial changes in their age structures with potentially 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, p.5). As noted earlier, demographic bonus period is expected to be very conducive period for economic development. It means this provides the opportunity for increased savings and investment for economic growth (Jones, 2004). Thus, this paper makes an attempt to study the age structure transition and demographic bonus in Sri Lanka.

This paper analyzes the relationship between changes in population age structure and economic growth in Brazil between 1970 and 2050.

### **Literature Review**

According to the Simon (1977), younger cohorts' age will enter the work force with higher education than the previous cohorts, as well as they will be more productive than older cohorts resulting in greater economic development. Bloom, Canning and Sevilla say this demographic transition affects labour supply, savings and human capital formation (Bloom, Canning and Sevilla, 2000). 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, p.5). 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; Cyrus and Lee, 2000; Mason, 1998). Further studies have reported that the shift in age structure has had a significant impact on economic growth through savings and investments (Mason, 1988; Bloom and Williamson, 1997).

### **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. Further, this study employed a descriptive analysis for the data analysis.

## Population Growth, Demographic transition and Age Structure in Sri Lanka

Sri Lanka's population rose from 2 million in 1871 to 12 million in 1969 i.e., around six fold increase in a century. The first doubling from 3 to 6 million took approximately 50 years, while the second doubling from 6 to 12 million took only about 38 years. According to the projections, the next doubling from 12 to 24 million would take approximately 65 years (Johnes & Selverathnam, 1971; Central Bank of Sri Lanka Annual Reports; Dept. of Census and Statistics, 1974; Korale, 1988).

During the past five decades the mortality rates in Sri Lanka, have shown a continuous descending trend. The crude death rate, which was 12.6 per thousand of the population in 1950, has declined to 5.9 per thousand in 2011. Similarly, the infant mortality rate, which was 82 per thousand live births, has dropped to 9.4 per thousand in 2009. As a result, life expectancy at birth has increased from 43.9 years for males and 41.6 years for females in 1946 to 73 and 78 years respectively in 2011 (Census Reports of Department of Census and Statistics; World Population Data Sheets; Central Bank of Sri Lanka). Also, the sex ratio was 98 men to 100 women. Life expectancy and sex ratio are projected to further favor women. The key reasons for these changes are, first, Sri Lanka had an impressive record of preventive and medicinal health care since independence. Second, rising education levels have raised knowledge about contraceptive methods, births supervised by skilled health personnel and infant immunization, and also provide employment opportunities for women, thereby, rising their age at marriage (Daily Mirror, May 14, 2008). Consequently, fertility rates and infant and child mortality rates have fallen, and in turn reduced birth and death rates, and life expectancy has increased. Hence, the population in Sri Lanka is ageing. Globally, in Sri Lanka life expectancy and sex ratios favor women. In the country, more men than women have been lost to the country due to the civil conflict; accidents and permanent migration, further decline these differences.

In Sri Lanka, fertility rates too have shown continuous decline over the past five decades. Crude birth rate and the total fertility rate have shown significant decline between 1952 and 2007. The crude birth rate, which was 38.8 per thousand of the population in 1952, has declined to 17.4 in 2011 (Department of Census and Statistics, Census reports). Meanwhile, the population currently 20 million is expected to peak at around 22 million in 20 years and decline slowly thereafter. As a result of these changes, the age structure of the population in Sri Lanka has changed dramatically with base of the population pyramid contracting.

**Table 1: Age Structure of the population in Sri Lanka**

Year	Total Population in Thousand	As a Percentage of Total Population			Annual Increase Percentage			
		0-14	15-59	60+	Total	0-14	60+	Median Age
1946	6657	37.2	57.4	5.4	-	-	-	21.3
1953	8098	39.2	54.9	5.4	2.80	4.05	2.77	20.8

