Long-term Impact of Population Ageing on Sri Lanka's Public Finance

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Introduction

Population ageing is a major socioeconomic challenge faced by Sri Lanka during recent years. The United Nations' forecast of the age structure transition of Sri Lanka from 2015 to 2050 shows an increasing share of the aged population who are 60 years and above, from 13.9 per cent to 28.6 percent (United Nations, 2015). The old age dependency ratio would rise from 14.1 in 2015 to 37.7 in 2050. When compared to other countries in the region, Sri Lanka is foremost as a society with a rapidly ageing population (Siddhisena, 2004).

Accordingly, policymakers are confronted with two conflicting objectives: to develop socioeconomic systems which provide economic security to the increasing elderly population, and to sustain economic growth in the long-run while coping with the ageing population. Success in achieving these objectives depends on right and effective policies implemented when required. The study focuses on the sustainability of public finances in Sri Lanka when increasing public expenditure due to elderly population.

According to King and Jackson (2000), increases in elderly population do not lead to negative fiscal consequences. Visco (2001) examined the fiscal impact and sensitivity of age related expenses up to 2050. Similar

to Jackson's (2000), Visco's study noted that ageing has an impact on public finances, but whether it would be fiscally sustainable had not been analyzed. Narayana (2012) has analyzed whether ageing of Indian population has a long-run bearing on public finances from 2005 through 2050 using Miller's Budget Forecasting Model and National Transfer Accounts. He concluded that ageing population is not a huge burden on India's public finances. The study by De Silva (2007) assessed long-term demographic dynamics of the Sri Lankan population from 2001-2081, and concluded that Sri Lankan population would face major changes in its age structure in the coming decades.

Objectives

The primary objective of the study is to quantify long-run impacts of population ageing on Sri Lanka's public finances. This research problem is specifically chosen because almost every previous research has emphasized on the issue of ageing population and the need to increase expenditure for the benefit of the elderly, but whether it is fiscally sustainable for Sri Lanka has not been comprehensively analyzed. Therefore, an attempt is made in this study to fill the above research gap.

Methodology

Both quantitative and qualitative secondary data are used in the analysis. In order to estimate long-run economic impacts of ageing on public finances, the sample period considered is 1980-2050. Data from 1980-2014 are used in a forecasting exercise to predict values till 2050 using Vector Auto Regression in Eviews software. The researcher has employed Budget Forecasting Model to forecast effects of changing demographic age structure on two major social sector budgets: public pensions and social protection. Impact is assessed by simulating two fiscal instruments: government revenue and expenditure. Analysis is fiscally sustainable if a favorable Fiscal Support Ratio is observed in 2050.

Results and Discussion

The increasing size of Pensions and Social Protection budgets is clear evidence of population ageing effects on public finances (Table 3). The increased share is largely accounted for by larger public expenditure on pensions and other transfers (Table 4). One reason for this could be that Sri Lanka does not have a universal old age social security system. Expenditure on social protection would rise due to the oldest category of the aged increasing, and the likely reduction of family support for them in the future.

Only 50 per cent of employed population is estimated to be covered by organized retirement programs while it is 25 per cent in the informal sector. In contrast, majority of Sri Lankan employees are engaged in the informal sector without a proper social security scheme. Estimates also say that pensions or provident funds are available only to 30 per cent while public assistance is only for 10 per cent of Sri Lankan aged. Government funding in various retirement programs is a huge burden on public finances. Between 1992 and 2002, government expenditure on retirement programs increased approximately four- fold to a level that constituted about 20 per cent of total government expenditure (Siddhisena 2004). This fiscal burden would increase owing to the larger number reaching retirement age as the number of government employees have increased significantly.

The forecasted share of total expenditure for elderly population shows an increase from about 17 per cent in 2021 to about 29 per cent in 2050 (Table 5). An increasing trend is observed in absolute terms of tax revenue during 2021-2050 (Table 2). In contrast, the Fiscal Support Ratio (FSR) gives a reverse trend as number of tax payers relative to public transfer beneficiaries drops due to ageing. The percentage of pensioners increasing from 2 per cent in 2000 to 3.7 per cent in 2014 is evidence for this. Similar calculations for FSR show 298 for 2010 and 199 for 2015. Change in FSR indicates the relative size of tax increase or cut in benefits required to return to initial tax position. Assumption

on FSR is that age profiles of benefits and taxes remain unchanged over time, with their absolute levels increasing at the same rate as economic growth.

