

# SUSTAINABILITY OF THE PUBLIC SERVANT'S PENSION SCHEME IN SRI LANKA

**R L C Shyama**

**Tiloka de Silva**

Sri Lanka Journal of  
Economic Research  
Volume 11(1) November 2023  
SLJER 11.01.02: pp. 27-50  
Sri Lanka Forum of  
University Economists

DOI: <https://doi.org/10.4038/sljer.v11i1.194>



---

## Abstract

Despite the global trend towards defined-contribution pension schemes, many public service pensions continue to follow defined-benefit structures, imposing a significant fiscal burden. This paper analyses the main public sector pension scheme in Sri Lanka in a context where the population is ageing rapidly and the government faces strong fiscal constraints. The study aims to forecast the costs of the Public Servants' pension scheme and quantitatively evaluate policy options for improving fiscal sustainability. The study extends the model of Rannan-Eliya et al. (1998) using detailed data on the number and age structure of pensioners as well as information on public sector wages, inflation, and GDP growth. The model's output is validated using observed pension costs from 2016-2022, and projections and policy simulations are carried out for 2023-2027. The study finds that expenditure on the scheme is estimated to increase by 6% annually and 10% over the next five years in real terms. Reducing the generosity of pension payments, raising the retirement age, suspending gratuity payments temporarily, and reducing the replacement rate for new retirees result in significant reductions to the annual pension bill, although the latter two options are unlikely to be politically feasible.

**JEL:** H00, B55, H30, H51

**Keywords:** *Defined-benefit pensions, Old age income-security, Pension reforms, Public sector pensions*

---

**R L C Shyama (Corresponding Author)**

Department of Decision Sciences,  
University of Moratuwa, Sri Lanka.

Email: [shyamac@uom.lk](mailto:shyamac@uom.lk)

 <https://orcid.org/0000-0002-5266-295X>

**Tiloka de Silva**

Department of Decision Sciences,  
University of Moratuwa, Sri Lanka.

Email: [tilokad@uom.lk](mailto:tilokad@uom.lk)

 <https://orcid.org/0000-0002-0543-2182>



## INTRODUCTION

Most pension schemes around the world have their roots in public sector schemes that were designed with the intention of making public service attractive and shifting some of the cost of public sector employment into the future (Boileau et al., 2022; Palacios & Whitehouse, 2006). While pension coverage has now been expanded to encompass the private sector, important differences between these two types of pension schemes persist in many countries, both developed and developing (Boileau et al., 2022; Palacios & Whitehouse, 2006; Whitehouse, 2016). In countries where public sector pensions are distinct from the private sector or national schemes, the benefits available to public sector employees tend to be more attractive than those enjoyed by the rest of the population, primarily due to the private sector's shift to more affordable defined-contribution designs (or, in many developing countries, due to lack of formal pension schemes outside the public sector), while many public sector programs are, or retain elements of, defined benefit schemes (OECD, 2007, 2018).

As countries experience increased life expectancy and lower fertility, the fiscal sustainability of public sector pensions is becoming an increasingly pressing issue as future payments are usually paid out directly from government revenues (pay-as-you-go, PAYG) or underfunded pension funds (Ponds et al., 2011). Accordingly, reforms have been undertaken in many countries with the intention of making public sector pensions more fiscally sustainable and benefits more comparable to those in the private sector. Such reforms involve the shift towards defined-contribution schemes, raising the retirement age, reducing the generosity of public-sector schemes, or introducing some form of pre-funding through reserve funds (Grimm & Holzhausen, 2021; Kim et al., 2021; Palacios & Whitehouse, 2006; Ponds et al., 2011). However, the implementation of such reforms is often politically sensitive, given that the employer's concern is in the government.

Despite relatively younger populations and low coverage of formal retirement provisions, pension programs for government officials in many South Asian countries have already become a financial burden, squeezing out crucial investment expenditures to increase growth and reduce poverty (World Bank, 2005). Sri Lanka, given its early demographic transition, is experiencing these consequences of population ageing relatively earlier than the rest of the region (the population aged 60+ was 17.2% of the total in 2023, compared to 10.02% in South Asia, on average (Economic and Social Commission for Asia and the Pacific (ESCAP), 2023). While the role of informal intergenerational transfers is declining, the importance of employment and pensions appears to be growing, with public expenditure on pensions accounting for over 2% of GDP in 2015, compared to the average of just over 1% for the rest of South Asia (Asian Development Bank, 2019a; ILO, 2016a; Shyama & de Silva, 2022; World Bank, 2021). Similarly, the average spending

on civil service pensions for developing countries is 6% of government revenue (Rusconi & Pick, 2020), while in Sri Lanka, it is 18.7% (Central Bank of Sri Lanka, 2020a).

Public pension expenditures in Sri Lanka are dominated by the Public Servant's Pension Scheme (PSPS), which is a pay-as-you-go, defined-benefit scheme covering 676,430 pensioners in 2022 (Treasury of Sri Lanka, 2023). In Sri Lanka, the PSPS is a relatively generous scheme, both in terms of replacement rates and payout period. For instance, replacement rates range from 65% - 90% of the final salary depending on the salary scale and years of service, with an average replacement rate of 85% (Department of Pension, 2020; Kim & Bhardwaj, 2011; United Nations, 2015). In contrast, maximum replacement rates in India, Nepal, and Pakistan are 50%, 50% and 70% respectively (Asian Development Bank, 2019b; Kim & Bhardwaj, 2011; World Bank, 2005). At the same time, while the average life expectancy in Sri Lanka is 76.8 (Central Bank of Sri Lanka, 2020b), the current minimum retirement age in Sri Lanka is 55, and the mandatory retirement age is 60 years (Ministry of Public Administration, 2022). Except for Afghanistan and Nepal, all other South Asian countries have higher minimum retirement ages than Sri Lanka, resulting in Sri Lanka recording the highest pension payout period (21-26 years) in South Asia (Department of Pension, 2020). Accordingly, the scheme is expensive despite its low coverage (covering less than one-fifth of the elderly population) and, given the financial constraints faced by the government, is fast becoming fiscally unsustainable.

Though many studies discuss the importance of pension systems for sustainable population ageing, only a few have attempted to forecast pension costs for Sri Lanka (ILO, 2016a; Rannan-Eliya et al., 1998; World Bank, 2006) and fewer quantitatively compare reform options. Therefore, this study modifies the methodology put forth in Rannan-Eliya et al. (1998) to project the expenditure incurred by the Public Servant's pension scheme. The projections take into consideration the most recent statistics on pensioners, earnings, government employment, and gratuity payments upon retirement, together with projections for GDP and inflation rates. Having validated the output of the model using the actual pension expenditure from 2016 to 2022, the model is used to simulate and quantitatively compare different policy recommendations for improving the sustainability of the scheme.

## **LITERATURE REVIEW**

### **Features of Pension Systems**

In this section, we review the literature that discusses the key characteristics of pension schemes, including institutional arrangements and design features, with an emphasis on the Sri Lankan PSPS, as well as commonly adopted pension reforms around the world. The model used in this paper to project pension expenses incorporates these key features

of the pension system and can be used to simulate the effect of some pension reform options implemented in other countries.

### **Institutional Arrangements**

Pension plans, which provide income replacement after retirement, are designed in a variety of methods and are broadly categorised as defined benefit (DB) or defined contribution (DC). In a DB plan, the cost of the pension payment a retiree receives is fully paid for by the employer and is determined by the number of years of service and some measure of individual earnings from work, while in DC plans, a portion of earnings must be paid into the individual account by employees and employers or the government (OECD, 2007). Pension plans also vary by funding method (PAYG or fully funded) and parameters such as eligibility criteria, replacement rates, the extent of inflation and wage indexation, etc.

The PSPS covers public-sector employees, but there are no public pension schemes available for private-sector employees in Sri Lanka (ILO, 2016a; Grimm & Holzhausen, 2021). However, to ensure old-age income security for private-sector workers, there exist provident funds such as the Employee Provident Fund (EPF) and Employee Trust Fund (ETF) (United Nations, 2015).

