

Forecasting Lump Sum Compensation and Monthly Pension Payments made by the Government

Introduction

The implementation of the Maldives Pension Act in 2009 established a defined contribution retirement pension scheme for the public sector in Maldives. This led to the abolishment of previous pension schemes conducted by the government such as the 20/40/60 Pension Scheme and the Government Provident Fund. However, various government institutions are carrying out several pension schemes alongside the Maldives Retirement Pension Scheme, creating a “double coverage” issue.

It is noteworthy that these schemes are defined benefit schemes, meaning that they are not dependent on investment returns but are calculated based on a predetermined formula. Moreover, they are funded entirely by the government. This double coverage in the pension scheme contributes to inequity for public sector employees, as well as causing a huge financial burden to the government in providing for these unfunded schemes.

These unfunded pension schemes provide a lump sum compensation upon retirement and an additional monthly pension benefit for the rest of their lives.¹ In 2017 alone, MVR 189 million was spent by the government on these schemes. This paper aims to come up with a baseline forecast of the government expenditure for these unfunded pension schemes from 2019 until 2060.

Methodology and Results

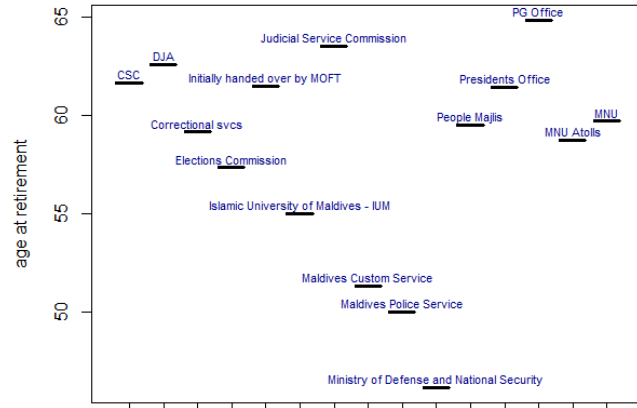
Using data provided by Maldives Pension Administration Office on government employees who have retired, calculations have been done to estimate the average retirement age. A simple analysis on the average retirement age by year revealed an unusually high retirement age in 2009 (Figure 1). This reflects the high number of long-serving government employees who retired that year due to the implementation of the Maldives Pension Act. Hence, for our analysis, only observations pertaining to the period after 2009 have been considered.

¹ Some institutions also give a two-year salary, of which limited information was available at the time of writing this paper. Hence, this has not been taken into account when conducting the forecasts.

Figure 1: Retirement age by year, 2003-2018



Figure 2: Retirement age by institution, 2010-2018



Next, the data was analysed to see if there was a specific trend in the retirement age across various institutions (Figure 2). It was observed that employees at Maldives Customs Service (MCS), Maldives Police Service (MPS) and Maldives National Defense Force (MNDF)² have a significantly lower average age at retirement than those at other institutions.

This could relate to the fact that these institutions have more generous retirement schemes than the civil service; it could also be due to those employed in these institutions needing to be more physically able. Nevertheless, based on these analyses, the following for the average retirement age have been assumed:³

- MPS, MCS: 50.47 years
- MNDF: 46.16 years
- All others: 61.63 years

Next, this information was used to estimate the government expenditure on lump-sum and monthly compensation for the retired. For this, we used data on those currently enrolled in the Maldives Retirement Pension Scheme. Given the average retirement ages calculated above, the retirement date for each individual was able to be forecasted, and hence, their total service duration was calculated.⁴ Further, we used forecasts made on the life expectancy for the

² All staff at the Ministry of Defense and National Security have been assumed to be staff of MNDF. This assumption is further explained under “Assumptions and Notes”.

³ It was also noted at this stage that the only institutions with lower-than-average retirement ages were uniform bodies that have established generous retirement schemes under their regulations. The only exception seemed to be Maldives Correctional Service. We looked at the seventeen individuals who had retired from this institution over the period 2011-2017; we found no indicative trend on their age of retirement.

