

The Government of the Hong Kong Special
Administrative Region

**Final Report on Consultancy Study on
Financial Implications on Mandatory
Provident Fund and Civil Service Provident
Fund Expenditures**

Year 2015

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Section 1: Introduction

1.1 Background

- 1.1.1 The Civil Service Bureau (“CSB”) of the Government of the Hong Kong Special Administrative Region (“Government”) released a consultation paper titled “Extension of the Service of Civil Servants” (the “Consultation Paper”) on 3 April 2014, proposing a framework of flexible retirement and employment initiatives for extending the service of civil servants beyond retirement age. One of the proposed initiatives is adopting a higher Normal Retirement Age (“NRA”) for civil service new recruits, i.e., from age 60 to age 65 for civilian officers; and age 55 or 57 to age 57 for disciplined services officers, with the possibility to extend to age 60 subject to annual suitability assessment.
- 1.1.2 Towers Watson Hong Kong Limited (“Towers Watson”) has been appointed by CSB to conduct a consultancy study to perform an actuarial analysis on the financial implications on Mandatory Provident Fund (“MPF”) and Civil Service Provident Fund (“CSPF”) expenditures if the NRA of new recruits is extended as proposed in the Consultation Paper, and to propose refinements to the design of the CSPF Scheme based on the requirements discussed with and set out by CSB.

1.2 Scope of Study

The scope of this study is to:

- Assess the projected Government’s expenditures in respect of the civil servants covered by the CSPF and MPF Schemes, under the current CSPF Scheme design and the current NRA.
- Assess the projected Government’s expenditures in respect of the civil servants covered by the CSPF and MPF Schemes, under the current CSPF Scheme design and the proposed NRA as set out in the Consultation Paper.
- Based on the requirements discussed with and set out by CSB, propose a refinement to the CSPF Scheme.
- Assess the projected Government’s expenditures in respect of the civil servants covered by the CSPF and MPF Schemes, under the proposed refinement of the CSPF Scheme and the proposed NRA as set out in the Consultation Paper.

1.3 Limitations of Reliance

- 1.3.1 This report is provided subject to the terms as set out in our agreement dated 27 June 2014 (the “Agreement”) with CSB, and any accompanying or referenced terms and conditions.
- 1.3.2 This report is intended only for sole use of CSB as Towers Watson’s client, and is only for the purposes described by CSB. This report should not be used for any other purposes nor distributed to or relied upon by any third party without the written consent of Towers Watson. Towers Watson does not accept any responsibility for any consequences should any third party rely on or act upon this report.

Section 2: Membership Data

2.1 Membership Data

This study has been conducted based on the membership data of serving civil servants under the Old Pension Scheme (“OPS”), New Pension Scheme (“NPS”), CSPF and MPF Schemes as at 30 April 2014, provided by CSB. There were 162,756 serving civil servants with an average basic monthly salary of HK\$33,992 covered in this study.

2.2 Data Exclusions

For the purposes of this study, we have excluded Independent Commission Against Corruption (“ICAC”) officers, judges and judicial officers and officers working in Hospital Authority, as well as those who are under pay scales and ranks with small workforce size. These data exclusions are not expected to have a material impact on the projection results of this study.

2.3 Reliance on Data

Our study is based on the membership data as at 30 April 2014 provided to us by CSB and takes no account of subsequent developments after that date. In preparing this study, we have relied upon the membership data provided to us as being complete and accurate. Although we have checked the data for reasonableness as appropriate based on the purposes of the study, an audit of the data provided was not performed.

Section 3: Actuarial Model

3.1 Introduction to Actuarial Model

In order to assess the financial implications of the Government's expenditures on the CSPF and MPF Schemes, we have developed an actuarial model that consists of three components, namely the headcount projection, the salary projection and the Government expenditures projection. The general methodology adopted in our model has been discussed with and agreed by CSB.

The actuarial assumptions used in this study are set out in Appendix A.

3.2 Details of Actuarial Model

3.2.1 Headcount Projection

We start with the current workforce and project it on a year-on-year basis based on the demographic assumptions as set out in Appendix A and the linkages of career progression (i.e. "Career Ladders"), as discussed with and agreed by CSB.