While the definition of a public servant varies by country, Sri Lanka's PSPS covers all civil servants, widows/widowers and orphans of civil servants, armed forces, teachers in government schools, and local government employees (ILO, 2016a). Employees who reach the age of 55 and have completed ten years of continuous service (with some exceptions for some professionals, including engineers, medical officers, and judges) in a permanent pensionable position are entitled to retire and receive pension benefits. Benefits range from 65% to 90% of the last pay earned at the time of retirement, depending on the retired employees' gross annual salary and years of service, where employees with the longest service and the lowest gross yearly final salary are eligible for the highest replacement rate. Upon retirement, public sector employees are entitled to a monthly allowance as well as a gratuity payout equal to two years' worth of pension payments as a lump sum. Aside from the benefits paid out to pensioners, the PSPS also pays pensions to the widows/widowers and orphans of public servants after their death, given certain eligibility conditions. (Department of Pension, 2020; Padmakanthi et al., 2021).

Sri Lanka's PSPS overlooks a critical feature of pension design: automatic adjustments, which compensate for the diminishing real value of pension benefits over time due to inflation or adjust pensions in line with the growth in wages. Though ad hoc increases in

benefits are made every few years, particularly close to elections,<sup>1</sup> there is a lack of coherence in pension benefit indexation policy in Sri Lanka, with no specific rules for price or wage indexation (Asian Development Bank, 2019a; ILO, 2016a; OECD, 2016).

### **Pension Reforms**

Public service systems create a large fiscal burden, particularly when the tax base is limited, and public-sector pension reform is an issue of political importance in many countries (Rusconi & Pick, 2020). This is particularly the case for non-contributory plans, in which government employees get paid in retirement without having contributed during their working years. These obligations pose a long-term risk to the government's finances, and there are considerable financial and political difficulties in relieving this risk (Grimm & Holzhausen, 2021; Palacios & Whitehouse, 2006; Rusconi & Pick, 2020; Whitehouse, 2016). While Sri Lanka's public pension system has remained reform-resistant for many years due to political sensitivity, there are many lessons that can be learnt from international experiences of pension reform.

Many OECD nations already have substantial expertise in pension reforms, with the most common pension reforms being increasing contributions, raising the retirement age or the length of service required for a full pension (OECD, 2016). In addition, integrating public sector pension plans with those for the entire workforce has been found to benefit both the public and private sectors in terms of equity, transparency, and mobility (OECD, 2016). However, lessons from these experiences with pension reforms cannot be easily applied in the South Asian context due to large dissimilarities in starting conditions. For instance, in developing countries such as Sri Lanka, it is unlikely that purely contributory programs can provide appropriate or adequate old-age income support for low-income and informal workers; in such cases, public pension plans with a redistributive component may be required (Asian Development Bank, 2019a).

It may be more practical for developing countries to focus on the experiences of their peers. For instance, India switched from an unfunded defined benefit scheme to a funded defined contribution system by closing its unfunded Civil Service Pension to new entrants in 2004 while expanding social protection coverage to all Indian citizens, including previously unprotected informal sector workers. This new system helped strengthen social protection in India though building institutional administrative capacity to improve service delivery continues to be a challenge, and further pension reform is required to improve the benefit levels and pension coverage for the poor (Asian Development Bank, 2015; Rusconi & Pick, 2020). The reforms in Chile, which integrated public and private sector pensions by replacing their public PAYGO defined benefit scheme with a privately

---

<sup>1</sup> For example, in 2005, 2015 and 2019 the government raised the salaries of public sector employees and pensions for retirees (Central Bank of Sri Lanka, 2005, 2015, 2019).

funded mandatory defined benefit scheme such that systematic advantages for public servants were eliminated, are also considered a success (Hujo, 2014; Rusconi & Pick, 2020).

Another commonly used pension reform is changing the retirement age. Many of the OECD countries have retirement ages of 65 to 67 and higher but reforms are implemented in different ways. For instance, Slovenia approved legislation in 2013 to gradually raise the mandatory retirement age for women to equal that of men to 65 years by 2016. In Poland, legislation passed in 2012 raised the retirement age to 67 for both men and women. However, on distinct timelines, men would be able to retire at 67 in 2020, while women would have to wait until 2040 (OECD, 2013). Brazil combined increases the retirement age from 53 to 60 for men and from 48 to 55 for women with the removal of incentives for early retirement by reducing benefits by 3.5% - 5% for each year before the retirement age, changing the pension base from the worker's final salary to 80% of their highest salary in the period prior to retirement, and switching from wage indexation to price indexation (Hujo, 2014; Medici, 2004; Rusconi & Pick, 2020).

Despite much resistance to pension reform in the past, Sri Lanka recently revised the mandatory retirement age upwards from 60 to 65 starting on the 1<sup>st</sup> of January, 2022. However, with the onset of the economic crisis, the mandatory retirement age has been revised back down to 60 years, effective from January 1<sup>st</sup>, 2023 (Ministry of Public Administration, 2022). The government also proposed a new contributory pension scheme in 2016, aimed at reducing the pressure on annual budgetary allocations and ensuring a pension for new recruits to the government at their retirement. However, it was only in 2023 that the Cabinet of Ministers granted approval to establish a National Contributory Pension Fund for new public service employees. The new scheme will be implemented for all public servants recruited after 2016, with 8% of an employee's salary and an additional 12% of the salary as the employer's contribution credited monthly to the proposed fund (Central Bank of Sri Lanka, 2016; Mudugamuwa, 2023). As a defined contribution scheme, the actual pension benefits will depend on the amount of contributions made and the investment returns earned on those contributions. While this represents a significant reform in the pension landscape, the impact of this change will take some years to be felt.

## **METHODOLOGY**

### **Data**

The analysis in this study uses data from multiple sources. Historical data on the annual expenditure on pensions, the number of pensioners and annual wage growth rates, inflation and GDP, are obtained from the Central Bank of Sri Lanka. Data on replacement rates used for pension payments and the age structure of pensioners for 2020 are collected

from the Department of Pensions, Sri Lanka. The wages of government employees are obtained from the nationally representative Labour Force Survey (LFS) 2016, provided by the Department of Census and Statistics, Sri Lanka. The LFS collects information on the employment sector (Government, Semi-Government, Private) of the employees, age, and gross salary at the individual level. Projected future inflation rates and GDP growth rates are obtained from the World Bank (World Bank, 2023).

### Projection Methodology

The estimation of the annual cost of the PSPS is based on a modified version of the methodology put forth in Rannan-Eliya et al. (1998). We use the model to make forecasts on the cost of the PSPS for the period 2023-2027, as well as simulate a range of policy options for pension reform.

The basic output of the model, the total pension cost in a given year,  $n$ , is the sum of the pension cost of each age group ( $PCost$ ) and the gratuity payments made to new pensioners ( $Gratuity\_Pay$ ) (Equation 1). Given that pension payments are transferred to widows/widowers and orphans upon the demise of the pensioner, we consider the lifespan of a pensioner to be 45 years, assuming that both men and women begin receiving benefits at the age of 55<sup>2</sup>.

$$Total\ PCost_{(n)} = \sum_{x=55}^{100} PCost_{(x,n)} + Gratuity\_Pay_n \dots\dots\dots (1)$$

Where  $n$  is the calculated year of the pension burden,  $x$  is the age of the pensioner.

The pension cost for the cohort of pensioners of age  $x$  is the cost to an individual pensioner of the age cohort ( $Individual\ PCost$ ) multiplied by the number of pensioners of that age (Pensioners) (see Equation 2). We use data on the age structure of pensioners ( $PRatio$ ) in 2020, provided by the Department of Pensions, to distribute the total number of pensioners (historical and projected) into the different age cohorts and compute the number of pensioners of age  $x$  (Equation 3).

$$PCost_{(x,n)} = Individual\ PCost_{(x,n)} * Pensioners_{(x,n)} \dots\dots\dots (2)$$

$$Pensioners_{(x,n)} = PRatio_{(x,n)} * Total\ Pensioners_n \dots\dots\dots (3)$$

