

Impact of Ageing Population on The Economy of Sri Lanka

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Abstract

As a developing country, there are number of prevailing economic problems in Sri Lanka. Among those issues, the population of the country also has become an economic problem as well. During the past few decades the total size and the age structure of the Sri Lankan population have been changed irreversible.

This irreversible change of the age structure affects the economic development in Sri Lanka. The aging population in Sri Lanka has started to grow up rapidly since 1992. The rapid aging of the country's population since this will weigh heavily to the Sri Lankan economy. Sri Lanka is also one of the fastest aging countries in the world. Sri Lanka's share of population over 60 years old in 2000 was 9.2 percent, which exceeded the average of all regions in the world except OECD countries, Eastern Europe and the former Soviet Union.

Due to that, the ratio of the elderly dependents has increased and it made some circumstances in the Sri Lankan economy. An increasing dependency will slow down the economy. This study reveals that the ageing in the country can be influenced on the Sri Lankan economy in various aspects. So the government has to take some actions to overcome from these issues.

Keywords: *Ageing, Age Structure, Population, Sri Lanka, Economy*

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Objective

This study has done to examine the impact of aging population on Sri Lankan economy.

Methodology

The data and the information from the secondary sources has used in this study. And also the correlation between the population and the growth rate in Sri Lanka has calculated in this study.

Following equation has used to calculate the correlation.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Introduction

A population is a summation of all the organisms of the same group or species, which live in the same geographical area and have the capability of interbreeding. In the earlier stages the demographic changes have been seen mostly in the developed countries. But the middle of the last century witnessed that the Asian countries are undergoing a rapid demographic transition. Among the Asian countries, Sri Lanka has come to first place which is having a higher rate in the demographic transition. According to this theory, society's transition from high birth and high death rates to low birth and low death rates that occur as part of the economic development of a country.

This transition can be broken down into four stages such as, the transition stage, the pre-industrial stage, the industrial revolution stage and the post-industrial stage. Sri Lanka holds in the third stage of the demography transition in today.

This demographic transition of a country can be impact in various ways and one of that is an economic issue of a country. The age structure transition in any country, after lapse of a specific period of

transitional process, will approach a demographic dividend phase and during that time the country will have a high ratio of population in the working ages, in relative to the dependent age categories - the aged and the children (De Siva, 2013).

But the problem in this is, in Sri Lanka there is a high ratio of the dependents rather than the proportion of the working age population. There can be seen an inversely proportional relationship between the aging population and the child population in Sri Lanka. The current situation is, the aging population is increasing gradually and the child population is decreasing. It is not a good sign for an economy of a developing country. In this article economic consequences of such age structure in Sri Lanka are examined, with reference to the transitional age segments.

Sri Lankan Population Growth in Past

Sri Lanka's population had grown almost eight times since the first national census of 1871, which counted a population of 2.4 million and had increased to 20 million people in 2010 (De Siva, 2013).

According to the table 1, first doubling of the population has occurred in the year 1925 after 54 years from the years 1871 and the second doubling of the population has occurred in 1960 after 34 years after 1925. The population in 1960 was 9.6 million and the population in 2001 was 18.7 million. So it nearly twice than the population was in 1960.

The country, covering a land area of 65,610 square kilometers, ranks as one of the most densely populated countries in the Asian region (Table 1). As in many other countries, the population of Sri Lanka is not evenly distributed. Some parts within the country are very densely populated while other regions are less populous.

Table 1: Population Growth and Density in Sri Lanka: 1871-2003

| Year | Population ('000) | Average Annual Growth Rate (%) | Density (Per sq. km.) | |
|--------|-------------------|--------------------------------|-----------------------|-----|
| 1871 → | 2.4 million | 2,400 | - | 37 |
| 1881 | | 2,760 | 1.4 | 43 |
| 1891 | | 3,008 | 0.9 | 47 |
| 1901 | | 3,566 | 0.7 | 55 |
| 1911 | | 4,106 | 1.4 | 63 |
| 1921 | 4,498 | 4,498 | 0.9 | 70 |
| 1925 → | 4.8 million | | | |
| 1931 | | 5,307 | 1.7 | 82 |
| 1946 | | 6,657 | 1.5 | 103 |
| 1953 | | 8,098 | 2.8 | 125 |
| 1960 → | 9.6 million | | | |
| 1963 | | 10,582 | 2.7 | 165 |
| 1971 | | 12,690 | 2.2 | 196 |
| 1981 | | 14,847 | 1.7 | 230 |
| 2001 | | 18,735 | 1.2 | 300 |
| 2003 → | 19.2 million | 19,252 | - | 307 |