Civil servants are expected to leave the Government when they reach their NRA. The vacancy will be filled by a civil servant at the rank immediately below it within the same Career Ladder. Eventually, there will be vacancies at the lowest rank and the vacancies will be filled by new recruits.

3.2.2 Salary Projection

The salary of a civil servant is assumed to increase according to the "point" progression along the applicable pay scale, subject to annual pay adjustments as set out in Appendix A. The pay point will be capped at the maximum point of the respective rank unless the civil servant is promoted.

3.2.3 Government Expenditures Projection

The total annual Government expenditures on the CSPF and MPF Schemes is the sum of individual annual contributions by the Government for each civil servant calculated based on his or her individual profile.

3.3 Projection Period

3.3.1 Our projection is conducted on a year-on-year basis over a projection period of 80 years, from year 2014 to year 2094 ("Projection Period").

3.3.2 Rationale of Projection Period

The current workforce of serving civil servants consists of the members of the CSPF and MPF Schemes who joined the Government on or after 1 June 2000, as well as the members of the OPS and NPS who joined before that date.

The first half of the Projection Period (i.e. from year 2014 to 2054) allows sufficient time for all of the members of the OPS and NPS to retire, and for them to be replaced by new recruits who will join the CSPF and MPF Schemes. By the end of the first 40 years, it is expected that the CSPF and MPF Schemes will be the two remaining retirement schemes provided by the Government to civil servants. Hence, the second half of the Projection Period (i.e. from year 2055 to 2094) enables us to study the long-term financial implications without interference of the OPS or NPS, which serves the purposes of this study.

3.4 Annual Contribution Rate

For each year over the Projection Period, we determine the “Annual Contribution Rate”, which is the total annual Government’s contributions for the CSPF and MPF Schemes, divided by the total annual basic salaries of the civil servants covered by the CSPF and MPF Schemes.

3.5 Average Contribution Rate

We determine the “Average Contribution Rate”, which is the average of the “Annual Contribution Rates” over the second half of the Projection Period from year 2055 to 2094.

The Average Contribution Rate is used to compare the Government’s expenditures between different scenarios of NRA and designs of the CSPF Scheme for a period that is long enough to smooth out short-term fluctuations, and it is a parameter used in refining the designs of the CSPF Scheme.

3.6 Special Arrangements on Extension of NRA

As agreed with CSB, our actuarial model does not take into account the proposed special arrangements, i.e. a phased approach in introducing a higher normal retirement age, flexibility for Heads of Grade or Heads of Department to further employ officers beyond retirement age, or introduction of a new “Post-retirement Service Contract Scheme”, which are mentioned in the Consultation Paper.

3.7 Limitations of Analysis

The analysis contained in this report involves actuarial calculations based on assumptions about future events. The assumptions made in this study about future financial and demographic conditions are not intended to imply, nor should they be interpreted as conveying, any form of predictions, guarantees or assurance by Towers Watson. Future events and actual experience may vary from the assumptions used, and therefore the actual outcome in the future may deviate from those indicated in this report. While we believe the assumptions used in this study serve as a reasonable basis for the purposes of this study, the Government must be aware of the uncertainties and potential risks involved in any course of action.

Section 4: Financial Implications on Extension of NRA

- 4.1 Using the actuarial model and actuarial assumptions adopted for this study, we have projected the future expenditures of the Government in respect of the CSPF and MPF Schemes.
- 4.2 We have firstly conducted the projections to study the Government's expenditures on CSPF / MPF contributions under the following two scenarios of NRA if the current contribution scale of the CSPF Scheme ("Current Scale") and the Special Disciplined Services Contribution ("SDSC") for disciplined services officers of 2.5% remain unchanged:
- **Scenario 1:** Based on the Current Scale and the current NRA
 - **Scenario 2:** Based on the Current Scale and the proposed NRA

As a summary, civil servants are assumed to retire at the following NRA:

	For Serving Civil Servants		For New Recruits	
	OPS	NPS, CSPF or MPF	Under current NRA (Scenario 1)	Under proposed NRA (Scenario 2)
Civilian Officers	55	60	60	65
Disciplined Services Officers	55	55 or 57 (depending on rank)	55 or 57 (depending on rank)	60