1963	10582	41.5	52.5	5.9	2.68	2.88	3.51	19.4
1971	12690	39.0	54.7	6.3	2.27	1.49	3.27	19.7
1981	14847	35.2	58.2	6.6	1.57	0.55	2.00	21.4
1991	17259	31.2	60.7	8.1	1.51	0.31	3.50	25.0
2001	19015	25.2	64.8	10.0	0.97	-1.20	3.09	28.8
2011	20873	22.7	64.2	13.1	0.93	-0.10	3.63	32.5
2021	22324	19.9	62.3	17.8	0.67	-0.64	3.72	36.3
2031	23129	17.3	60.8	21.9	0.35	-1.02	2.40	39.5

Source: Rathnayake & Siddhisena, 1998; De Silva, 1994

Currently, Sri Lanka has entered the third stage of demographic transition. As a result of that Sri Lanka has very high elderly population among the South Asian countries and also it is being continued fast. In 1946, when Sri Lanka took its first post-Second World War census, the population age structure was relatively young, with about 37 percent of the total population being under 15 years of age. This proportion, however, increased to nearly 42 percent in 1963 and thereafter gradually declined to 35 percent at the census taken in 1981 (Abeykoon, 1996). According to the census in 2001, a further reduction of those, under 15 years of age has lowered to 25 percent (Department of Census and Statistics, 2001). The changes in percentage of children in a population affect the other age groups of a population. According to the population projections in Sri Lanka, as a result of low fertility, the percentage of population of those below 15 years of age is decreasing and the population percentage of the aged (60+) is increasing (Siddhisena & Ratnayake, 1998; De Silva, 1994). Thus the recent fertility changes have made a direct impact on the proportion of population below 15 years.

As a result of total fertility decreases the percentage of child population under 15 years of age in 1953 was 39.2% of the total population and 2001 it was reduced to 24.8%. This percentage has been projected to be 17.3% in 2031 (Siddhisena & Ratnayake, 1998; De Silva, 1994). On the other hand, the percentage of elderly population in 1953 was 5.4% of the total population and 2001 it was increased to 10.0%. This percentage has been projected to be 21.9% in 2031. However, the annual growth rate of the elderly population in Sri Lanka is increasing faster than that of the total population. Between 1981 and 1991, the growth rate of the elderly population was more than double that of the total population (Siddhisena & Ratnayake, 1998; De Silva, 1994). As a result of the future trends in fertility, mortality and international migration, the proportion of the population aged 60 and over is projected to double from 1981 to 2011 (from 6.6 percent to 13.1 percent). In the year 2031, about 22 percent of the Sri Lankan population will be elderly. This change has been brought about by the rise in life expectancy at birth from 42 years in 1946 to about 74 years in 2001 and the decline in the number of children per woman in the reproductive ages from about five children in the early 1960s to the current level of about two children (Population Division, 2002; Siddhisena, 2000). The longevity has increased substantially for both males and females over the six decades since 1946. The life expectancy of

women remains higher than that of men. According to the 2001 census, life expectancy of men and women are 70.8 years and 75.5 years respectively. Demographers have estimated that life expectancy of men and women will be increased 73.5 years and 78.5 years respectively in 2025 (Abeykoon, 1991).

Also, the trend of the increasing ratio of older to young (Index of ageing) has been speeding up from 1981 to 2031. The index of ageing were only 14 elderly persons for every 100 children in 1963, but in 1991 the corresponding figure had increased to 26, and it is projected to be as high as 127 in the year 2031 (Siddhisena, 2004, p.9; De Silva, 1994, p.25). These trends obviously indicate a change of the population pyramid of Sri Lanka in the future. During the early years, the age pyramid was an expanding type that is broad-based, indicating high birth rates and decreasing death rates. The shape of the population pyramid of Sri Lanka has now changed to a smaller base reflecting some changes in the age structure. As a result of the elderly population growing faster compared to growth of the child population, the broad-based population pyramid is transforming into a "barrel-shaped one. This situation directly affects the dependency ratio in the population.