⁴ Using this method, the expected retirement date of some individuals were estimated to fall before 2019. For these individuals, we arbitrarily added 5 years (and kept adding 5 more years, if required) so that their retirement age would fall after 2018. This was chosen as a more realistic approach than to assume that all these individuals would retire in 2019 en masse.

Maldivian population to estimate the year of death of every individual for the period 2019-2060.⁵ Then, using the formulas described in Appendix 2, the lump sum and monthly pension payable by the government was calculated.

We then used a separate dataset containing information on those currently retired and receiving monthly pension payouts from the unfunded government scheme. Similarly, the year of death for these individuals were estimated as well, and the annual sum for the monthly payouts was calculated for this group of people. Finally, the payouts for these two groups of people—those already retired, and those still in the workforce—were added to come up with the forecast for the period 2019-2060 for the pension payouts under the unfunded government schemes (Figure 3). Visual representations by sector are provided in Appendix 1.

Figure 3: Actuals and forecast of lump-sum and monthly benefit expenditure by the government from unfunded pension schemes, 2011-2060 (millions of rufiyaa)

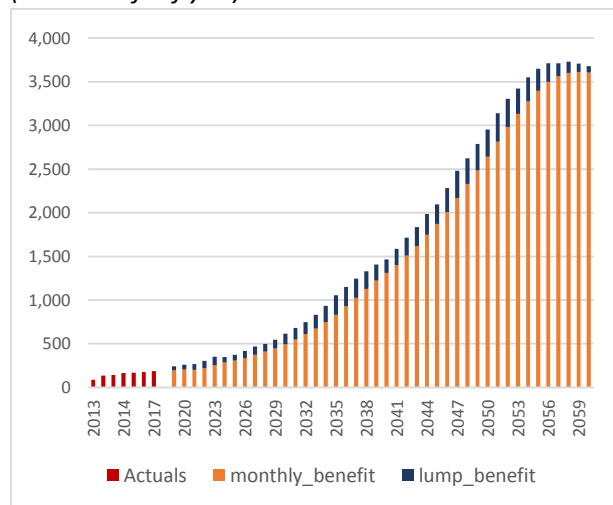
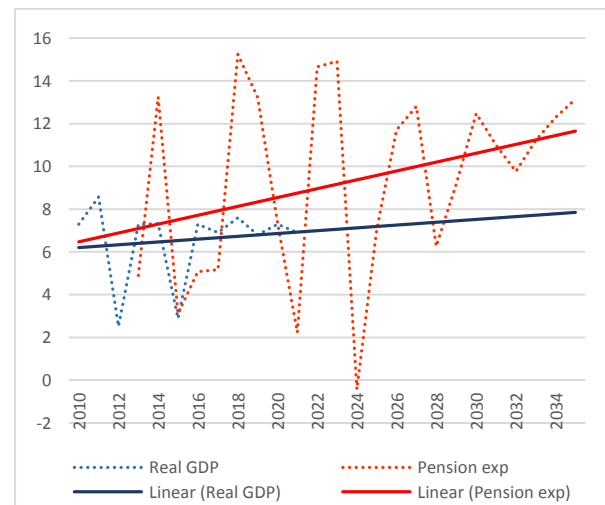


Figure 4: Comparison of GDP growth and growth in pension expenditure, 2010-2035 (growth in annual percentage change)



In Figure 3, it must be noted that the deceleration in the expenditure growth after around 2050 is due to one of the assumptions that the unfunded schemes do not apply for any newly joined employees. Given that it is not realistic to assume this, we can deduce that the expenditure on unfunded pension schemes will continue to grow at an accelerating rate even after 2050.

In Figure 4, we compare the growth of pension expenditure with GDP growth, one of the main economic benchmarks. It can be seen that although the growth in pension expenditure is volatile, it seems to be growing at around 9%, a rate much higher than the GDP growth rate. This implies that this expenditure can become fiscally unsustainable in the near future.