- 4.3 The following table summarises the Average Contribution Rates (i.e. the averages of the Annual Contribution Rates over the second half of the Projection Period) under Scenarios 1 and 2:

	NRA of New Recruits	Average Contribution Rate
Scenario 1	Current	18.0%
Scenario 2	Proposed	19.2%

If there is no extension of NRA (i.e. Scenario 1), the Average Contribution Rate is projected to be 18.0%. With the extension of NRA, the Average Contribution Rate is projected to increase from 18.0% to 19.2%. The increase in contribution rates is in line with expectation as longer service with the Government means that civil servants could be entitled to a longer period of higher contribution rates under the Current Scale, which have progressive contribution rates depending on years of service.

The graphical illustrations of the Government's projected Annual Contribution Rates and CSPF / MPF contribution amounts over the Projection Period under Scenarios 1 and 2 are presented in Appendix B and Appendix C respectively, and the detailed projection results of the Government's CSPF / MPF contributions under Scenarios 1 and 2 are presented in Appendix D.

Section 5: Refinement of CSPF Scheme

5.1 Criteria for Refinements

- 5.1.1 As the Average Contribution Rate increases when the NRA of civil servants is extended, the Government wishes to consider refinements which could bring the Average Contribution Rate back to a level close to that before such extension. As instructed by CSB, the financial objective of refining the Current Scale is to maintain the Average Contribution Rate at 18.0% (i.e. the level before the extension of NRA as shown under Scenario 1 in Section 4.3).
- 5.1.2 Under the current NRA, the SDSC of 2.5% is provided to the disciplined services officers due to their shorter career life compared with that of civilian officers. With the extension of NRA, the new recruits of civilian and disciplined services officers are assumed to retire at age 65 and age 60 respectively. As the difference in the retirement ages between the new recruits of civilian officers and disciplined services officers will remain at five years, it is appropriate to maintain the SDSC for disciplined services new recruits at the existing level of 2.5%.
- 5.1.3 Under the Current Scale, the contribution rates are progressive based on years of service at the rates of 5%, 15%, 17%, 20%, 22% and 25%. Based on our discussions with CSB, a few refinements of the CSPF Scheme have been studied by maintaining the same progressive contribution rates (i.e. 5%, 15%, 17%, 20%, 22% and 25%) but lengthening the number of years required for jumping to the next contribution rate.
- 5.1.4 Given the NRA is extended by five years, it is reasonable to have a target extension period of five years for the sum of each of the lengthened periods required for jumping to the next contribution rate.
- 5.1.5 It takes three years (which is the common probation period) to jump from 5% to 15% of contribution rate under the Current Scale. Given that the common probation period will remain unchanged after the extension of NRA, it is reasonable to maintain the jump in contribution rate from 5% to 15% upon completion of three years of service. In other words, the period is not lengthened for the first contribution rate jump from 5% to 15%.

5.2 Refined Scale

- 5.2.1 Under the Current Scale, it takes 12 years to jump from 15% to 17%, 5 years from 17% to 20%, 5 years from 20% to 22%, and then 5 years from 22% to 25%. We have tested a set of refinement scenarios by lengthening the number of years for one of the contribution rate jumps to 17%, 20%, 22% or 25% by two years and each of the other jumps by one year, a total of 5 years. The resulted Average Contribution Rates are all expected to be over the target rate of 18.0%.
- 5.2.2 Taken into account all of the above considerations and in order to have a reasonable allocation of the target extension period of five years (as discussed in Section 5.1.4) amongst different contribution rate jumps, a refined contribution scale for the CSPF Scheme for new recruits as shown in the following table has been constructed (namely the "Refined Scale"):

CSPF contribution rate	Completed years of continuous service on civil service terms	
	Under Current Scale	Under Refined Scale
5.0%	Below 3	Below 3
15.0%	3 – below 15	3 – below 18
17.0%	15 – below 20	18 – below 24
20.0%	20 – below 25	24 – below 30
22.0%	25 – below 30	30 – below 35
25.0%	30 and above	35 and above

The Refined Scale has maintained the same progressive contribution rates of 5%, 15%, 17%, 20%, 22% and 25%, while lengthening the number of years for the contribution rate of 15% by three years from 12 years to 15 years (i.e. 25% longer), 17% by one year from 5 years to 6 years (i.e. 20% longer) and 20% by one year from 5 years to 6 years (i.e. 20% longer). The contribution rate of 22% does not need to be lengthened because the sum of the lengthened periods of *three* years for 15%, *one* year for 17% and *one* year for 20 years has already reached the target extension period of five years.