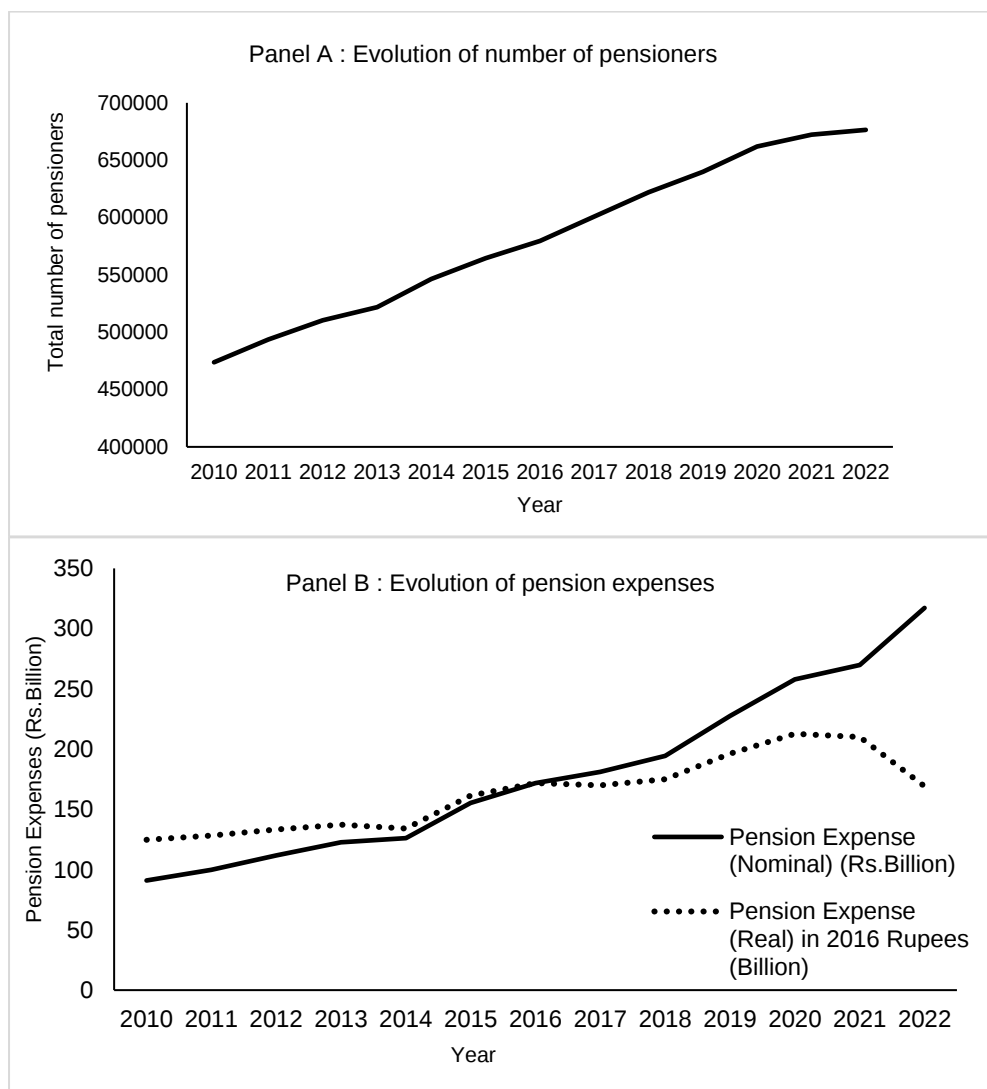
The number of pensioners becoming eligible for pensions each year is a key input for the projections produced by the model. Based on the linear trend observed in the historical data on the number of pensioners obtained from the Central Bank of Sri Lanka (2010-2022) and Treasury of Sri Lanka (2023) (see Panel A of Figure 1), we assume that 20,000 new pensioners are added each year. While the linear trend may eventually taper off,

---

<sup>2</sup> We also consider a version where civil servants begin receiving benefits at the mandatory retirement age of 60. The true figure is expected to lie between these two estimates.

given the transference of pension benefits to dependents on the demise of the pensioner, we consider this assumption to be reasonable within the short timespan considered for our projections.

**Figure 1: Evolution of the Total Number of Pensioners and Total Pension Expenses, 2010-2022**



Source: Central Bank of Sri Lanka, 2011, 2012, 2013, 2014, 2015, 2016, 2019, 2020a, 2021, 2022; Treasury of Sri Lanka, 2023

The pension cost for a pensioner in a given cohort is based on the final wage at retirement (*FinalWage*) and the replacement rate (RR), to which he/she is eligible given his/her years of service and the decision to opt for the gratuity payment (see Equation 4).

$$Individual PCost_{(x,n)} = Final Wage_{(55,r)} * RR \dots\dots\dots (4)$$

For simplicity, we assume that all government employees eligible for the PSPS retire at age 55 after 27.5 years of service (which is the mean years of service reported by the Department of Pensions (2020)) and opt for the gratuity payment. In this case, the gratuity payment is made at the point of retirement and monthly pension payments are made at a reduced replacement rate of 71.5% on average for a period of 10 years, after which the replacement rate is increased to 81.5% (Department of Pensions, 2020). The gratuity payments for 2023-2027 are calculated on the assumption that future gratuity payments are increased in proportion to the increasing number of pensioners, as per the Department of Pensions (2020).

We obtain the mean annual wage of government employees aged 55 from the LFS and scale this value for pensioners retiring before 2016 (up to 1976, assuming a maximum age of 100) and after 2016 using data on real wage growth rates ( $w_t$ ) from 1976-2022 published by the Central Bank. Future wage growth rates are projected to be proportional to forecasted GDP growth based on a linear regression model estimated using historical data on wage growth rates and GDP growth rates.<sup>3</sup>

$$Final Wage_{(55,r)} = Final Wage_{(55,r-1)} * \prod_{t=n}^r [1 + w_t] \dots\dots\dots (5)$$

For comparability, all monetary values are converted to 2016 real values. Accordingly, the pension payments of existing pensioners (those older than 55 in the year considered) are discounted by inflation rates ( $i_k$ ). For the period 2023-2027, we use inflation projections made by the World Bank.

Pension payments of existing pensioners are sometimes revised upward in line with inflation and wage changes. These modifications are reflected in the extent to which pensions are indexed to wage growth ( $w_k^{adj}$ ) and inflation ( $i_k^{adj}$ ).<sup>4</sup> Accordingly, the individual pension cost for an existing pensioner of age  $x$  ( $x > 55$ ) is given by Equation 6.

$$Individual PCost_{(x,n)} = Individual PCost_{(55, n-(x-55))} * adjI_{(x,n)}^{P\_downward} * adjI_{(x,n)}^{P\_upward} * adjW_{(x,n)}^{P\_upward} \dots\dots\dots (6)$$

Where

$$adjI_{(x,n)}^{P\_downward} = \frac{1}{\prod_{k=n-(x-55)}^n [1 + i_k]} \dots\dots\dots (7)$$

<sup>3</sup> The R squared value for the fitted regression model is 53%.

<sup>4</sup> When these indices are set to 0, it suggests that pensions are not revised upwards, whereas when the indices are set 1, it suggests that pension payments are completely reflective of inflationary and real wage growth rates.

$$adjl_{(x,n)}^{P\_upward} = \prod_{k=n-(x-55)}^n [1 + i_k * i_k^{adj}] \dots\dots\dots (8)$$

$$adjw_{(x,n)}^{P\_upward} = \prod_{k=n-(x-55)}^n [1 + w_k * w_k^{adj}] \dots\dots\dots (9)$$

While pension payments under the PSPS are not officially inflation or wage-indexed, they are subject to discretionary upward adjustments at selected time points by the government.<sup>5</sup> To incorporate ad hoc changes made to pension payments, we follow Rannan-Eliya et al. (1998) and (ILO, 2016b) and assume full wage indexation (that pension payments are revised upwards in response to public sector wage adjustments). The value we use for the inflation indexation parameter is based on a model validation exercise to best match the actual pension costs observed between 2016 and 2022.

It should be noted that the accuracy of the estimations based on the projection methodology is highly dependent on the model assumptions and that the current economic conditions in Sri Lanka are highly volatile - this is why we restrict ourselves to a relatively short forecast period. Therefore, the main objective of this paper is to obtain an approximate understanding of the trends in the expense incurred by the PSPS and to quantitatively compare the impact of different policy options. The assumed future values for the number of pensioners, real wage growth, gratuity payments, inflation and GDP are summarized in Table 1.