As per the forecasts, the author additionally believes that these are very conservative given the lax assumptions used. Since this study assumes that every employee will continue working at their respective place of employment, one important implication which the model fails to take

⁵ National Bureau of Statistics (2018). *Maldives Population Projections 2014-2054: Assumptions and Results Analysis*.

into account is the double pension that may be received by a person who serves in multiple institutions. For instance, if a person serves in MNDF for 20 years, and then joins the civil service, he will be receiving pension payments from both institutions.⁶

Moreover, in this study, individuals' previous places of employment have been disregarded altogether, and their service period has been considered to have begun the day they joined their current institution.⁷ This implies that, in the short term, forecasts for monthly pension payouts are likely to be underestimated due to the underestimation of service periods, especially for older employees (who will retire sooner). In reality, monthly payouts (particularly in the civil service sector) are likely to reflect the service period of an individual across various institutions throughout his working life.

Summary Findings

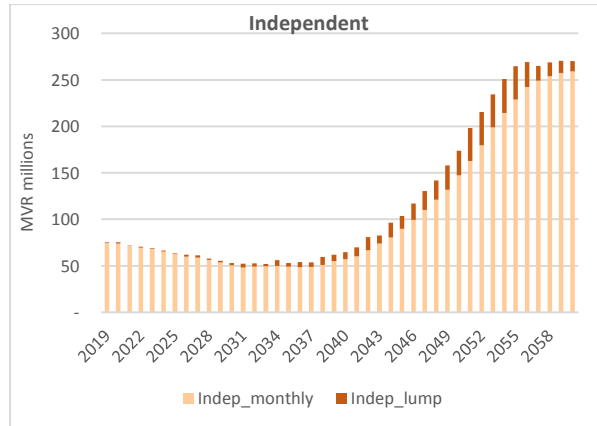
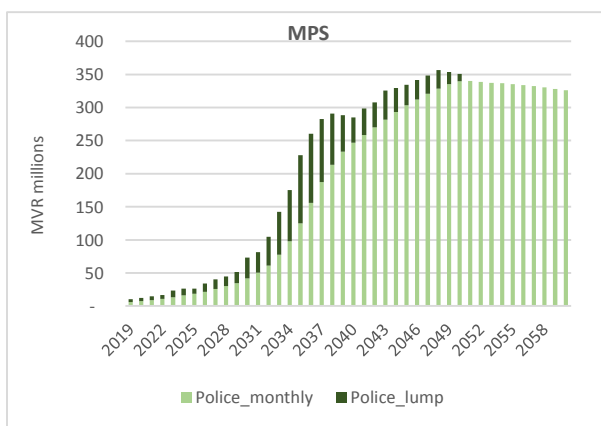
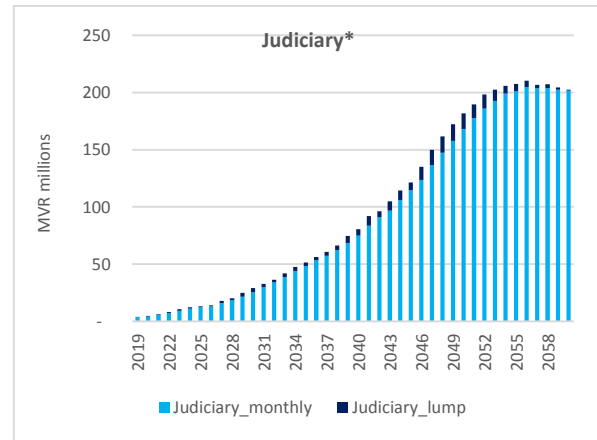
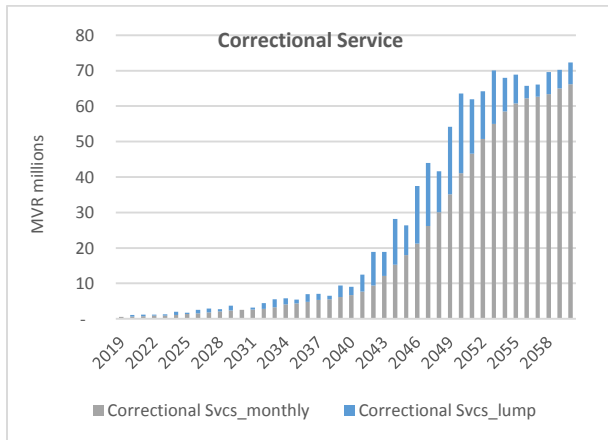
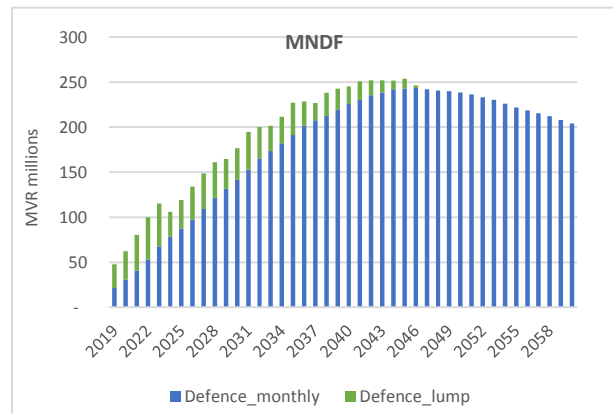