Under the above refinements, it can be observed that the number of years for jumping to the next contribution rates would be lengthened roughly in proportion to their current pattern, thereby preserving the progressive design characteristics of the Current Scale as per our discussion with CSB. Under the Refined Scale, the civil service new recruits will be eligible to the highest contribution rate of 25% once they have completed 35 years of service, which is five years later than the time under the Current Scale. The overall lengthened service period of five years is in line with the five years of the extended NRA.

5.3 Projected Government's CSPF / MPF Contributions under Refined Scale

We have projected the Government's CSPF / MPF Contributions under the Refined Scale with the proposed NRA and named this as Scenario 3. With the proposed NRA, by refining the Current Scale to the Refined Scale, the Average Contribution Rate is projected to decrease from 19.2% to 18.0%, which is comparable to that based on the current design of the CSPF Scheme and the current NRA (i.e. Scenario 1).

From the perspective of financial implications on the Government's expenditures, Scenario 3 satisfies the Government's objective of targeting the Average Contribution Rate at 18.0% after refinement of the CSPF Scheme.

As the Refined Scale together with the SDSC of 2.5% is projected to have an Average Contribution Rate of 18.0%, it implies that the civil service new recruits in general are expected to be able to enjoy an average contribution rate over their career life with the Government which is similar to that of the serving civil servants.

The graphical illustrations on the Government's projected Annual Contribution Rates and CSPF / MPF contribution amounts under all three scenarios are presented in Appendix B and Appendix C respectively. The detailed projection results of the Government's CSPF / MPF contributions are presented in Appendix D.

5.4 Limitation of Refinement Design

Examination for all possible refinement designs is deemed not practical given the time constraint of this study. Therefore, we have examined a few key refinement designs for the CSPF Scheme in this study based on the objectives and instructions as set out by CSB.

Section 6: Conclusions

6.1 The following table summarises the Average Contribution Rates under the three scenarios:

	NRA of New Recruits	Design of CSPF Scheme	Average Contribution Rate
Scenario 1	Current	Current Scale	18.0%
Scenario 2	Proposed	Current Scale	19.2%
Scenario 3	Proposed	Refined Scale	18.0%

6.2 If there is no extension of NRA (i.e. Scenario 1), the Average Contribution Rate is projected to be 18.0%.

6.3 The Average Contribution Rate will increase from 18.0% to 19.2% upon the extension of NRA if the current design of the CSPF Scheme remains unchanged (i.e. Scenario 2).

6.4 CSB wishes to consider suitable refinements to the Current Scale which could maintain the Average Contribution Rate at 18.0%, the level before the extension of NRA as under Scenario 1. To achieve this target level of 18.0%, the Current Scale needs to be refined to the Refined Scale for new recruits by lengthening the years of service required for jumping to the next contribution rate.

6.5 With the extension of NRA, by refining the Current Scale to the Refined Scale, the Average Contribution Rate will decrease from 19.2% to 18.0%, which is comparable to that based on the current design of the CSPF Scheme under Scenario 1.

6.6 After taking into account the Government's objective of maintaining the Average Contribution Rate at 18.0% and the other refinement criteria, we consider the Refined Scale to be an appropriate refinement of the CSPF Scheme.

Appendix A: Actuarial Assumptions

The key actuarial assumptions adopted in this study are summarised below:

(A) Financial Assumptions

1. Pay scale

The pay scale structure effective 1 April 2013 after one year of assumed pay adjustment of 3.00% applied is assumed to remain unchanged throughout the Projection Period. The annual pay adjustment is assumed to be 3.00% per annum.