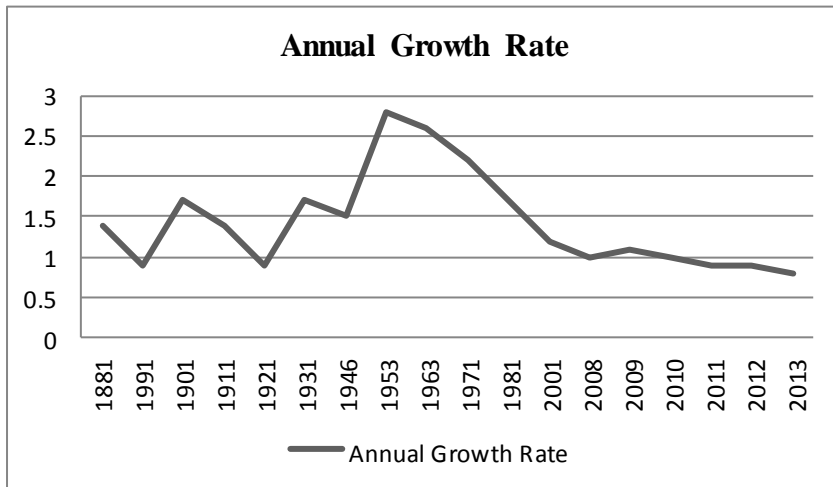
Source: De Silva, 2013.

And the present growth of the population takes different shape rather than the above pattern. The growth of the population happens gradually and it cannot see doubling of the population as in the previous decades.

The average annual percent change in the population, resulting from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving a country.

According to the below chart (Figure 1), the average annual growth rate has reached to the peak point in 1953 and has gradually declined. There was a dramatic escalation in growth rates during post war, from 1946 to 1953 mainly due to the decline in mortality.

Fig. 1. Annual Growth Rate in Sri Lanka (1881-2013)



Source: Author Developed

Note: Present population growth rate in Sri Lanka is 0.8%.

Population Projections of Sri Lanka

Sri Lanka's population will peak at 21.9 million in 2031 from its 19.7 million sizes in 2006, and will then begin to decline unless fertility or immigration rates substantially increase. At that point, Sri Lanka will have one of the oldest populations in the developing world, and that elderly population will be predominantly female, as the projections anticipate a continuing large gap between female and male life expectancy (De Silva, 2007)

According to the below data (Table 3.), the population will negatively decline after reaching to the peak point in year 2031.

There is a negative correlation (-0.98179) between the population and the growth rate in Sri Lanka since 2001-2016 and hope there will be a same correlation till 2031.

As said in above whether there can be seen a decline in population growth rate, there will be a positive correlation between the population and the growth rate (0.946975) from 2036-2071.

Note: Year 1981 excluded in this correlation due to the missing value of growth rate.

Table 3: Enumerated and Projected Population
1981 - 2071 (Standard Projection)

| Year | Population (‘000) | Growth Rate (%) |
|------|----------------------|--------------------|
| 1981 | 14,847 | - |
| 2001 | 18,734 | 1.40 |
| 2006 | 19,720 | 1.03 |
| 2011 | 20,558 | 0.83 |
| 2016 | 21,186 | 0.60 |
| 2021 | 21,580 | 0.37 |
| 2026 | 21,804 | 0.21 |
| 2031 | 21,883 | 0.07 |
| 2036 | 21,841 | -0.04 |
| 2041 | 21,712 | -0.12 |
| 2046 | 21,465 | -0.23 |
| 2051 | 21,104 | -0.34 |
| 2056 | 20,656 | -0.43 |
| 2061 | 20,145 | -0.50 |
| 2066 | 19,590 | -0.56 |
| 2071 | 19,030 | -0.58 |

Source: De Silva, 2007

Gender Balance of a Country is An Important?

In demography, the human sex ratio is the ratio of males to female. There should be a gender balance in the population of a country. Gender imbalance of a country may arise as a consequence of various factors. Especially it will impact on the economy.

According to the Census data in 2001, every 100 females there were only 98 males whereas in 1981 there were 104 males, which clearly indicates, that, the sex ratio largely favoured males at that time. As shown in the following table (Table 4.) the sex ratio of males per 100 females is declining gradually.