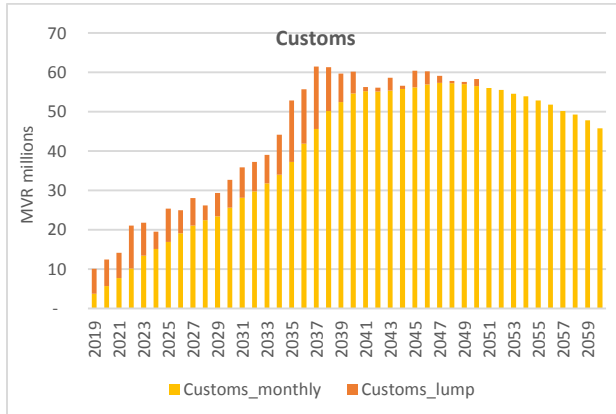
- Forecasted pension payouts are estimated to grow at around 9% until 2040. Comparing this with the average GDP growth of 6%, we find that the pension payouts are growing at a rate far exceeding this. This leads us to believe that *expenditure on unfunded pension schemes is on a trajectory that is fiscally unsustainable*.
- It must be noted that this paper uses quite conservative parameters and assumptions to make pension estimates. Hence, it is likely that these pension benefits may grow at a rate much higher than 9% in the coming years.
- One of the main objectives of the pension system reform in 2009 was to introduce a sustainable form of pension financing. Given that the continuation of unfunded pension schemes by the government is counterproductive to this aim, it is crucial that the government take immediate steps to discontinue such unfunded schemes.
- Moreover, it is imperative that the government act promptly *to prevent this scheme from applying to any new government employees*. This is so that the estimated government expenditure may not grow beyond what is depicted in Figure 3.
- Another aspect to highlight with regard to unfunded pension schemes is that currently, the government is indirectly paying employee pensions under similar schemes for loss-making state-owned enterprises (SOEs). Hence, this paper does not consider the true extent of government commitments in terms of unfunded pension payouts as SOE schemes have not been captured.