**Table 2: Dependency Ratio and the Index of Aging in Sri Lanka 1881 – 2031**

Year	Child Dependency Ratio(0-14)/(15-59)	Elderly Dependency Ratio(60+)/(15-59)	Total Dependency Ratio (0-14)+(60+)/(15-59)	Index of Ageing (60+)/(0-14)
1881	81.8	5.8	84.6	7.1
1891	81.5	5.8	83.4	7.1
1901	76.6	4.9	77.5	6.4
1911	74.6	7.8	77.5	6.5
1921	70.1	7.8	76.1	11.2
1946	64.9	9.6	71.8	14.8
1953	72.3	9.8	68.6	13.6
1963	79.0	11.4	76.1	14.5
1971	71.3	11.5	82.1	16.2
1981	60.5	11.3	76.1	18.8
1991	51.4	13.3	65.2	26.0
1995	43.8	14.3	51.3	32.7
2000	38.1	15.3	46.4	40.3
2005	35.5	17.2	44.7	48.3
2010	34.3	20.1	44.5	58.5
2015	32.5	23.8	44.9	73.2
2020	30.4	27.9	45.6	91.7
2031	24.6	36.0	60.6	126.6

Source: The Population Division

The child dependency that was 81.8 in 1881 was reduced to 43.8 in 1995. In contrast to that the elderly dependency ratio increased from 5.8 to 14.3 according to table 2. Thus as the child dependency ratio decreases the whole amount of dependencies during this period seems to decrease. The drop in the fertility rate is the main reason for the drop in the decrease of child dependency ratio. The key factor that increased the dependency ratio of the aged people was the drop in the mortality rate (Ministry of Health & Women's Affairs, 1992, p.4). The index of aging too, has gone up with time. From 1881 to 1995 that index has increased by four times. When we draw our attention towards these projection values it is clear us that in the future, the number of new members that add to the population gradually decreases. As a result of this, by 2000, there will be a decrease in the total dependency ratio.

### **Demographic Bonus or Demographic Dividend**

An important effect of demographic transition is the change in the age structure of the population. Age structure transition is a process of shifting age structure from young to old population. However, in the course of this shift from young to old, there will be a short period of rapid growth of adults in the working age group. It is found that this short period is manifested by low dependency ratios and increase in the working age population. Demographers' call this period of "demographic bonus" or "Window of opportunity" brought out by the demographic transition. In other words, during the time when a high proportion of a country's population falls within the working age group low dependency ratio, the added productivity of the working group can produce a window of economic opportunity (The World Bank, 2005). Specially, the demographic transition affects labour supply, savings and human capital formation. During the 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).

### **Demographic Bonus in Sri Lanka**

When we consider the current age structure in Sri Lanka, it is favorable for economic expansion. Because of the decline in fertility during the past four decades brought about changes in the age structure of population. The proportion of population under 15 years of age has declined from 41.5 percent in 1963 to 22.7 percent in 2011 (Table 1). This has resulted in the reduction in the dependency ratio from 79.0 percent in 1963 to 34.3 percent in 2011 (Siddhisena & Ratnayake, 1998; De Silva, 1994). Therefore, we can understand that the Sri Lanka's current age structure is favorable for economic expansion. Thus, during the next two decades Sri Lanka needs to economically advance rapidly to meet the emerging challenges such as, population ageing which would again gradually increase the dependency ratio from around the year 2015 (Abeykoon, 1996).

Like East-Asian countries, 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, 1996, p. 1; 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 nearly 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.

When we study about the current age structure of the country, we can say that it is a favorable and an appropriate situation for the country. A bulge has been occurred in the labour force in Sri Lanka within last 4 decades, due to the rapid increased population in 1960. But Sri Lanka was unable to achieve a significant level of development since it has failed to take the maximum contribution of increased labour force. This demographic bonus is an advantageous situation for the economic expansion of the country, and it is granted one time to a country.