The projection highlights, when the Sri Lankan population reaches to the peak point in 2031, the sex ratio will be 94.4 males for 100 females and then it will decline to 92.4 males for 100 females in

2071. It is clear that in the future population there were more females rather than the males.

Table 4: Enumerated and Projected Population
by Sex 1981 - 2071

| Year | Male ('000) | Female ('000) | Sex Ratio (Males per 100 Females) |
|------|-------------|---------------|---|
| 1981 | 7,568.2 | 7,279.1 | 104.0 |
| 2001 | 9,268.1 | 9,466.2 | 97.9 |
| 2006 | 9,719.8 | 9,999.8 | 97.2 |
| 2011 | 10,099.0 | 10,458.8 | 96.6 |
| 2016 | 10,373.0 | 10,812.5 | 95.9 |
| 2021 | 10,538.5 | 11,041.4 | 95.4 |
| 2026 | 10,617.7 | 11,186.1 | 94.9 |
| 2031 | 10,629.0 | 11,253.5 | 94.4 |
| 2036 | 10,585.7 | 11,255.4 | 94.1 |
| 2041 | 10,502.4 | 11,209.9 | 93.7 |
| 2046 | 10,366.5 | 11,098.9 | 93.4 |
| 2051 | 10,176.1 | 10,928.0 | 93.1 |
| 2056 | 9,943.4 | 10,712.3 | 92.8 |
| 2061 | 9,686.3 | 10,458.6 | 92.6 |
| 2066 | 9,411.9 | 10,178.3 | 92.5 |
| 2071 | 9,140.1 | 9,889.5 | 92.4 |

Source: De Silva, 2007

If the female population increased rather than the male population, may arise a consequence in the economy. The labour participation is less in female rather than the male (Table 5). Then the dependency ratio will increase on the other hand because most of the female are unemployment. It will be a great effect to the Sri Lankan economy as a developing country.

Though the ratio of the male for the 100 female is decreasing as mentioned above but according to the labour force participation rate (Table 5), male participation rate is higher than the female participation rate.

The proportion between the labour participation rate of male and female in 2013 is 75.5: 35.6. It means there are males who give their participation to the labour force more than twice of female.

Table 5: Labour Force Participate Rate (2004-2013)

| Year | Male | Female | Total |
|------|------|--------|-------|
| 2004 | 67.2 | 33.0 | 49.6 |
| 2005 | 67.3 | 32.6 | 49.3 |
| 2006 | 68.1 | 35.7 | 51.2 |
| 2007 | 67.8 | 33.4 | 49.8 |
| 2008 | 67.9 | 4.3 | 50.2 |
| 2009 | 66.7 | 33.7 | 49.2 |
| 2010 | 67.3 | 32.1 | 48.6 |
| 2011 | 66.7 | 32.8 | 48.8 |
| 2012 | 75.0 | 32.9 | 52.6 |
| 2013 | 75.5 | 35.6 | 54.2 |

Source: Department of Census and Statistics Central Bank of Sri Lanka.

Changing Age Structure and Aging in Sri Lanka

Aging is a result of lower death rate and the lower birth rate. The birth rate in Sri Lanka is 16.24: 1000 populations and there are 6.06 deaths/1000 populations in 2014. Looking at ways in which the shift towards higher numbers in an ageing population would affect the economy, more specifically its effect on chances of employment amongst the youth, it was suggested that there was the possibility of extending the retirement age beyond the age of 60 to support the elderly population; it was noted that the Government would have to turn to such alternatives to lend a helping hand to the ageing population.

Consider about the population by broad age groups it should be noted that, the children of less than 15 years are the most susceptible to the assumptions that have been utilized in all three projection scenarios. Their numbers will depend on the key determinants affecting the changes in fertility, namely the changes in the number of women in reproductive ages and changes in infant and child mortality.