⁶ The latter does not require a minimum period of service to be eligible for pension payouts whereas MNDF requires a minimum of 20 years of service. See Appendix 2 for full details.

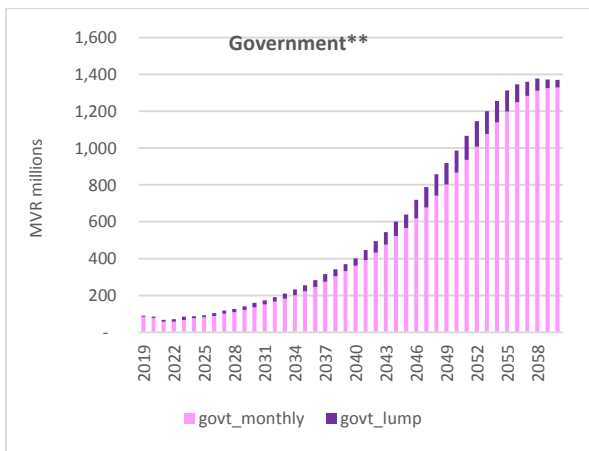
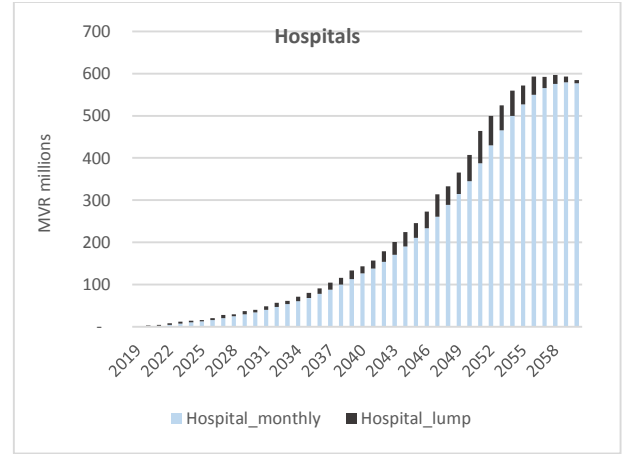
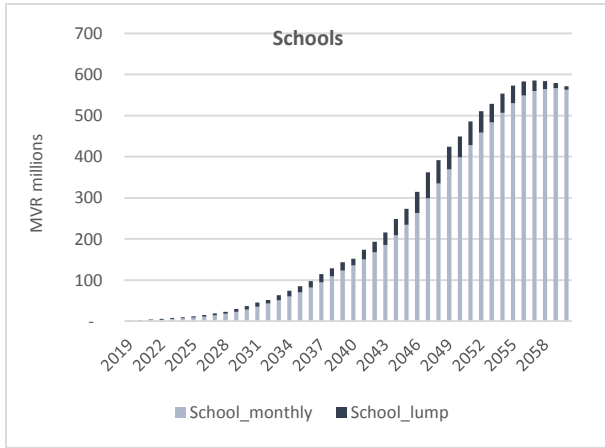
⁷ This is because a comprehensive dataset on each individual's previous places of employment was not available for this study, and hence, the dataset used to create the forecasts are limited to information on each individual's current place of employment.