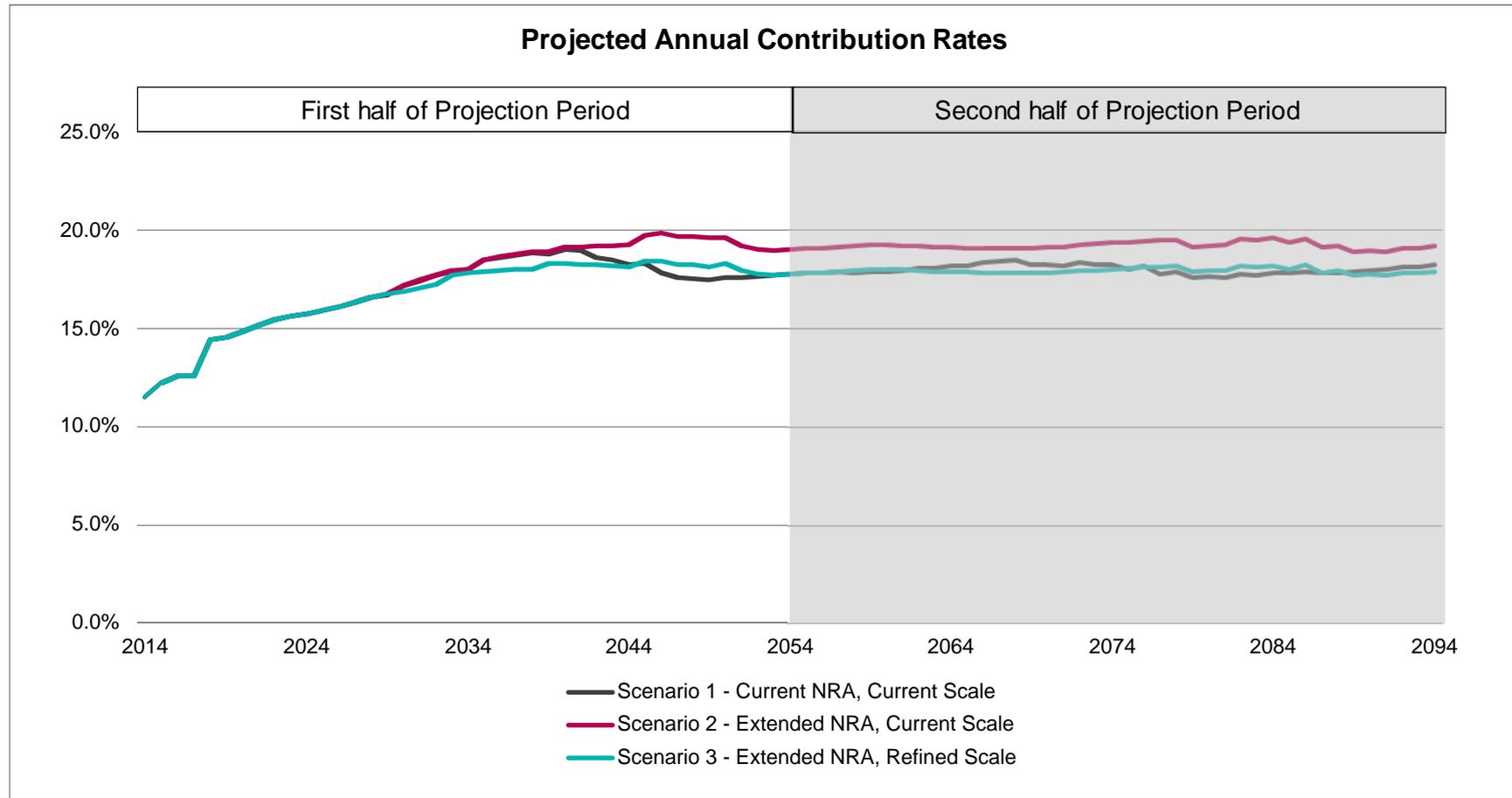
2. MPF Relevant Income

The maximum MPF Relevant Income is assumed to be HK\$30,000 per month at the start of the Projection Period, with an annual rate of increase of 3.00% per annum.