Table 6: Distribution of Population by Three Broad Age Groups
1981 – 2071

| Year | Children <15 Years | | Working Ages 15 - 59 Years | | Elderly 60+ Year | |
|------|-----------------------|------|-------------------------------|------|---------------------|------|
| | Number | % | Number | % | Number | % |
| 1981 | 5,236.4 | 35.3 | 8,625.2 | 58.1 | 985.1 | 6.6 |
| 2001 | 4,922.4 | 26.3 | 12,080.5 | 64.5 | 1,731.4 | 9.2 |
| 2006 | 4,807.4 | 24.4 | 12,836.7 | 65.1 | 2,075.7 | 10.5 |
| 2011 | 4,692.4 | 22.8 | 13,294.8 | 64.7 | 2,570.4 | 12.5 |
| 2016 | 4,523.6 | 21.4 | 13,591.9 | 64.2 | 3,070.2 | 14.5 |
| 2021 | 4,196.1 | 19.4 | 13,778.8 | 63.8 | 3,605.1 | 16.7 |
| 2026 | 3,825.3 | 17.5 | 13,863.2 | 63.6 | 4,115.0 | 18.9 |
| 2031 | 3,520.3 | 16.1 | 13,826.2 | 63.2 | 4,536.1 | 20.7 |
| 2036 | 3,363.2 | 15.4 | 13,589.3 | 62.3 | 4,888.8 | 22.4 |
| 2041 | 3,299.0 | 15.2 | 13,026.7 | 60.0 | 5,386.7 | 24.8 |
| 2046 | 3,244.7 | 15.1 | 12,389.5 | 57.7 | 5,831.2 | 27.2 |
| 2051 | 3,149.3 | 14.9 | 11,874.0 | 56.2 | 6,080.6 | 28.8 |
| 2056 | 3,018.3 | 14.6 | 11,401.3 | 55.2 | 6,236.1 | 30.2 |
| 2061 | 2,902.9 | 14.4 | 10,939.5 | 54.3 | 6,301.7 | 31.3 |
| 2066 | 2,839.0 | 14.5 | 10,415.9 | 53.2 | 6,335.3 | 32.3 |
| 2071 | 2,807.2 | 14.8 | 9,893.2 | 52.0 | 6,329.1 | 33.3 |

Source: De Silva, 2007.

According to the data (table 6), the population rate of the children lower in 15 years and the working population between 15 - 59 Years are decreasing gradually. But the 60+ population in Sri Lanka has increased till 2014 and it will increase in the future too. As it shown in the table if an aging population increases, it will create economic problems in Sri Lanka.

The 15-59 aging group consider as the working population of the country. If it decreased the working force of the country will go down. An aging population could lead a shortage of workers and hence push up wages causing wage inflation. Alternatively, firms may have to encourage people by providing a working practice. On the hand, if the 60+ population increases then the dependents of the country also will increase. It also creates economic issues as mention below.

Impact of Aging in the Economy

Increasing Aged Dependency

The dependency ratio of Sri Lanka has increased since 1981 – 2011 and the projection highlights it will increase more in the future. The ratio of over 60 aged people will be 64.0 and the total dependency will 92.4. It will be a great issue to the Sri Lankan economy.

Government has to spend in education for the children, and also it has to spend more from the national income for the health care of the dependents and for the pension and the other compensations of the elderly people.

Table 8: Dependency Ratio (1981-2071)

| Year | Child Dependency <15 Years | Old Age Dependency 60+ Years | Total Dependency |
|------|-------------------------------|------------------------------------|---------------------|
| 1981 | 60.7 | 11.4 | 72.1 |
| 2001 | 40.7 | 14.3 | 55.0 |
| 2006 | 37.4 | 16.2 | 53.6 |
| 2011 | 35.3 | 19.3 | 54.6 |
| 2016 | 33.3 | 22.6 | 55.9 |
| 2021 | 30.4 | 26.2 | 56.6 |
| 2026 | 27.6 | 29.7 | 57.3 |
| 2031 | 25.5 | 32.8 | 58.3 |
| 2036 | 24.7 | 36.0 | 60.7 |
| 2041 | 25.3 | 41.4 | 66.7 |
| 2046 | 26.2 | 47.1 | 73.3 |
| 2051 | 26.5 | 51.2 | 77.7 |
| 2056 | 26.5 | 54.7 | 81.2 |
| 2061 | 26.5 | 57.6 | 84.1 |
| 2066 | 27.3 | 60.8 | 88.1 |
| 2071 | 28.4 | 64.0 | 92.4 |

Source: De. Silva, 2007.

If the retirement age remains fixed, and the life expectancy increases, there will be relatively more people claiming pension benefits and less people working and paying income taxes. The fear is that it will require high tax rates on the current, shrinking workforce (Pettinger, 2013).

Health Expenditure on Aging People

Sri Lanka's demographic transition is apparent not only in the age pyramid but also in the disease profile of the country. Communicable diseases such as Malaria, Tuberculosis and Japanese Encephalitis have shown less morbidity and mortality patterns, while diseases such as diabetes, cancer and cardiovascular diseases (CVDs) are on the rise. In Sri Lanka, one of the main difficulties faced by the country's healthcare provision is to separate health expenditure for the elderly from general health expenditure. A considerable proportion of elderly in the country require long term intensive care for both preventive and curative purposes.