Appendix 1: Graphs by Sector

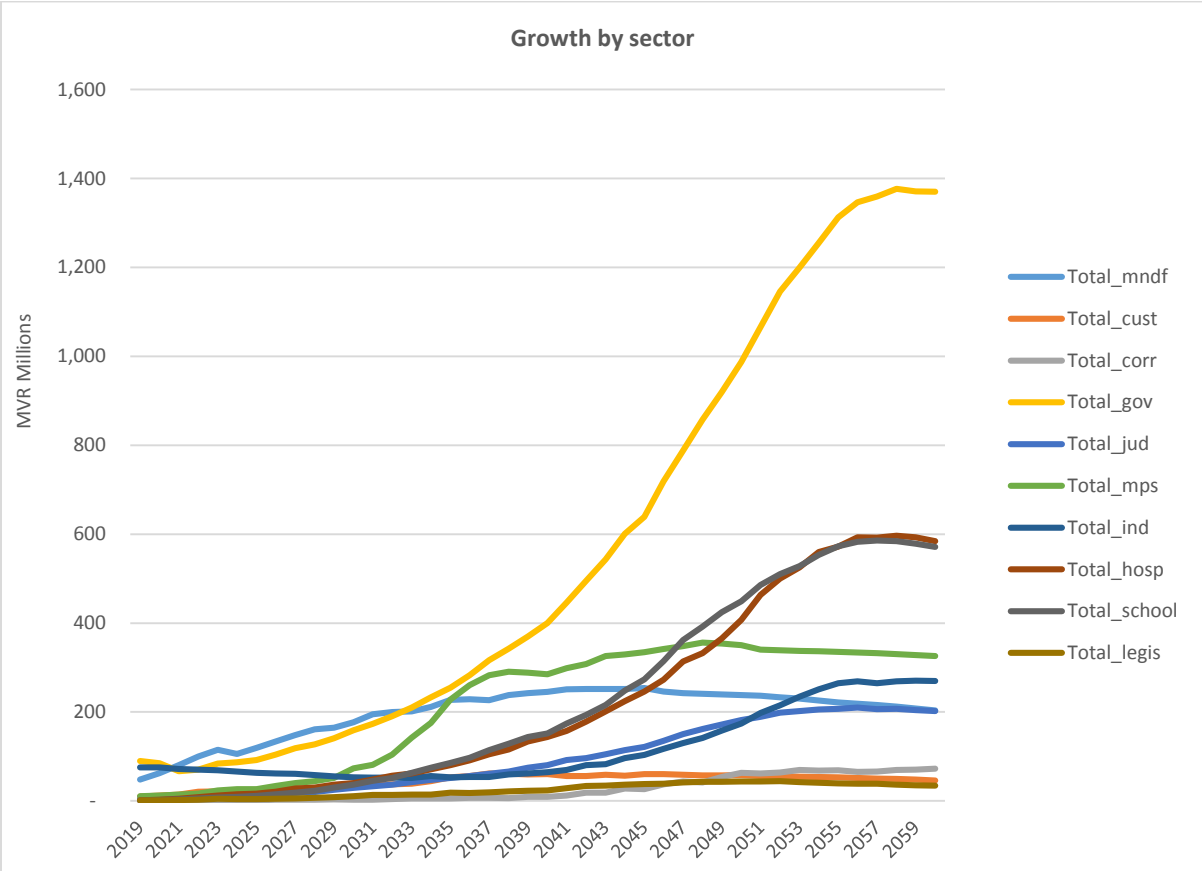
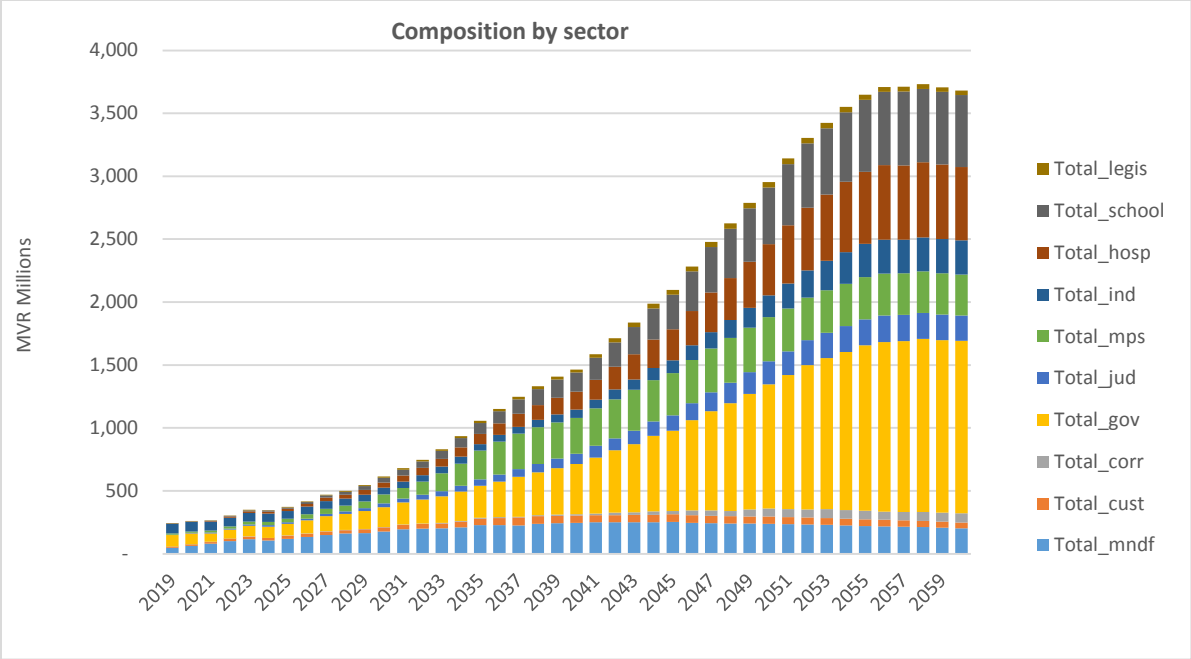
A visual representation of various sectors are provided below. For certain sectors such as for MCS, MPS and MNDF, it can be observed that the “peak” of the baseline forecast appears much sooner—around 2040—as opposed to the main model, where the peak occurs around mid-2050. This reflects the estimated lower retirement ages for these institutions combined with the assumption that no new employee is eligible for this pension scheme. It is important to note that each graph will continue to grow, most likely at an increasing rate, as long as the unfunded schemes are in place.