**Table 1: Assumed Future Values for Model Inputs**

| Parameters                         | Year             |         |         |         |         |         | Note                                     |
|------------------------------------|------------------|---------|---------|---------|---------|---------|------------------------------------------|
|                                    | 2022<br>(actual) | 2023    | 2024    | 2025    | 2026    | 2027    |                                          |
| No. of pensioners                  | 676,430          | 696,430 | 716,430 | 736,430 | 756,430 | 796,430 | Based on the methodology described above |
| Real wage growth rates             | -0.205           | -0.042  | -0.006  | -0.001  | 0.006   | 0.006   |                                          |
| Gratuity Payments (in Rs.Billions) | 58.00            | 58.89   | 59.78   | 60.70   | 61.62   | 62.56   |                                          |
| Inflation Rates                    | 0.464            | 0.218   | 0.08    | 0.07    | 0.06    | 0.06    | World Bank (2023)                        |
| Real GDP (in 2016 Rs. Billions)    | 12966            | 12399   | 12544   | 12797   | 13181   | 12435   |                                          |
| Real GDP growth rate               | -0.078           | -0.043  | 0.012   | 0.020   | 0.030   | 0.030   |                                          |

Source: Authors' calculations

<sup>5</sup> For instance, pension expenditure rose suddenly between 2014 and 2015, as well as 2019 and 2020, both of which were years before general elections. As reported by the Department of Pension (2020), the key reason for these unexpectedly high pension expenditures were the introduced amendments to pension circulars imposed by the government. This type of discretionary adjustment is not uncommon in developing countries (Palacios & Whitehouse, 2006).

## RESULTS AND DISCUSSION

### Model Validation

We start by carrying out a model validation exercise to compare the model's output for the years 2016-2022 with actual pension costs under different assumptions on the extent of inflation indexation and two different retirement ages: 55 and age 60. We use the results of this exercise to pin down the suitable value for the inflation indexation parameter for projecting future pension costs (see Table 2 and Table 3).

**Table 2: Predicted Pension Cost for Different Levels of Inflation Indexation if All Retire at Age 55**

| Year | Actual Pension Cost (in 2016 Rs. Bns) | ik <sup>adj</sup> =1 | Error Level | ik <sup>adj</sup> =0.75 | Error Level | ik <sup>adj</sup> =0.5 | Error Level | ik <sup>adj</sup> =0 | Error Level |
|------|---------------------------------------|----------------------|-------------|-------------------------|-------------|------------------------|-------------|----------------------|-------------|
| 2016 | 171.90                                | 177.25               | 3%          | 160.29                  | -7%         | 139.75                 | -19%        | 97.12                | -43.5%      |
| 2017 | 169.95                                | 176.95               | 4%          | 161.13                  | -5%         | 141.33                 | -17%        | 108.96               | -35.9%      |
| 2018 | 175.06                                | 184.93               | 6%          | 170.36                  | -3%         | 151.31                 | -14%        | 119.85               | -31.5%      |
| 2019 | 196.38                                | 201.60               | 3%          | 177.43                  | -10%        | 158.53                 | -19%        | 131.65               | -33.0%      |
| 2020 | 212.70                                | 214.04               | 1%          | 189.28                  | -11%        | 169.75                 | -20%        | 103.71               | -51.2%      |
| 2021 | 210.16                                | 220.35               | 5%          | 213.81                  | 2%          | 207.64                 | -1%         | 136.04               | -35.3%      |
| 2022 | 169.24                                | 210.33               | 24%         | 147.11                  | -13%        | 114.53                 | -32%        | 85.84                | -49.3%      |

Source: Authors' calculations

**Table 3: Predicted Pension Cost for Different Levels of Inflation Indexation if All Retire at Age 60**

| Year | Actual Pension Cost (in 2016 Rs. Bns) | ik <sup>adj</sup> =1 | Error Level | ik <sup>adj</sup> =0.75 | Error Level | ik <sup>adj</sup> =0.5 | Error Level | ik <sup>adj</sup> =0 | Error Level |
|------|---------------------------------------|----------------------|-------------|-------------------------|-------------|------------------------|-------------|----------------------|-------------|
| 2016 | 171.90                                | 191.14               | 11%         | 198.12                  | 15%         | 194.81                 | 13%         | 188.27               | 9.5%        |
| 2017 | 169.95                                | 204.93               | 21%         | 193.64                  | 14%         | 188.95                 | 11%         | 179.75               | 5.8%        |
| 2018 | 175.06                                | 213.43               | 22%         | 203.10                  | 16%         | 199.15                 | 14%         | 191.34               | 9.3%        |
| 2019 | 196.38                                | 224.80               | 14%         | 210.81                  | 7%          | 208.32                 | 6%          | 203.38               | 3.6%        |
| 2020 | 212.70                                | 223.27               | 5%          | 210.94                  | -1%         | 207.47                 | -2%         | 200.64               | -5.7%       |
| 2021 | 210.16                                | 240.49               | 14%         | 237.64                  | 13%         | 230.86                 | 10%         | 217.73               | 3.6%        |
| 2022 | 169.24                                | 232.73               | 38%         | 222.72                  | 32%         | 204.01                 | 21%         | 169.39               | 0.1%        |

Source: Authors' calculations

Tables 2 and 3 present the actual and projected annual pension costs for the 2016-2022 period. Note that for the years 2016-2021, the model assuming all retirement takes place at the mandatory retirement age of 60 consistently overestimates pension costs as the

average wage at retirement is higher than if all employees retired at 55 years of age. (Keep in mind these estimates simply show the annual outlays for the cross section of pensioners rather than the total payments incurred over time for a single pensioner). The level of overestimation is offset when the inflation indexation is reduced.

The output closest to the actual data can be seen in Table 2 when  $ik^{adj}=1$  and all government employees are assumed to retire at age 55, with all error levels less than or equal to 5% except for the year 2022. The discrepancy in the model's output in 2022 can be explained by a historically high inflation rate of 46.4% recorded in Sri Lanka in 2022, as well as the inability of the model to account for sudden economic shocks (World Bank, 2023). For 2022, the projection closest to the data comes from the model assuming all government employees retire at age 60 and there is no inflation indexation at all.

Based on these results and given that 2022 cannot be considered to be a typical year, for projecting future pension costs, we use an inflation indexation of 1 and the age of retirement of the pensioners as 55. We interpret the full inflation and wage indexation to reflect the smoothed effects of ad-hoc modifications to pension payments periodically made by the government.

### **Baseline Scenario: Projection of Costs Under Current Policy and Expectations**

The baseline scenario of the projections simulates the level and trend of the pension burden under the current policy framework. We consider two versions here: one where pension benefits begin at the age of 55 for all civil servants and the other where benefits begin at age 60. The first is equivalent to assuming that all government employees retire at the minimum retirement age whereas the latter assumes that they all wait until the mandatory retirement age.

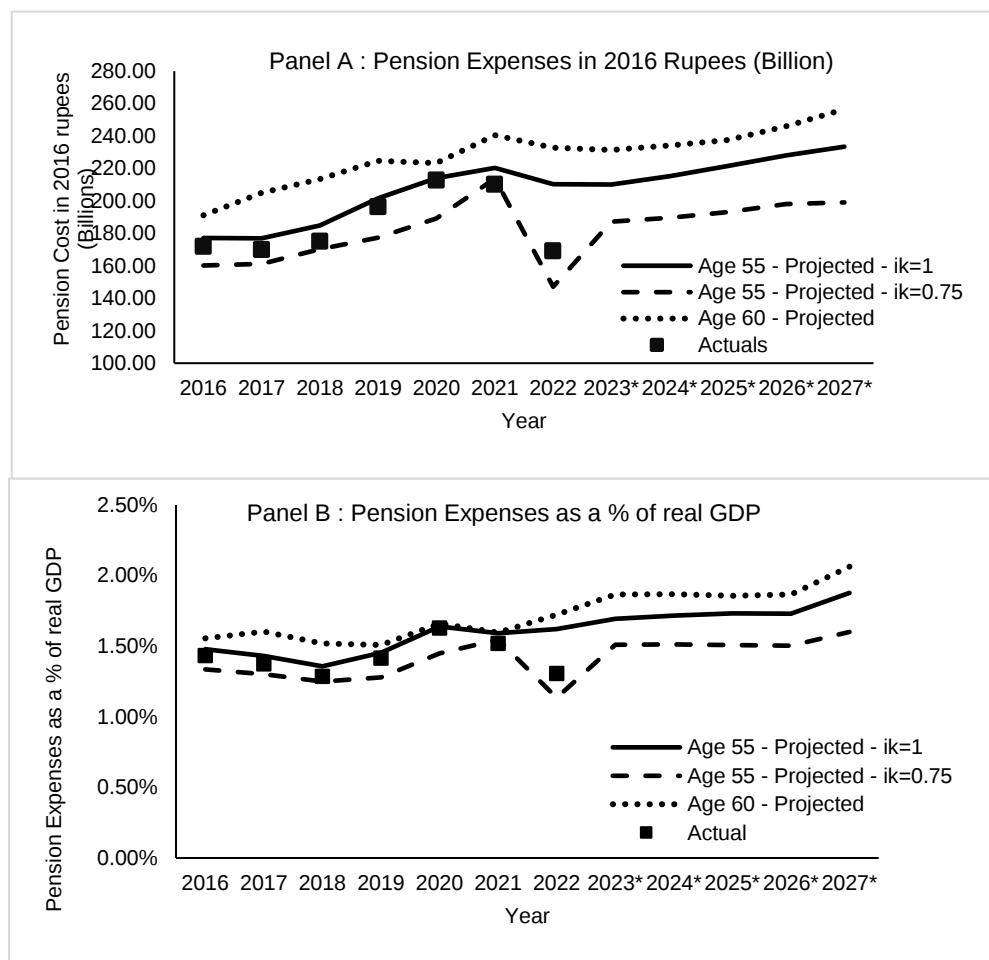
Our estimates show the expected rising trend in pension costs over time, which will put more strain on the pension system (Figure 2). Under the assumption that all pensioners retire at the age of minimum retirement age, 55, the annual pension expense is predicted to grow by 6% on average each year. If we instead assume that all pensioners retire at the mandatory retirement age of 60, as discussed earlier, all projected pension costs are higher than the actual data. This can be explained by the fact that, despite retirees having a shorter pensionable lifespan, pension costs in a given year are higher due to higher average wages at the point of retirement and higher replacement rates due to longer service duration.