(B) Demographic Assumptions

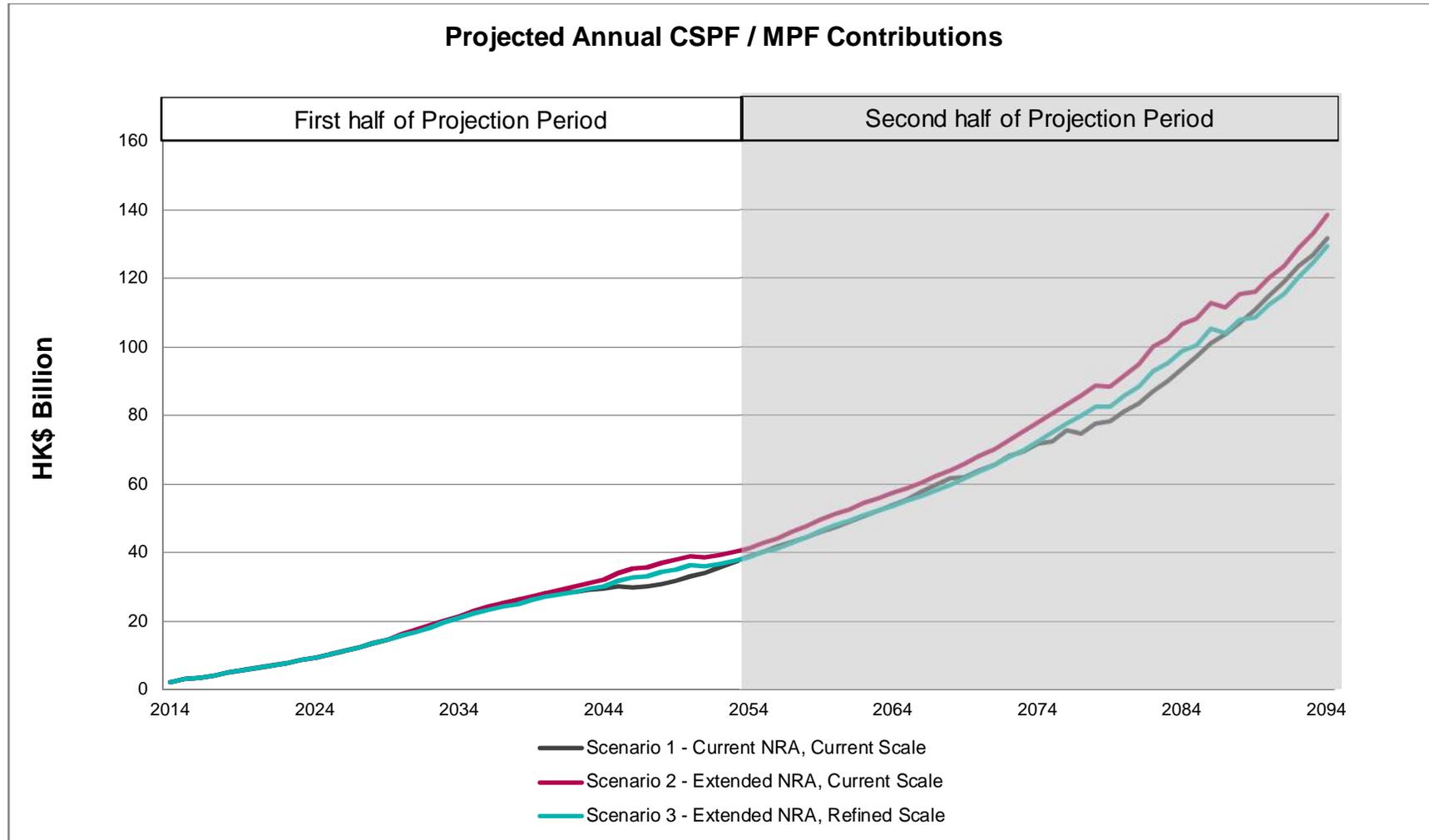
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|--|---|
| 1. <i>Retirement</i> | All civil servants are assumed to retire once they attain their NRA. |
| a) <i>Serving civil servants</i> | The NRA of all serving civil servants are assumed to remain unchanged in accordance with their current employment terms under all scenarios. |
| b) <i>New recruits</i> | The NRA of new recruits will be extended to age 65 for civilian officers and age 60 for disciplined services officers under the scenarios for the proposed NRA. |
| 2. <i>Wastage other than retirement</i> | Nil. |
| 3. <i>General point increases</i> | The pay point is assumed to progress in accordance with the applicable pay scales, and be capped at the maximum point of the applicable rank. |
| 4. <i>Projected headcount</i> | The headcount in each rank is assumed to remain unchanged throughout the Projection Period. |
| 5. <i>Membership profile of new recruits</i> | |
| a) <i>Entry age</i> | The entry age for each Career Ladder is assumed to be the actual average entry age determined based on the historical data for new recruits of the respective Career Ladder. |
| b) <i>Entry pay point</i> | The lowest pay point of the rank. |
| 6. <i>Transition to the CSPF Scheme</i> | The civil servant is assumed to be covered by the MPF Scheme during the 3-year probation period. He or she will become a member of the CSPF Scheme upon completion of the probation period. |