*Judiciary includes all the courts and Department of Judicial Administration.



**Government here only includes all government offices. It excludes MCS, MNDF, MPS, Maldives Correctional Service, institutions in the judiciary, independent institutions, hospitals, schools and the People’s Majlis.



Appendix 2: Formulas

Institution	Lump Sum Allowance	Monthly Pension
Civil Service	$salary \times A \times \frac{service\ period}{65}$ <p style="text-align: center;"><i>x age at retirement</i></p> <p>Where A is 1/3 of salary if less than 30 years of service, and ½ if service is greater than 30</p>	<p>Salary x A/40</p> <p>A is service period. A gets adjusted if the individual has opted in for the 20/40/60 pension scheme.</p>
<ul style="list-style-type: none"> - Prosecutor General's Office - Judges in various courts 	Same as Civil Service	<p>Salary x A/40</p> <p>A is service period. Living allowance is added to the sum.⁸</p>
National Integrity Commission	$salary \times A \times \frac{service\ period}{65}$ <p style="text-align: center;"><i>x age at retirement</i></p> <p>Where A is 1/3 of salary if less than 30 years of service, and 1 if service is greater than 30</p>	Same as Civil Service
Maldives Customs Service	$salary \times service\ period$ <p>(Min service period 20 years; Max 40)</p>	$salary \times \frac{2.5 \times service\ period}{100}$ <p>(Min service period 20 years; Max 40)</p>
<ul style="list-style-type: none"> - Maldives Police Service - MNDF - Maldives Correctional Service 	$salary \times service\ period$ <p>(Min service period 20 years; Max 30)</p>	$salary \times \frac{2.5 \times service\ period}{100}$ <p>(Min service period 20 years; Max 30)</p>
Maldives Inland Revenue Authority ⁹	$salary \times service\ period$ <p>(Min service period 20 years; Max 40 – No min period for CG and DCG)</p>	<p>Salary</p> <p>(Min service period years 20)</p> <p>For CG, DCG: Salary x 1/3, if <5 year term. Salary x 2/3, if 5-10 year term. Salary, if more than 10 years</p>
All other institutions	Same as Civil Service	Same as Civil Service

⁸ The Prosecutor General, Deputy Prosecutor General and judges receive a living allowance of MVR 15,000 per month. Remaining staff at the Prosecutor General's Office receive MVR 3,000 per month as living allowance. These have been taken into account for this study.

⁹ The adjustments for the Commissioner General of Taxation and the Deputy Commissioner have not been taken into account for this study.

Assumptions and Notes

- Government's expenditure on two-year salary has been ignored due to limited availability of information. Hence, we have just assumed that the government only spends on a lump-sum allowance, and the monthly benefit from thereon.
- Nobody has opted in for the 20/40/60 scheme.
- Everybody who retires receives the lump sum compensation (some regulations state that those retire voluntarily do not receive the lump sum compensation).
- Basic salary grows at a rate of 2% per annum.
- No employees change their jobs i.e. every employee continues to work at their respective institutions.
- Individuals' previous places of employment have been disregarded due to lack of comprehensive information. Hence, it is likely that individuals' service period have been underestimated, especially in the first few years, with this effect waning overtime.
- The unfunded pension schemes do not apply for newly joined employees in the government sector.
- The following government institutions and entities are not included in this analysis: Maldives Monetary Authority, Maldives Pension Administration Office, Capital Market Development Authority, all Project Management Units in government offices.¹⁰
- All staff working at the Ministry of Defense and National Security have been considered to be staff at the Maldives National Defense Force, due to data limitations required to make this distinction.¹¹

¹⁰ For data cleaning purposes, a handful of individuals with a basic salary of over MVR 90,000 were removed. Similarly, individuals with data inconsistencies were also removed.

¹¹ Cross-validating with the information available on the government budget, we were able to ascertain that there are about 50 civil servant staff at the Ministry of Defense and National Security, and about 3400 MNDF staff. Hence, our assumption that all staff at the Ministry are staff of MNDF is justified.