We now go on to simulate pension expenses are different reform scenarios. In these simulations, we continue to assume that all civil servants retire at age 55.

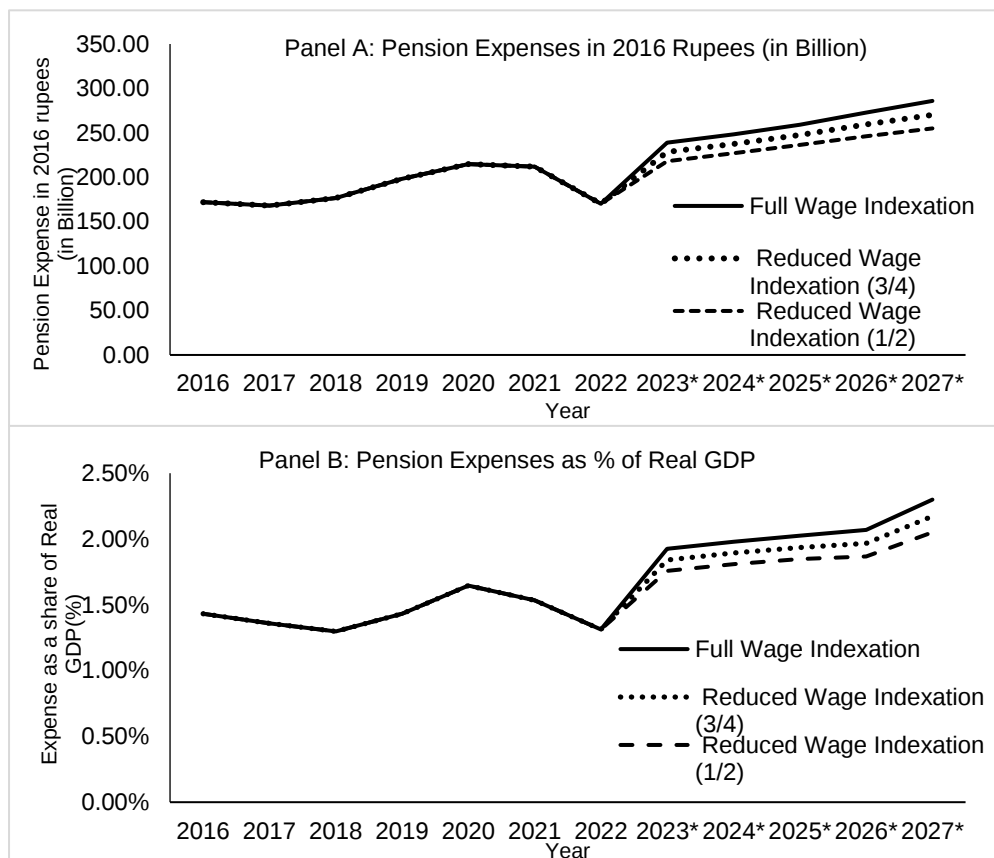
### Simulation 1: Reducing Wage Indexation

To determine how the extent of wage indexation (or the ad-hoc modifications to pension payments we capture through the wage indexation parameters) affects the pension expense, we explore two scenarios in which the scope of wage indexation was reduced by a quarter and by half to 0.75 and 0.5, respectively. We find that if the wage indexation rate comes down to 0.75 the total pension in 2023 would be LKR 198.28 billion in 2016 rupees, corresponding to 1.6% of GDP. If wage indexation is set to 0.5, the total pension cost in 2023 would be LKR 185.45 billion or 1.5% of GDP (Figure 3). On average, this corresponds to an annual reduction in expenditure between 5% and 6%. Though the annual pension cost continues to increase over time, it is clear that reducing the generosity of pension benefits can significantly reduce pressure on the system.

**Figure 2: Projected Pension Expenses Under the Baseline Scenarios**



Source: Authors' calculations

**Figure 3: Comparison of Projected Pension Expenses Under Reduced Wage Indexation**

Source: Authors' calculations

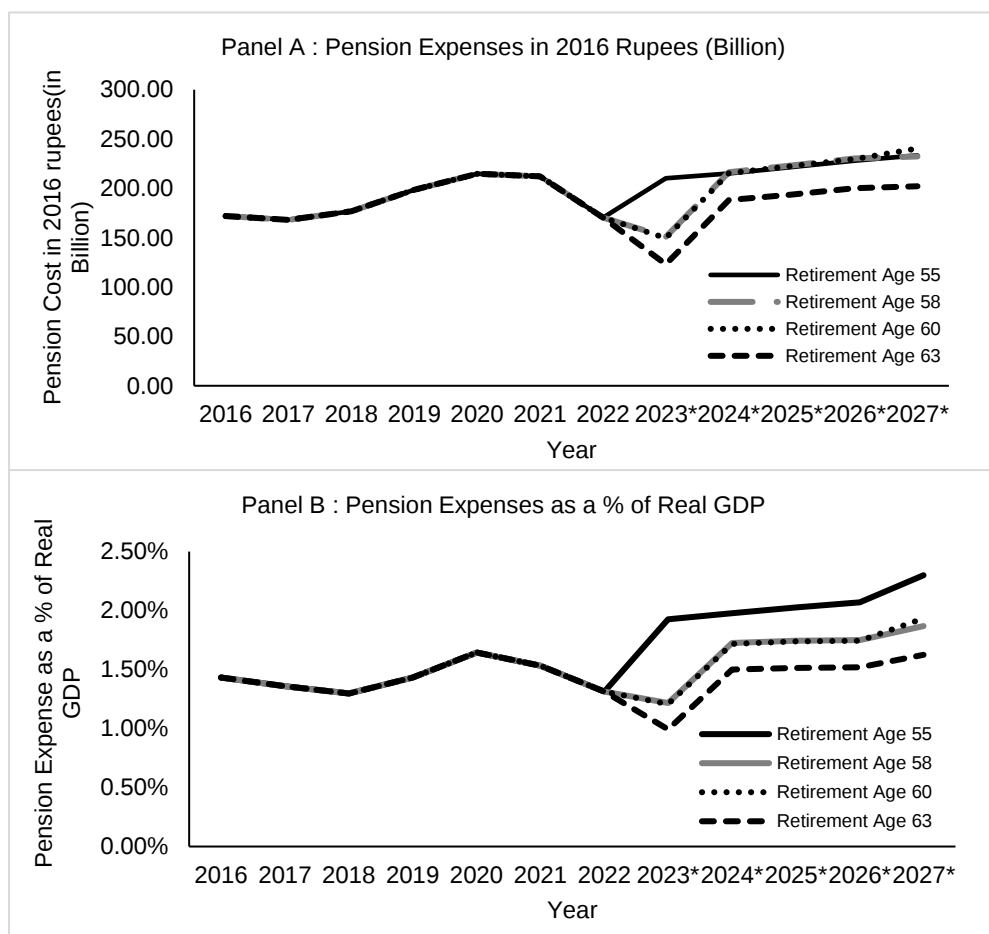
Note: Actual pension expenses in 2016 rupees are plotted for 2016-2022 and predicted expenses are plotted for 2023\*-2027\*.