During the period of 1965-1990 labour force has been increased from 57% to 65% percent of the total population of East Asian countries in which they have used demographic bonus more effectively. During that period, the labour force in Sri Lanka has also been raised in a similar portion. The labour force in 1963 was 55% of the total population and later it was raised in 1995 up to 66% and which is risen up to 69% in 2006. At present rapid economic growth has been achieved by the East Asian countries and they have attained the maximum benefits of window of opportunity (demographic bonus). For an instance, during the period of 1960-1995, in South Korea per capita income has been increased in 21 fold and in Thailand it is in 9 fold. But during this period, per capita income of Sri Lanka has been increased only in 4 fold. Having got the maximum advantage of window of opportunity, we get savings in returns, which are able to invest them in effective sectors. But it is controversial that why Sri Lanka is not in a position to achieve that target, even though, there is a higher representation of younger generation, which plays a major role in its labour force. According to the statistical reports of Ministry of Health and Social Services, it is reported that 2,70,000 young people are added to country's labour force annually while creating limited number of job opportunities, which is about 1,20,000. In spite of present unemployed generation, it has to generate another new job opportunities which about 1,50,000 for another group of people. Especially during the past 4 decades, labour force in Sri Lanka has rapidly increased and simultaneously a number of people have approached in to the labour market. In contrast, unemployment and under employment have rapidly increased due to the job seekers not being able to be generate sufficient number of job opportunities, which are

demanding by them. This situation has directly been impacted especially for savings and investments of both household and public sectors. The major challenge, which Sri Lanka is facing in 21st century, is how it generates sufficient number of job opportunities in order to absorb rapidly increasing labour force. Considerable economic growth is a must for generating job opportunities. But in Sri Lanka it has been unable to meet these requirements. However, the country can be led to a rapid economic growth if we can exploit the present labour force potentially. But, there are many problems related to the labour force in Sri Lanka.

Since 1960, the quality of the new entrants to the labour force of the country was significantly changed due to the expansion of free education throughout the country. The economy couldn't absorb this educated labour. One of the main reasons for this situation is the country's education system. The skills provided by the education system do not meet the labour market requirements. With the diversification of the economy since 1977, the demand for skilled manpower from modern industrial and service sector has been largely increased over the decades. However, still, the education system has not been able to provide the scientific and technically skilled labour enough to meet the demand from the economy.

People in 20-29 years age group, enter into the labour market for the first time after schooling or tertiary education. It is not easy to find employment opportunities for them as they expected. Private sector, which is the main provider of employment opportunities at present, is seeking young persons with a reasonably good knowledge of English. This is the main difficulty faced by the younger job hunters. The younger generation does not like to be farmers. About one third preferred "white collar" jobs (Central bank of Sri Lanka, Annual reports).

In Sri Lanka, the unemployment is highest among people with G.C.E (O/L) and above educational qualifications. The high level of unemployment within educated youth means that the great part of human resource of the country wastes and it is burdened for economic development. One of the main reasons for this situation is the country's education system. The lack of required educational qualifications and skills among educated youth has been a key reason for youth unemployment in Sri Lanka. As evidence suggests, graduates specially graduates of Arts and Commerce are the adversely affected group, recently. They enter into the labour market at the age of around 27 years and with neither work experience nor sufficient English knowledge. The private sector employers prefer to employ young people with good knowledge of English and computer skills. They do not consider the formal education certificates. The unfortunate situation is that graduates have to run after the politicians begging a job. This is an unsatisfactory and unfair situation because graduates have spent more than 20 years on education and especially they were the best students who were able to gain university admission. High level of unemployment among educated has been related with the attitudes of the youths too. They prefer formal protected jobs, which will meet their aspirations. As such, there is a tendency for them to wait. Some times for a long period of time, until they get suitable employment in the formal sector (Nanayakkara, 2004).



## Conclusions and Recommendations

The current age structure in Sri Lanka, it is favorable for economic expansion. The age structure transition in Sri Lanka has produced a demographic dividend covering the period of 1991 to 2030. A bulge has been occurred in the labour force in Sri Lanka within last 5 decades, due to the rapid increased population in 1960. But Sri Lanka was unable to achieve a significant level of development since it has failed to take the maximum contribution of increased labor force. The projected population of Sri Lanka shows that the population will undergo major changes in its size and age sex structure in the coming decades. Also, one of the major challenges that Sri Lanka has to face in the near future is ageing population. It can be seen that ageing population is rapidly rising. Therefore, it is essential to take the highest benefits from demographic bonus as to avoid the adverse effects of the ageing population.