Table1: Fiscal support ratio

Year	FSR
2021	233
2031	189
2041	156
2050	134

If the above were to happen, it would have a negative impact on Sri Lanka's public finances. However, FSR is still above the conventional benchmark of 100 in 2050 which suggests that ageing would not drastically reduce tax buoyancy in the long-run. It is likely that pension and social security expenditure grow at a rate higher than the ability of the tax base to sustain them. Government has to anyway pay pensions which it has already promised to employees when they are recruited. The declining FSR may also due to falling proportion of the productive labor force during 2021-2050, as revealed by projections. However, the decline in FSR is not that drastic because around 61 per cent of the Sri Lankan workers are in the informal sector according to the Department of Census and Statistics.

Conclusion and Recommendations

Population ageing does matter for public finances of Sri Lanka. The forecasting exercise demonstrates that ageing would impose financial pressure on the social security system. Amidst the increasing aggregate public expenditure for elderly and the future tendency to reduce tax buoyancy, the positive FSR implies that population ageing may not have an adverse impact on Sri Lanka's public finances.

The projected shrinking of the labor force could be compensated by three ways: increasing retirement age, labor productivity and female

labor participation. Phased retirement and increased flexibility of employment, especially for employees with a long service record, are measures taken elsewhere in the world which Sri Lanka could follow. Jobs which require less physical work need to be expanded for the elderly to be productively engaged in the labor market. Part time jobs should be available to older workers who are still willing to work although retired. Suitable jobs for educated young women must be created. Industries favoring female workers should be promoted, there has to be an attitudinal shift regarding employing females, and flexible working arrangements should be in place to allow female re-entry to work force after child bearing.

References

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Table 1: Fiscal and non-fiscal variable descriptions and measurement

Variable	Measurement
1. Tax revenue	Total tax revenue received by central government
2. Total government Spending	Combined recurrent and capital expenditure of central government
3. Education	
4. Health	
5. Poverty and other social Protection	
6. Interest payments	Combined expenditure of central government on interest payments
7. Pensions and other transfers	Annual expenditure allocated by central government for pensions and other transfers
8. Government services	Total government spending minus (3) through (7)

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Forecasting Assumptions

- Fiscal structure of 2013-14 continued till 2050 as baseline scenario.
- Since age-specific public expenditure categories are unavailable in Sri Lanka, Pensions and Social Security entirely targeted towards the elderly.
- All variables measured at current market prices.

Table 2: Forecasted total public expenditure and tax revenue

Year	TPE	Tx
2021	4, 397, 665	1, 716, 738
2031	10, 292, 738	4, 033, 304
2041	21, 418, 373	8, 281, 167
2050	41, 386, 757	15, 999, 630

Notes: a) Population projections in secondary sources are calculated every 10 years.
b) Forecasted data in calculating TPE are given in Table 1.
c) TPE = PENS+ SP+ GS+ HEL+ EDU+ IRP

Timothy Miller's Budget Forecasting Model (BFM): The aggregate expenditures are estimated as the multiplicative sum of per capita expenditures and total population size:

Equation 1: B (t) = b (t) * p (t)
B (t) - aggregate budget expenditure at time t
b (t) - per capita budget expenditure at time t
p (t) - total population size at time t
Demographic details are added to the model by:

Equation 2: B (t) = sum { b (x, t) * p (x, t)}
b (x, t) - per capita budget expenditure at age x and
time t p (x, t) - population at age x and time t
Socioeconomic details are added to the model by (E.g. SP):
Equation 3: B (t) = sum { b (sp, x, t) * p (sp, x, t)}

b (sp, x, t) - per capita budget expenditure for social protection sp, at age x and time t
p (sp, x, t) - population for social protection sp, at age x and time t

Assumptions of the model

- Budgetary factors, i.e. per capita expenditures remain constant (in Equation 2) at their current levels in order to estimate age-specific government spending patterns over time, i.e. b (x, t) = b (x, 2014)

This assumption is used because it is difficult to evaluate age-specific spending components. By using the above assumption, the researcher was able to isolate the effect of changing demographic age structure on budget expenditures.

- The age profiles are held constant (in Equation 3) to analyze effects of changing demographic age structure on budget expenditures, i.e. B (t) = b (x) * p (x, t)
- Rate of productivity, interest and inflation rates are unaffected by levels of government taxation and distribution of government spending.