### Simulation 2: Increasing Retirement Age

The retirement age is a critical feature of a pension system and has an impact on the whole workforce. As for longevity increases, it is recommended that the new retirement age be based on factors such as how long the existing pension system can pay future benefits to retirees and how long a person can work while remaining healthy (Department of Pension, 2020). Sri Lanka's statutory retirement age is now set at 55 years old, and the mandatory retirement age is 60 (after a short-lived reform to increase the mandatory retirement age to 65). Therefore, we next examine the impact of increasing the minimum retirement age on the costs of the PSPS.

We simulate the impact of increasing the minimum retirement from age 55 to age 58, 60, and age 63. The total pension costs in 2023 under the standard retirement age is LKR 210.10 billion while increasing the retirement age to 58, 60, and 63 can result in a 28%, 29%, and 41 % drop in the pension cost within a year. If the government raises the minimum retirement, total pension expenditures could be reduced by 5%, 6% and 19% on average over the next 5 years. As seen in Figure 4, while the drop in expenditure in 2023 is due to the absence of new entrants into the pension system, as the number of existing employees approaching the modified retirement age rises, the total cost of the pension system will begin to rise.

**Figure 4: Comparison of Projected Pension Expenses Under Different Minimum Retirement Ages**



Source: Authors' calculations

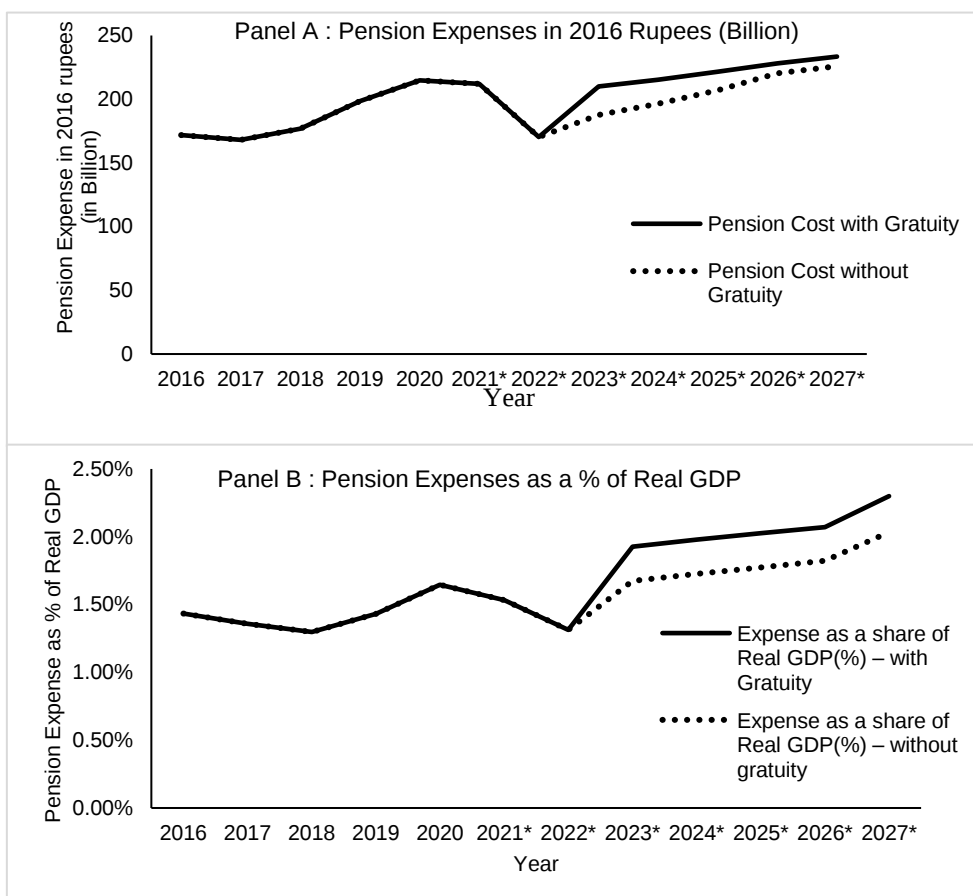
It should be kept in mind that while this paper focuses only on the implications of changing the retirement age on pension expenses, the reform would also have obvious repercussions on the wage bill of the government when employees take longer to retire.

Given that pension payments are lower than the wages received at the point of retirement, it is less expensive to pay pensioners than employees, which could (at least partially) explain the recent policy reversal of the government.

### Simulation 3: Temporarily Suspending Gratuity Payments

Next, we analyse the impact of removing the gratuity payment upon retirement. According to the existing rule, pensioners can obtain two years' worth of unreduced pension payments as a lump sum at the time of retirement, after which pensioners are paid a reduced pension payment (based on a reduced replacement rate) for the next 10 years (Department of Pension, 2020). While our baseline model assumes that all new pensioners opt for this lump sum payment, we now consider the impact of removing this option so that all pensioners receive only the pension payment computed on a single replacement rate for the entire duration of their retirement (Figure 5).

**Figure 5: Comparison of Pension Expenses with and without Gratuity Payments Upon Retirement**



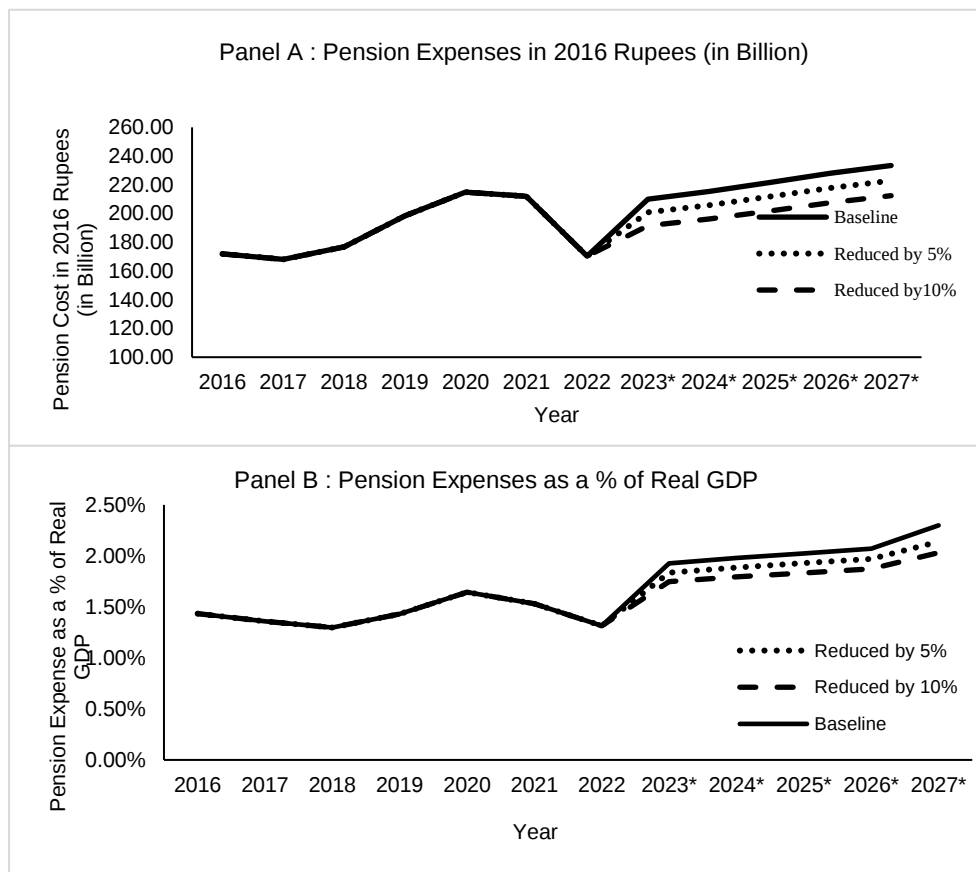
Source: Authors' calculations

Figure 5 shows that the pension cost in 2023 would fall from LKR 210.09 bn to LKR 187.58 upon removal of the gratuity payment option. Compared to the year 2022, if the government temporarily removes the gratuity payment option upon retirement, there will be an 11% reduction in pension expenses in 2023. The exercise suggests that the overall pension expenditure can be lowered by 7% annually for the projection period considered, on average, through the removal of the gratuity payments.