Table 9: Government Health Expenditure (1980-2013)

| Year | Government Health Expenditure |
|---------|-------------------------------|
| 1980/81 | 8.4 |
| 1985/86 | 10.0 |
| 1990/91 | 9.7 |
| 1995/96 | 10.4 |
| 2002 | 8.0 |
| 2005 | 9.6 |
| 2006/07 | 6.9 |
| 2009/10 | 7.9 |
| 2012/13 | 8.7 |

Source: Department of Census and Statistics Central Bank of Sri Lanka.

As a result of an aging population in Sri Lanka, the government health expenditure from the national income has increased gradually. The health expenditure increased since 1980. It has reached to the peak point in year 1995/96 and again it has decreased. But again it has increased in 2002 and 2005. In 2006/07 the rate has gone down and after 2008 it has increased since now.

The projection also highlights (table 9.1) that the public expenditure as a percentage from the gross domestic product (GDP) also will increase in the future. It will be 4.8% in 2101.

Table 10: Projected Health Spending, 2005 – 2101

| Baseline Output | NHE as % of GDP | Public expenditure as % of GDP | Private expenditure as % of GDP |
|-----------------|-----------------|--------------------------------|---------------------------------|
| 2005 | 4.2 | 2.0 | 2.2 |
| 2015 | 5.8 | 2.2 | 3.6 |
| 2025 | 7.7 | 2.3 | 5.4 |
| 2050 | 13.2 | 2.7 | 10.5 |
| 2075 | 18.7 | 3.6 | 15.1 |
| 2101 | 26.4 | 4.8 | 21.6 |

Source: Rannan-Eliya, 2008

Government Spending On Pensions

A continuous increase in the number of pensioners during the period 1992 - 2010 is indicated in Table 10. The commitment of the government to allocate an increased amount of funds annually to pay pensions is evident.

The aged population who are not beneficiaries of a pension fund would normally depend on their savings or their children's income for consumption spending. Such a tendency will affect the economy at macro level because there will be a decline in the total domestic savings. In such situations, if domestic savings are insufficient for investment, alternative sources have to be sought. Not only that on the other hand have those who are in retirement tended to pay law tax payments because they are not working.

As a result of this the working people have to pay higher taxes. This could create a disincentive to work and for firms to invest and there could be a fall in productivity as well as in growth. (Pettinger, 2013).

Table 10: Total Number of Pensioners in Sri Lanka
1992-2013

| Year | Total Number of Pensioners |
|------|----------------------------|
| 1992 | 258,120 |
| 1993 | 293,719 |
| 1994 | 303,993 |
| 1995 | 310,854 |
| 1996 | 332,824 |
| 1997 | 342,343 |
| 1998 | 358,228 |
| 1999 | 364,472 |
| 2000 | 371,728 |
| 2001 | 383,838 |
| 2002 | 394,625 |
| 2003 | 400,000 |
| 2004 | 411,427 |
| 2005 | 418,923 |
| 2006 | 430,153 |
| 2007 | 438,190 |
| 2008 | 445,120 |
| 2009 | 456,113 |
| 2010 | 473,762 |
| 2011 | 493,549 |
| 2012 | 510,343 |
| 2013 | 521,699 |

Source: Department of Pensions Sri Lanka

Conclusion

During the past few decades it is very clear that the demographic structure has changed in several times in Sri Lanka. The total size and the age structure have changed irreversible. As a developing country Sri Lanka held in the third stage in the demography transition structure and if we use the opportunities well then this population can be used in an effective way and we may able to reach to the take-off stage in economic too.

When consider about the present situation of the country it shows that, although the population grow rapidly it is not useful to the economic in Sri Lanka because the population consists more with the aging people. An aging population is an extra expenditure for the government.

An aging population is a result of the low fertility and the mortality. As an Asian country we are still hang on our traditions. But my view is now it is the time to see the world in a broad view. This aging problem is not only occurring in Sri Lanka or in the other developing countries. It has become a problem in the developed countries too. But the differentiation is the developed countries are using several solutions to sort out the problem.

Sri Lankan government also can use these kinds of actions to sort out the aging problem in Sri Lanka. Not only that the government can introduce new policies which are aimed at increasing participation of older workers, the retirement age could manage to be more flexible, it can improve the skills and the choices available to the older workers, the government could identify the obstacles for employment of older workers and provide suitable solutions to outcome from those obstacles.

It is not practicable to worrying about the aging population of the country because there are several paths to which can us uses to overcome from this aging problem and to use them also to develop the economy in Sri Lanka. Now is the time to think about this issue and to address it in a proper way. The responsibility is up to the government of Sri Lanka because those solutions have to be come from the head of the country.

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