Appendix B: Graph on Projected Annual Contribution Rates



Only the Annual Contribution Rates during the second half of the Projection Period from 2055 to 2094 are used to determine the Average Contribution Rate. This is because all the members of OPS and NPS are expected to retire between 2014 and 2054 and be replaced by new recruits who will join the CSPF and MPF Schemes.

Appendix C: Graph on Projected Annual CSPF / MPF Contributions



Appendix D: Detailed Projection Results of CSPF / MPF Contributions

	First half of Projection Period									Second half of Projection Period							
	2014	2019	2024	2029	2034	2039	2044	2049	2054	2059	2064	2069	2074	2079	2084	2089	2094
Scenario 1- Current NRA																	
(i) Number of civil servants covered by CSPF / MPF Schemes	55,991	100,048	120,277	141,137	158,207	162,722	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756
(ii) Annual Salaries in respect of covered civil servants (HK\$ million)	18,219	38,540	59,729	86,638	117,598	142,844	160,943	180,808	218,113	256,789	296,150	339,197	392,164	444,235	525,868	619,429	720,982
(iii) Annual CSPF / MPF contributions (HK\$ million)	2,101	5,616	9,408	14,482	21,193	26,881	29,385	31,654	38,819	45,960	53,857	61,955	71,643	78,149	93,656	110,845	131,479
(iv) CSPF / MPF Contribution Rate (iii) / (ii)	11.5%	14.6%	15.8%	16.7%	18.0%	18.8%	18.3%	17.5%	17.8%	17.9%	18.2%	18.3%	18.3%	17.6%	17.8%	17.9%	18.2%
Scenarios 2 and 3 - Proposed NRA																	
(v) Number of civil servants covered by CSPF / MPF Schemes	55,991	100,048	120,277	141,137	158,207	162,722	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756	162,756
(vi) Annual Salaries in respect of covered civil servants (HK\$ million)	18,219	38,540	59,729	86,700	117,671	143,312	166,445	193,466	217,203	256,956	299,367	344,939	402,076	461,975	542,957	612,586	721,512
Scenario 2 – Current Scale																	
(vii) Annual CSPF / MPF contributions (HK\$ million)	2,101	5,616	9,408	14,533	21,220	27,101	32,033	37,989	41,287	49,470	57,343	65,926	77,965	88,440	106,479	115,936	138,291
(viii) CSPF / MPF Contribution Rate (vii) / (vi)	11.5%	14.6%	15.8%	16.8%	18.0%	18.9%	19.2%	19.6%	19.0%	19.3%	19.2%	19.1%	19.4%	19.1%	19.6%	18.9%	19.2%
Scenario 3 – Refined Scale																	
(xi) Annual CSPF / MPF contributions (HK\$ million)	2,101	5,616	9,408	14,533	20,965	26,255	30,205	35,059	38,552	46,228	53,614	61,588	72,514	82,600	98,862	108,381	129,205
(xii) CSPF / MPF Contribution Rate (xi) / (vi)	11.5%	14.6%	15.8%	16.8%	17.8%	18.3%	18.1%	18.1%	17.7%	18.0%	17.9%	17.9%	18.0%	17.9%	18.2%	17.7%	17.9%

Figures in this Appendix may not add up due to rounding.