#### Simulation 4: Reducing the Replacement Rates

The replacement rate is a commonly used metric for determining the sufficiency of a pension payment as a source of post-retirement income (Park, 2012). Given that replacement rates of PSPS in Sri Lanka are among the highest in South Asia, we now analyse the impact on pension expenditures by reducing the replacement rate by 5% and 10%, first for all and then only for the new pensioners.

**Figure 6: Comparison of Pension Expenses Under Reduction of Replacement Rates for All Pensioners**



Source: Authors' calculations

Figure 6 suggests that by cutting replacement rates by 5% and 10% for all pensioners, the cost of pensions in 2023 will be reduced by 4.6% and 9.7%, respectively when compared to 2022. On average, the exercise reveals that overall pension expenditures may be reduced by 5% and 10% annually. On the other hand, if the replacement rate reduction is only done for the new pensioners entering the system, pension expenditures barely change from the baseline - just 0.46% and 0.49%, respectively for a 5% and 10% decrease in replacement rates.

Table 4 summarizes the estimated cost reductions compared to the baseline scenario for each of the policy simulations considered.

**Table 4: Estimated Change in Pension Expenses Under Different Reform Options**

| Year                  | Percentage change from the baseline scenario for a given year |       |                                       |        |        |                            |                                              |       |                                                   |        |
|-----------------------|---------------------------------------------------------------|-------|---------------------------------------|--------|--------|----------------------------|----------------------------------------------|-------|---------------------------------------------------|--------|
|                       | Reducing wage indexation                                      |       | Increasing the minimum retirement age |        |        | Removing gratuity payments | Reducing replacement rate for all pensioners |       | Reducing replacement rate for new pensioners only |        |
|                       | 0.75                                                          | 0.5   | 58                                    | 60     | 63     |                            | 5%                                           | 10%   | 5%                                                | 10%    |
| 2023*                 | -6.0%                                                         | -6.9% | -28.2%                                | -28.8% | -41.4% | -11%                       | -4.6%                                        | -9.7% | -0.01%                                            | -0.02% |
| 2024*                 | -5.3%                                                         | -6.2% | 0.6%                                  | 0.0%   | -12.6% | -9%                        | -4.7%                                        | -9.8% | 0.01%                                             | -0.02% |
| 2025*                 | -4.8%                                                         | -5.6% | 0.7%                                  | 0.4%   | -12.7% | -7%                        | -4.7%                                        | -9.9% | 0.01%                                             | -0.02% |
| 2026*                 | -4.7%                                                         | -5.4% | 1.1%                                  | 0.8%   | -12.2% | -3%                        | -4.7%                                        | -9.9% | 0.01%                                             | -0.02% |
| 2027*                 | -4.3%                                                         | -5.4% | -0.5%                                 | 3.0%   | -13.4% | -3%                        | -4.7%                                        | -9.9% | -2.31%                                            | -2.35% |
| Annual average change | -5.0%                                                         | -5.9% | -5.3%                                 | -4.9%  | -18.5% | -7%                        | -4.7%                                        | -9.8% | -0.5%                                             | -0.5%  |

Source: Authors' calculations

Given the importance of balancing financial and social sustainability, many studies have pointed out that having an effective and strategic set of policy responses in order to tackle the issues of population ageing is essential (Elgar, 2012; Gaminiratne, 2004; ILO, 2018; United Nations, 2017b). More specifically, it is highlighted that countries that have a higher life expectancy should adjust their system parameters, such as increasing the retirement age or changing indexation and accrual rates in the short term, while gradually increasing employee contribution rates to achieve integration of civil service and national pension systems in the long term (ILO, 2018; Palacios & Whitehouse, 2006). Accordingly, we simulate several policy reform options by adjusting the extent of wage indexation, retirement age, replacement rate and the payment of gratuities. Our results suggest that while pension spending is expected to increase by 6% annually over the next six years, increasing the minimum retirement age, temporarily removing the gratuity payment upon retirement and a reduction of replacement rates by around 10% for all pensioners significantly lower pension costs. While the reduction of replacement rates

only for the new pensioners does not appear to be a fiscally significant change, the reduction of the extent of wage indexation is also relatively less significant.

The removal of the gratuity lump sum payment and reduction in replacement rates are likely to be the least politically feasible options, given that Sri Lankan salaries in the public sector are relatively low compared to developed economies (Australia, New Zealand, Hong Kong, Kuwait, Japan, Thailand etc.) as well as other developing countries such as China, India, Malaysia, Philippines (ILO, 2016b). However, it should be noted that within the Sri Lankan income distribution, government pension recipients tend to be from the higher income groups (Shyama & de Silva, 2022). Indeed, in some countries, such as Japan, Australia, Greece, Hungary, Italy, and Mexico, pension reforms that altered replacement rates took into account the income distribution of their retirees, with lower reductions for low-income earners (Kim et al., 2021; OECD, 2013). However, in other countries, cuts have been made across the board with equal treatment to all. For example, the pension entitlement accrual rate in Austria is gradually being cut from 2% per year of contributions to 1.78%, and the number of years required to reach the maximum accrual rate has been raised in Belgium and in the Czech Republic and the United Kingdom, accruals at various earnings thresholds have been decreased (OECD, 2013).

Changing the retirement age is the most politically feasible option in Sri Lanka, as seen with the recent (but temporary) increase in the mandatory retirement age from 60 to 65 (Ministry of Public Administration, 2022). However, while raising the normal/minimum retirement age has been the most prevalent reform among OECD nations (OECD, 2013), Sri Lanka has yet to make this change. In fact, Sri Lanka continues to have the lowest minimum retirement age in South Asia with the exception of Afghanistan and Nepal, even though the life expectancy at age 60 in Sri Lanka is the highest in South Asia at 21 years (Asian Development Bank, 2019a; Central Bank of Sri Lanka, 2020a; Department of Pension, 2020).

While we find that reducing the extent of wage indexation is effective for reducing pension costs, given that pensions are not officially linked to current wages or inflation in Sri Lanka, what this recommendation boils down to is that modifications to pension payments should be carried out systematically and moderately, keeping both fiscal sustainability and the welfare of pensioners in mind. For instance, the introduction of revisions to pension circulars following increases in government salaries, mostly before the elections, is one of the key reasons for abrupt spikes in pension expenses (Department of Pension, 2020). Similar practices of discretionary increases by the government are observed in India, Pakistan and Thailand (OECD, 2018). However, systematic pension indexation is now practised in many countries: China and the Philippines have indexed pensions to a combination of price inflation and wage growth, pensions in Vietnam rise in tandem with the minimum salary, and pensions are linked to prices, wages, or

minimum wages or a combination of these factors in all of the OECD countries (OECD, 2018).

Despite the high cost incurred for pensions, Sri Lanka compares poorly with other countries in terms of pension coverage, even in other developing countries (United Nations, 2015). While countries in Europe and North America have pension coverage exceeding 90% of the population above the statutory pensionable age, developing countries in Latin America, North Africa, the Middle East, and sub-Saharan Africa all record higher rates of coverage than Sri Lanka (13%), with rates of 56%, 37%, 30%, and 17%, respectively (United Nations, 2015, 2017a). In combination with the fiscal constraints currently faced by the government as well as the demographic trends being experienced, it is imperative that the administration of the PSPS be revisited and reformed in line with the country's requirements, potentially shifting to a model of contributions in order to accommodate increases in coverage. This can be phased in by making DC schemes compulsory for new entrants into the workforce but optional for incumbent workers (e.g. Slovak Republic) or compulsory for workers under a certain age group and optional for those above it (e.g. Poland). While the Sri Lankan political environment has posed a challenge in implementing a new contributory pension system it was finally signed into law in 2023. The new National Contributory Pension Fund will be applicable to public service employees recruited after 2016. This new system is a significant step forward in ensuring the financial security of Sri Lankan retirees, but sound management and increased transparency and accountability are vital for its success.

## CONCLUSIONS

The Sri Lankan population is projected to age fast in the next few decades increasing pressure on old age income security systems, especially on pension systems that are fully funded by government revenues. This study aims to project the costs of the Sri Lankan PSPS, which is the largest fully state-funded retirement scheme in the country in order to predict the extent of the pension burden in the future and make policy recommendations to improve the sustainability of the pension scheme.