## 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.
- Asian Development Bank (1997), Annual Reports.
- Bloom D.E, Canning D and Sevilla J (2000), "Labour Force Dynamics and Economic Growth", Paper Presented at the August 2000, Summer Institute of the National Bureau of Economic Research, Labour Studies Progame.
- 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 & Williamson J.G (1997), "Demographic Transition and Economic Miracles in Emerging Asia", Working Paper 6268, Cambridge, NBER.
- (1998), "Demographic Transition and Economic Miracles in Emerging Asia", The World Bank Economic Review, Vol. 12, No. 3, pp. 419-455.
- Cyrus Chu C.Y and Ronald Lee (2000 eds), *"Population and Economic Change in East Asia"*, Supplement to Population and Development Review, Vol.26.
- De Silva W.I (1994), *"How Serious is Ageing in Sri Lanka and What can be Done About It?"* Asia-Pacific Population Journal, 9(1), ESCAP, pp. 19-34.
- Department of Census and Statistics (1974), Census of Population in Sri Lanka, Preliminary Report 1971, Department of Census and Statistics, Colombo, Sri Lanka.
- John Ross (2004), "Understanding the Demographic Dividend", <http://www.policyproject.com/pubs/general report/Dimo-Div.pdf>.

- Johnes G.W and Selverathnam S (1971), Population Growth and Economic Development in Sri Lanka, Hansa Publishers Ltd., Marga Institute, Colombo.
- Karunaratne H.D (2000), “Age as a Factor Determining Income Inequality in Sri Lanka”, The Developing Economics, xxxviii-2, pp.211-242.
- Korale R.B.M (1988), “Demographic Trends and Projections”, Sri Lanka in the Year 2015, First Annual Sessions of the Organization of Professional Associations, Colombo.
- Ministry of Health and Women’s Affairs (1992), “Emerging Issues of Population Ageing in Sri Lanka”, Population, Population Information Centre, Population Division, 12(1), pp. 1-3.
- Nanayakkara A.G.W (2004), Employment and Unemployment in Sri Lanka: Trend, Issues and Options, Department of Census and Statistics, Colombo, Sri Lanka.
- 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.
- Ratnayake K and Siddhisena K.A.P (1998), “Ageing of Population and Elderly Care in Sri Lanka”, Sri Lanka Journal of Population Studies, 1(1), Department of Demography, University of Colombo, pp.35-55.
- Siddhisena K.A.P (2000), “Mortality Trends, Determinants and Implications in Sri Lanka: Retrospect and Prospect”, Demography of Sri Lanka: Issues and Challenges, Department of Demography, University of Colombo, Sri Lanka, pp. 119-136.
- (2004), "Demography of Ageing in Sri Lanka", Ageing Population in Sri Lanka: Issues and Future Prospects, UNFPA, in Association with the Population Association of Sri Lanka (PASL), pp. 8-39.
- Siddhisena K.A.P and K Ratnayake (1998), "Ageing of Population and Elderly Care in Sri Lanka", Sri Lanka Journal of Population Studies, 1(1), Department of Demography, University of Colombo, pp. 35-55.
- Population Division (2002), Sri Lanka Country Report, Fifty Asian and Pacific Population Conference, Bangkok, Thailand, Ministry of Health, Nutrition and Welfare, Colombo, Sri Lanka.
- The World Bank (2005), “Population, Development and the Demographic Bonus”, Health, Nutrition & Population, The World Bank.
- (1994), “How Serious is Ageing in Sri Lanka and What can be Done About It?” Asia-Pacific Population Journal, 9(1), ESCAP, pp. 19-34.
- Simon J (1977), The Economics of Population Growth, Princeton, N.J, Princeton University Press.