Our findings suggest that while expenditure on the pension scheme is estimated to increase in the next 5 years as expected, increasing the retirement age, temporarily removing the gratuity payment upon retirement, a reduction of replacement rates from all pensioners, and reduction in wage indexation significantly reduce costs. Though it is quantitatively significant, eliminating gratuity payments and reducing replacement rates will be relatively infeasible in the Sri Lankan context. A reduction in the extent of the wage indexation also results in relatively smaller savings for the government given that pensions are not systematically linked to wages in any case. As with any reform, trade-offs and synergies between policy ideas exist; increasing fiscal sustainability by reducing the generosity of the pension promise, for example, is likely to have negative

consequences for pension income adequacy. Accordingly, while pension reforms are inevitable for Sri Lanka in the near future, these reforms should be undertaken with due consideration to both fiscal and welfare aspects.

## ACKNOWLEDGEMENT

The authors gratefully acknowledge financial support from the University of Moratuwa SRC Grant (SRC/LT/2020/44).

## REFERENCES

- Asian Development Bank. (2015). ADB Social Protection Brief: Supporting Pension Reforms in India, 5(34).  
<https://www.adb.org/sites/default/files/publication/154074/india-pension-reforms.pdf>
- Asian Development Bank. (2019a). Aging Society Policies and Perspectives.  
[www.adbi.org](http://www.adbi.org)
- Asian Development Bank. (2019b). Growing Old Before Becoming Rich. Asian Development Bank. <https://doi.org/10.22617/TCS190612-2>
- Boileau, B., O'Brien, L., & Zaranko, B. (2022). Public spending, pay and pensions.  
<https://ifs.org.uk/sites/default/files/2022-10/Public-spending-pay-and-pensions-R219.pdf>
- Central Bank of Sri Lanka, (2005, 2011, 2012, 2013, 2014, 2015, 2016, 2019, 2020a, 2021, 2022). Annual Report. Colombo: Central Bank of Sri Lanka.
- Central Bank of Sri Lanka, (2020b) Economic and Social Statistics of Sri Lanka, Colombo: Central Bank of Sri Lanka.
- Department of Pension. (2020). Sri Lanka Pensions, Department of Pension, Sri Lanka.
- Elgar, E. (2012). Ageing, Economic Growth, and Old-Age Security in Asia (D. Park, S. H. Lee, A. Mason, & E. Elgar, Eds.). Edward Elgar Publishing Limited.
- ESCAP. (2023). Demographic Changes in Asia and Pacific: Sri Lanka.  
<https://www.population-trends-asiapacific.org/data/LKA>
- Gaminiratne, N. (2004). Population Ageing, Elderly Welfare, and Extending Retirement Cover: The Case Study of Sri Lanka. Overseas Development Institute, April, 104.

- Grimm, M., & Holzhausen, A. (2021). Allianz Pension Report Asia Special 2021 (Issue January).
- Hujo, K. (2014). Reforming Pensions in Developing and Transition Countries. Palgrave Macmillan UK.
- ILO. (2016a). Analysis of the Sri Lankan Social Protection Schemes in the Context of Social Protection Floor Objectives: A Rapid Assessment and Estimating the Costs of a Social Protection Floor in Sri Lanka. [www.ilo.org/publns](http://www.ilo.org/publns)
- ILO. (2016b). Wages in Asia and the Pacific and the Arab States. In International labor organization, 5(1).
- ILO. (2018). Social protection for older persons: Policy trends and statistics.
- Kim, C., & Bhardwaj, G. (2011). South Asia Pension Forum: Fostering Inclusive and Sustainable Pension Systems in the Region.
- Kim, D., Kangur, A., & Kalavrezou, N. (2021). Reforming the Greek Pension System. In IMF Working Papers 2021(188). <https://doi.org/10.5089/9781513588841.001>
- Medici, A. (2004). The Political Economy of Reform in Brazil's Civil Servant Pension Scheme. In Technical Note on Pension, 002(002).
- Ministry of Public Administration. (2022). The Gazette of the Democratic Socialist Republic of Sri Lanka. <https://www.newswire.lk/2022/12/06/new-gazette-on-compulsory-retirement-age-for-public-sector/>
- Mudugamuwa, I. (2023, March 1). Contributory pension fund for Govt. employees. Daily News. <http://archives1.dailynews.lk/2023/03/01/local/298426/contributory-pension-fund-govt-employees>
- OECD. (2007). Pensions at a Glance: Public Policies Across OECD Countries.
- OECD. (2013). Recent pension reforms and their distributional impact. In Pensions at a Glance 2013 OECD and G20 Indicators, 17–58. [https://doi.org/10.1787/pension\\_glance-2013-4-en](https://doi.org/10.1787/pension_glance-2013-4-en)
- OECD. (2016). OECD Pensions Outlook 2016 Highlights.
- OECD. (2018). Pensions in Asia/Pacific Ageing Asia must face its pension problems. 8.

- Padmakanthi, N. P. D., Jayaweera, R., Dharmadasa, C., & Gunatilake, M. M. (2021). A Review of Social Protection System in Sri Lanka (Issue February).
- Palacios, R., & Whitehouse, E. (2006). Civil-service pension schemes around the world. Social Protection Discussion Paper, 14796, 89.
- Park, D. (2012). Public pension systems in emerging Asia: Challenges and reform efforts, in IMF Conference on Designing fiscally sustainable and equitable pension systems in Asia in the post-crisis world. Tokyo, 9–10.
- Ponds, E., Severinson, C. and Yermo, J. (2011). OECD Working Papers on Finance, Insurance and Private Pensions No. 8 Funding in Public Sector Pension Plans: International Evidence. <https://doi.org/10.1787/5kgcfnm8rgmp-en>
- Rannan-Eliya, R.P. et al. (1998). Ageing and Pensions. Colombo: Institute of Policy Studies of Sri Lanka. <https://www.ips.lk/wp-content/uploads/2017/01/hpp-op5-Population-Ageing.pdf>
- Rusconi, R. & Pick, A. (2020). Civil Service Pension Reform in Developing Countries: Experiences and Lessons. OECD Development Policy Papers 33, OECD Publishing. <https://ideas.repec.org/p/oec/dcdaab/33-en.html>
- Shyama, C. and de Silva, T. (2022). Direct and Indirect Income Support and Their Determinants: Developing an Income Profile for Older Adults in Sri Lanka, Journal of Population and Social Studies, 30, 463–487.
- Treasury of Sri Lanka. (2023). Budget Estimates 2023. <https://www.treasury.gov.lk/api/file/20136e1a-c26c-47fc-b594-52c1c4df045a>
- United Nations. (2015). Income Security for Older Persons in Sri Lanka. Bangkok. <https://www.unescap.org/sites/default/files/SDD%20Working%20Paper%20Ageing%20Income%20Sri%20Lanka%20v2-5.pdf>
- United Nations. (2017a). Addressing the challenges of population ageing in Asia and the Pacific. Bangkok. <https://doi.org/10.18356/32056b9e-en>
- United Nations (2017b) Economic Inequalities in Old Age. [https://www.un.org/development/desa/ageing/wp-content/uploads/sites/24/2016/08/Briefing-Paper\\_Economic-Inequalities\\_Final\\_Rev26July2017.pdf](https://www.un.org/development/desa/ageing/wp-content/uploads/sites/24/2016/08/Briefing-Paper_Economic-Inequalities_Final_Rev26July2017.pdf)

Whitehouse, E. (2016). Pensions for Public-Sector Employees, Pensions for Public-Sector Employees. World Bank, Washington, DC.

<https://doi.org/10.1596/25286>

World Bank. (2005). South Asia: Pension Schemes for the Formal Sector, Emerging Challenges and Opportunities for Reform. Washington, DC.

World Bank. (2006). Sri Lanka - Selected Public Expenditure Issues, 2003/2004, World Bank Discussion Paper Series [Preprint], (36630).

<https://openknowledge.worldbank.org/server/api/core/bitstreams/2d709ce2-908e-5bf4-9d21-e8831947b026/content>

World Bank. (2008). Sri Lanka addressing the needs of an ageing population.

<https://openknowledge.worldbank.org/server/api/core/bitstreams/2a22a69a-b7da-5458-9c2b-90d4ec9f3c0f/content>

World Bank. (2023). Sri Lanka Development Update.

[www.worldbank.org/en/country/srilanka](http://www.worldbank.org/en/country/srilanka)